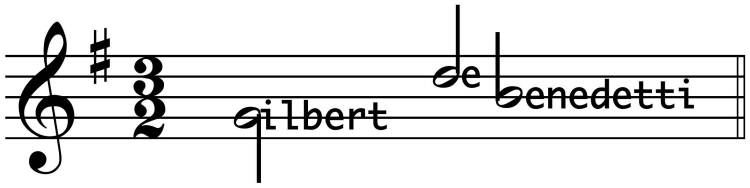


G MAJOR MUSIC THEORY

MUSIC THEORY RESOURCES

MUSIC FUNDAMENTALS: WORKBOOKS

https://www.gmajormusictheory.org/Fundamentals/workbooks.html

MUSIC FUNDAMENTALS

gmajormusictheory.org/Fundamentals/workbooks.html

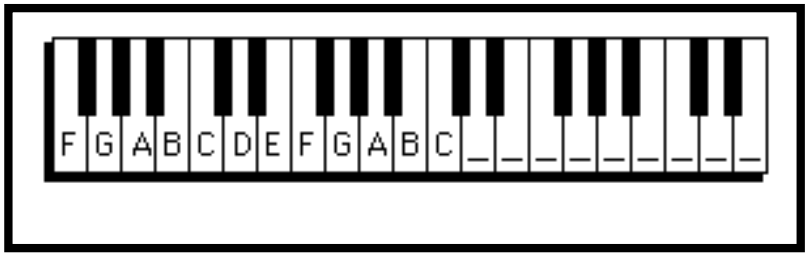
Contents

Chapter 1. The Keyboard and Treble Clef

In this chapter you will:
1. Play a tune on the keyboard
2. Identify notes on the keyboard
3. Write treble clefs on a staff
4. Review the material to here
5. Identify notes on the treble staff
6. Write notes on the treble staff
7. Identify whole, half and quarter notes, and draw stems on note-heads
8. Match notes on the keyboard with notes on the staff
9. Write a familiar song

Date:

1.1 Play a tune on the keyboard



•Harmony is the study of how pitches, or notes, are arranged to make music. In order to explain these arrangements it is convenient to show the keys on a piano keyboard. On the keyboard each key plays a certain pitch.
•Each white key corresponds to a letter A, B, C, D, E, F or G. The letters proceed alphabetically from A to G and then they go back to A.
•Black keys are arranged in alternating groups of twos and threes. All A's look alike in this pattern, all B's look alike and so on.

---

1. *LABEL* the remaining keys on the keyboard above.

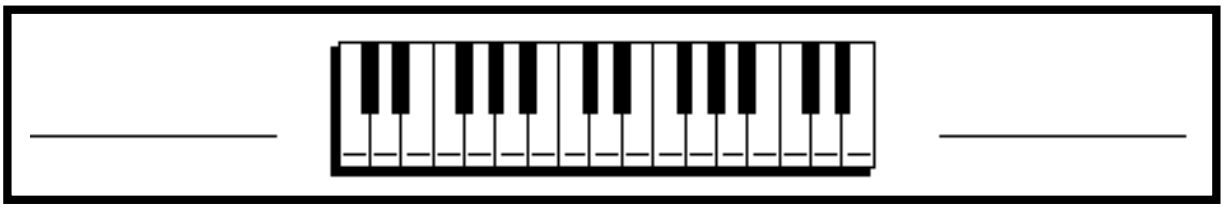
2. *PLAY* "Mary Had a Little Lamb" as shown below. The note letters are above the words. You can begin on any E on the keyboard.

E D C D E E E D D D E G G
Mary had a little lamb, little lamb, little lamb,

E D C D E E E E D D E D C
Mary had a little lamb, its fleece was white as snow.

Date:

1.2 Identify notes on the keyboard



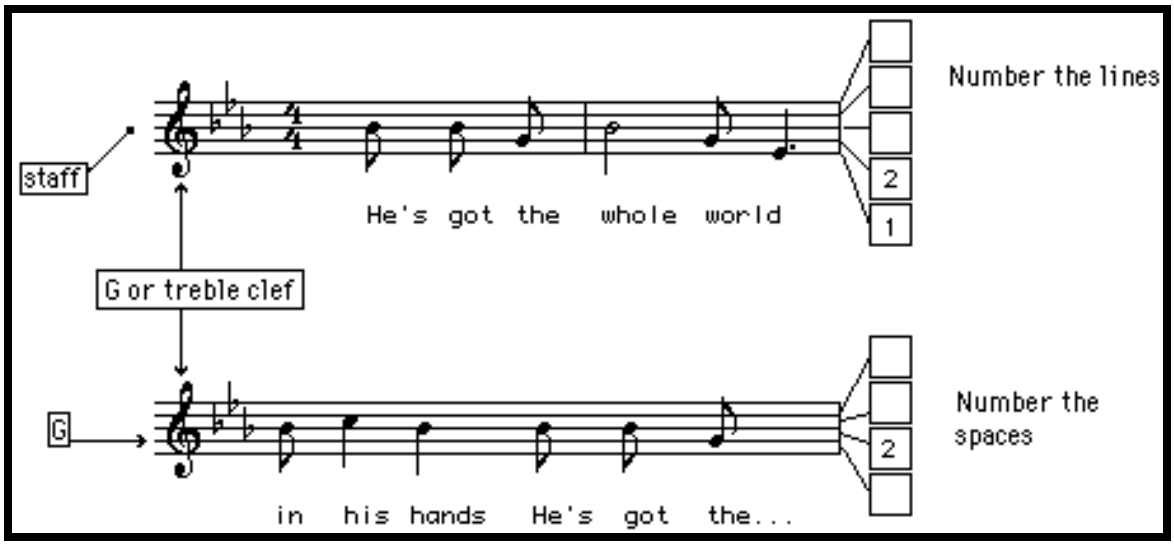
- On the keyboard keys to the left sound low and keys to the right sound high.
- "Middle C" is often used as a reference note.
- The first G above middle C (to the right of middle C), and the first F below middle C (to the left of middle C) are also used as reference notes.

---

1. *WRITE* the letter name for each white key on the keyboard above. This keyboard does not start in the same place as the keyboard on the previous page.
2. *WRITE* "high" and "low" in the correct spaces on either side of the keyboard.
3. *CIRCLE* the C which is closest to the middle of the keyboard.
4. *CIRCLE* the first G above middle C, and the first F below middle C.
5. *GO ONLINE* to www.gmajormusictheory.org
   a. *CLICK* "Music Fundamentals"
   b. *CLICK* in the "Virtual Flash Cards" column:
      1.1 White keys on the keyboard
   c. *PRACTICE* the letter names you have learned on the keyboard.

Date:

1.3 Write treble clefs on a staff



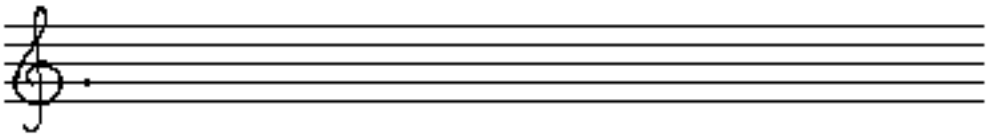
•Music is written on staffs. A staff is a set of five lines and four spaces.
•Lines and spaces on the staff are numbered from the bottom.
•Each line and space stands for a certain pitch or note, and is given a letter A through G. These letters refer to the letters for the keys on the keyboard.
•Each staff of music begins with a clef. A clef is a symbol which identifies a line and space with a letter.

•This symbol,  , is a G or treble clef. The G or treble clef identifies the second line as the note G above the piano's middle C.

---

1. *NUMBER* the lines and spaces in the squares beside the staffs at the top of the page.

2. *WRITE* five treble clefs on the staff below. After each clef put a dot on the G line.



Date:

1.4 Review the material to here

COMPLETE the following sentences:

1. A staff is _____

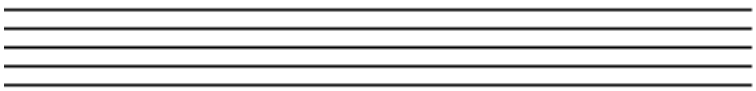
2. The note letters are _____

3. A clef is _____

4. The G or treble clef identifies

_____

5. Write two treble or G clefs. Put a dot on the second line.

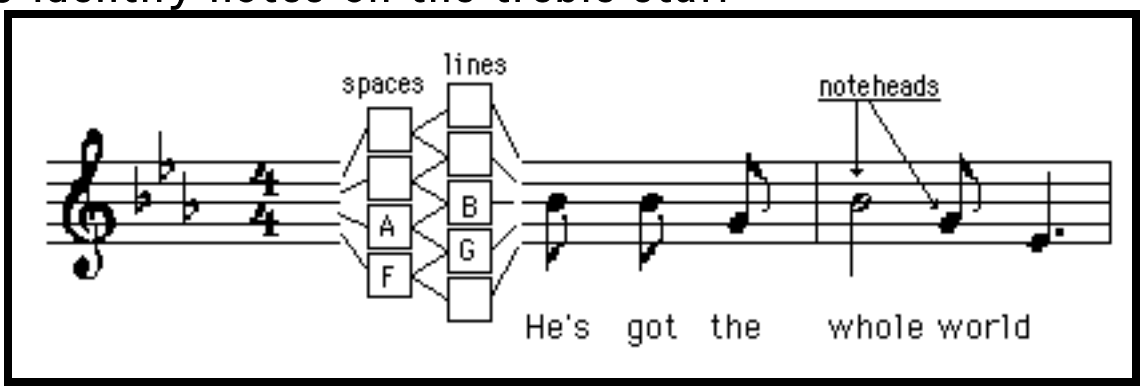


6. Notes to the right on the keyboard sound (higher/lower) _____.

7. Notes to the left on the keyboard sound (higher/lower) _____.

Date:

1.5 Identify notes on the treble staff

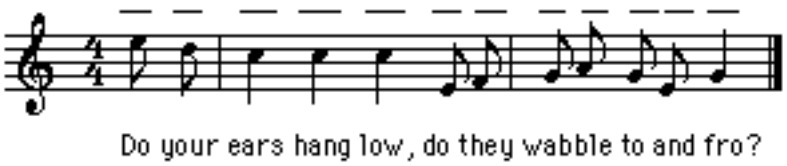


• Letter names proceed alphabetically on the staff from low to high alternating lines and spaces. When G is reached, the letters go back to A and then repeat.
• Note-heads are almost-circular ovals which indicate which pitch is to be played or sung. Note-heads may be filled in or open.
• A note-head is on a line if a line goes though it. It is in a space if a line does not go through it.

---

1. *WRITE* the letter name for each line and space in the boxes at the top of the page.

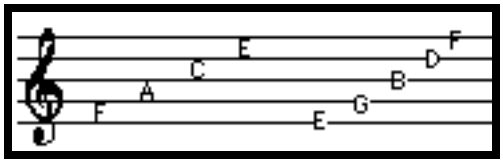
2. *WRITE* the letter name for each note-head in the music below.



3. *PLAY* this phrase.

Date:

1.6 Write notes on the treble staff

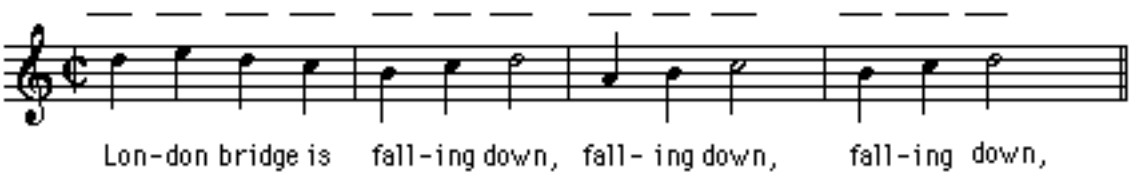


There is a faster way to identify the letters on a staff with treble clef:

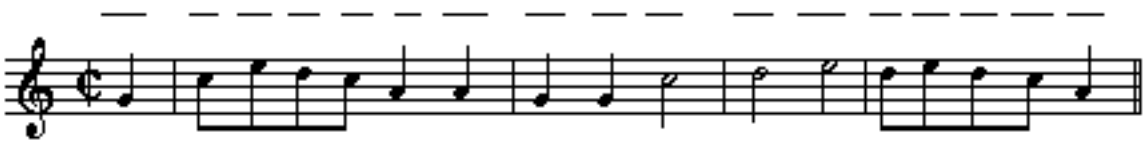
- Notes in the spaces, starting from the bottom, spell the word FACE.
- Notes on the lines, starting from the bottom, are E G B D and F, as in Every Good Boy Does Fine.

---

1. *IDENTIFY* the following notes, and learn to *PLAY* one of these phrases:



The Arkansas Traveler --Traditional fiddle tune

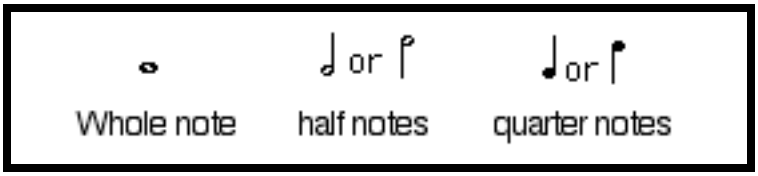


2. *DRAW* a treble clef at the beginning of the staff below.
3. *DRAW* open note-heads (without stems) for the letters above the staff.

4. *GO ONLINE* to www.gmajormusictheory.org
   a. *CLICK* "Music Fundamentals"
   b. *CLICK* in the "Virtual Flash Cards" column:
      1.2 Treble Clef
   c. *PRACTICE* the letter names you have learned on the staff.

Date:

1.7 Identify whole, half and quarter notes, and draw stems on note-heads

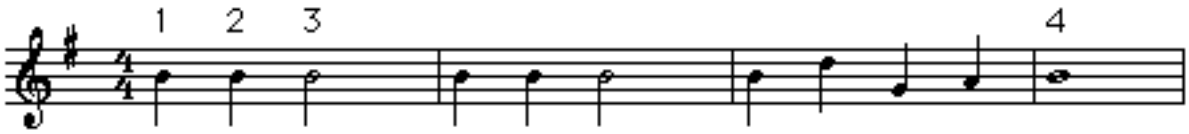


•A beat is a steady pulse which underlies the music. When you tap your foot to the music, you usually tap the beat.
• Stems are vertical lines which are frequently attached to the note-heads.
•Open note-heads without stems, 𝅝, are usually four beats long. They are called whole notes.

•Open note-heads with stems, 𝅗𝅥 or 𝅗𝅥, are usually two beats long. They are half as long as whole notes, so they are called half notes.

•Filled in note-heads with stems, ♩ or ♩, are usually one beat long. They are one quarter as long as whole notes, and so they are called quarter notes.

IDENTIFY the numbered notes as whole, half or quarter notes:

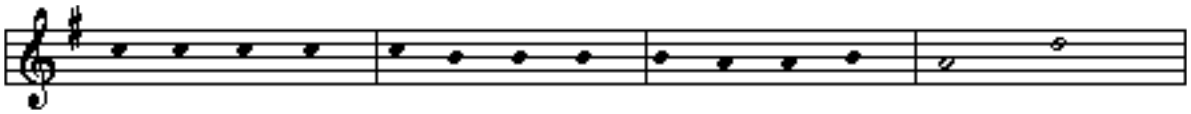


1._____ 3. _____

2._____ 4. _____

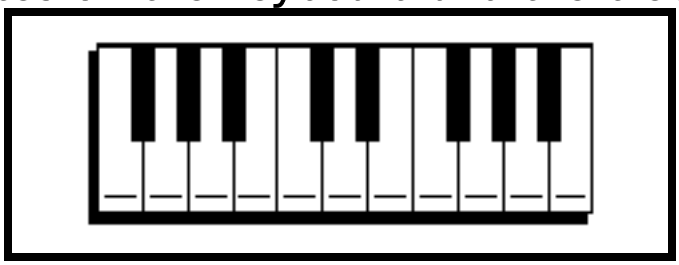
•If a note-head is on the middle line or higher, the stem is on the left of the note-head. This stem goes down.
•If a note-head is on the second space or lower, the stem is on the right of the note-head. This stem goes up. See the above staff.

DRAW stems for these quarter notes and half notes.



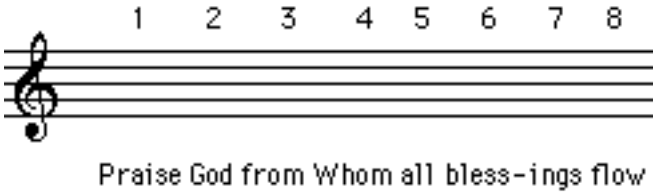
Date:

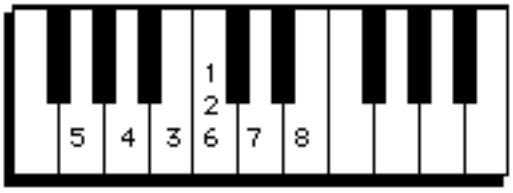
1.8 Match notes on the keyboard and the treble staff



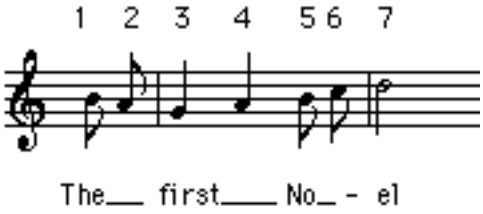
1. *WRITE* letter names on each white key on the keyboard above.

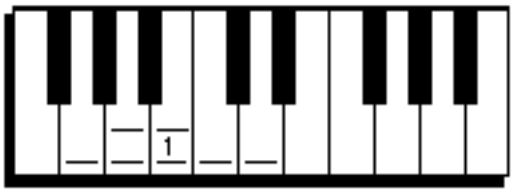
2. *WRITE* quarter notes under each number according to where the number appears on the keyboard.





3. *WRITE* on the keyboard the number for each note on the staff.

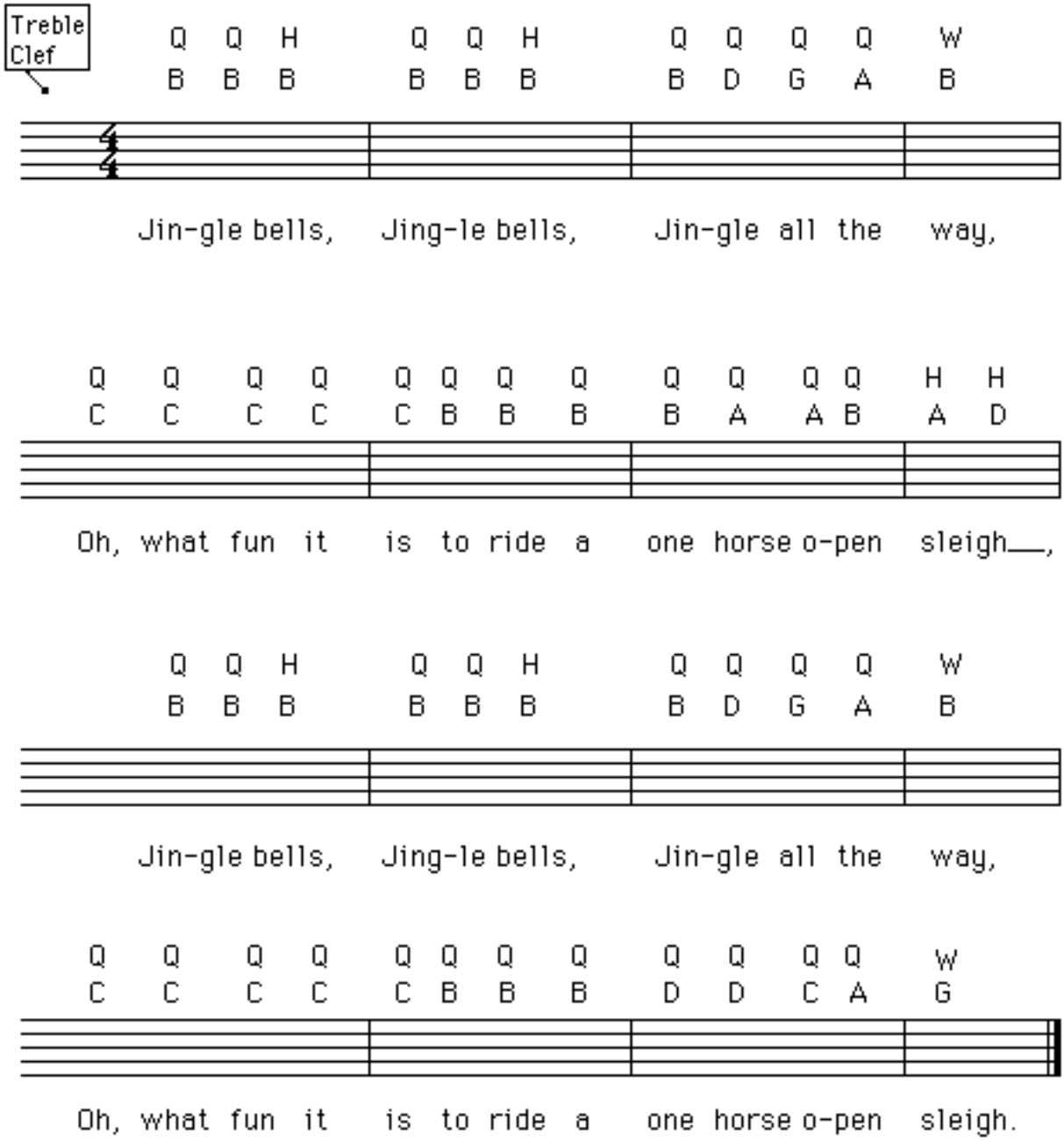




Date:

1.9 Write a Familiar Song

1. *WRITE* the treble clefs and the notes to "Jingle Bells."
For the notes, refer to the note letters and the durations above the staffs.
Durations are on top. Use this code to write them correctly:
Q= quarter note, H=half note and W= whole note.
2. *PLAY* "Jingle Bells!"

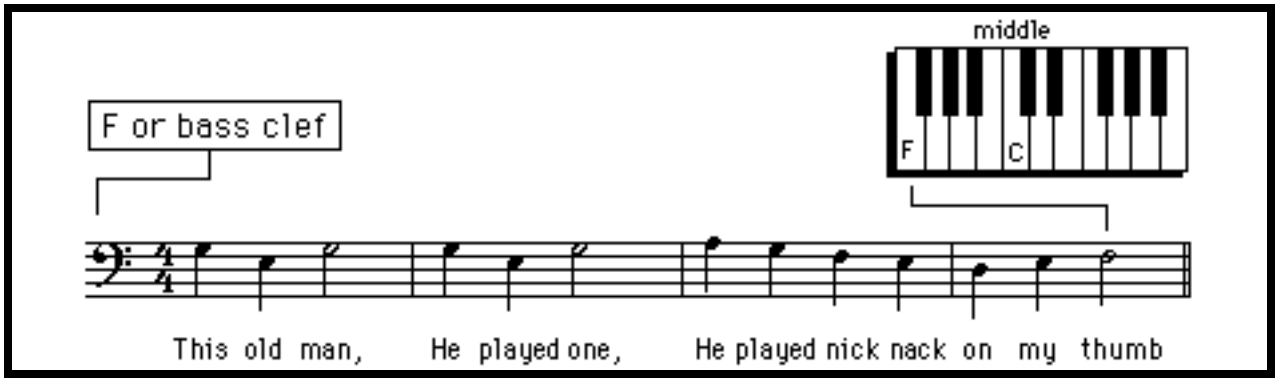


Chapter 2. Bass Clef

In this chapter you will:
1.Write bass clefs
2. Write some low notes
3. Match low notes on the keyboard with notes on the staff
4. Write eighth notes
5. Identify notes on ledger lines
6. Identify sharps and flats on the keyboard
7.Write sharps and flats on the staff
8. Write enharmonic equivalents

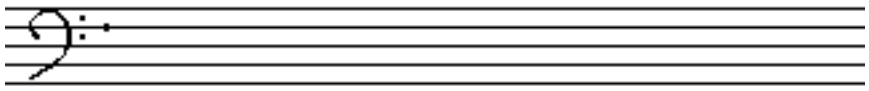
date:

2.1 Write bass clefs

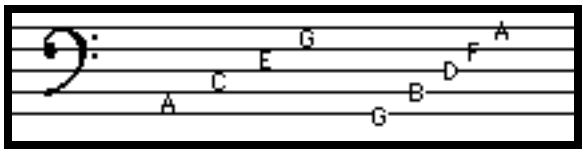


• The symbol at the beginning of the above staff, 𝄢, is an F or bass clef.
• The F or bass clef says that the fourth line of the staff is the F below the piano's middle C. This clef is used to write low notes.

DRAW five bass clefs. After each clef, which itself includes two dots, put another dot on the F line.



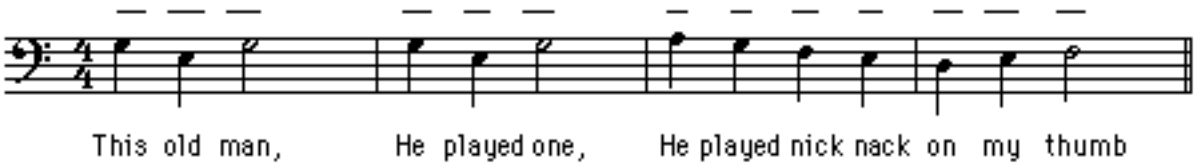
2.2 Write some low notes



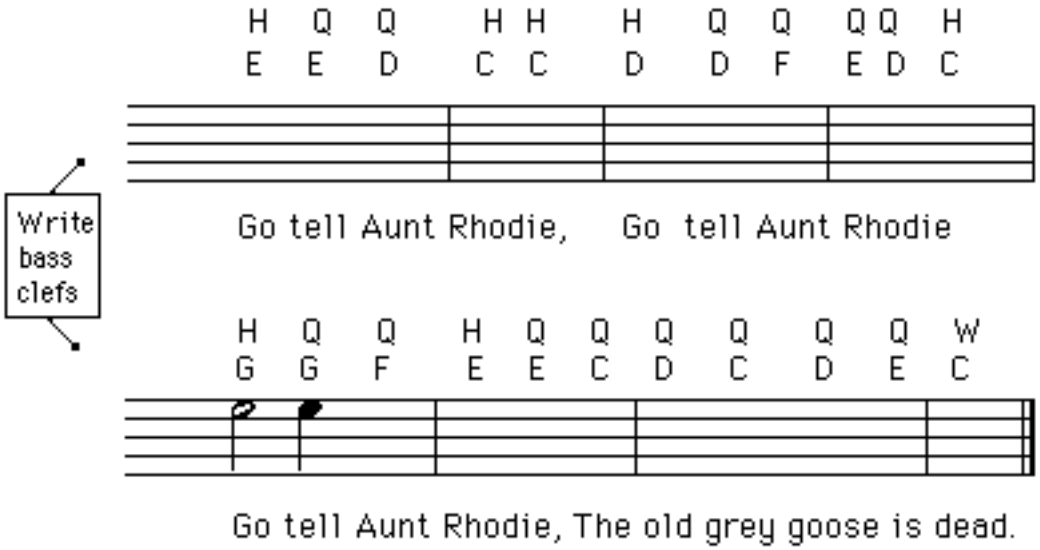
•The notes on the spaces of a staff with bass clef starting from the bottom space are:
A, C, E and G as in All Cows Eat Grass.
•The notes on the lines of a staff with bass clef starting from the bottom line are:
G, B, D, F and A as in Good Boys Do Fine Always.

---

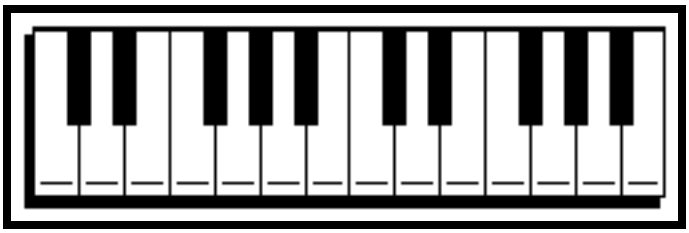
1. *IDENTIFY* the notes in the song "This Old Man." PLAY it.



2. *WRITE* the notes and bass clefs for the song, "Go Tell Aunt Rhodie"
Q = quarter note H = half note W = whole note

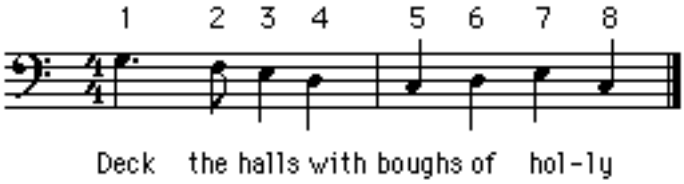


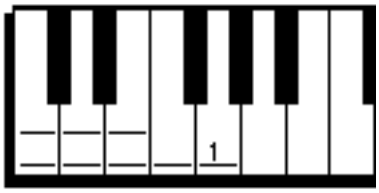
2.3 Match low notes on the keyboard with notes on the staff



A. Bass clef and the keyboard

1. *WRITE* letters on the white keys of the above keyboard.
2. *WRITE*, on the keyboard below, the number of each note which appears on the staff to the left. Learn to play this phrase.





B. Review

COMPLETE the following sentecnes

1. The phrase for remembering the lines for bass clef is

_____

2. The spaces in treble clef spell

_____

3. The phrase for remembering the lines for treble clef is

_____

4. The phrase for remembering the spaces for bass clef is

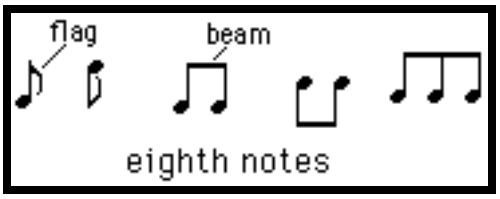
_____

C. Practice

GO ONLINE to http://www.classic.musictheory.net/.

1. *SELECT* "Note Trainer" from the "Trainers" menu.
2. *CLICK* "Settings."
3. *HIGHLIGHT* bass clef only; *DRAG* notes to the top and bottom lines.
4. *CLICK* "Settings" again.
5. *REVIEW* treble clef notes as needed.

2.4 Write eighth notes



- All the above notes are called eighth notes.
- When there is only a single eighth note, its stem has a flag.
- When two or more eighth notes appear together they are usually connected with a beam.
- Eighth notes are twice as fast as quarter notes. There are usually two eighth notes in one beat. There are eight eighth notes in a whole note.

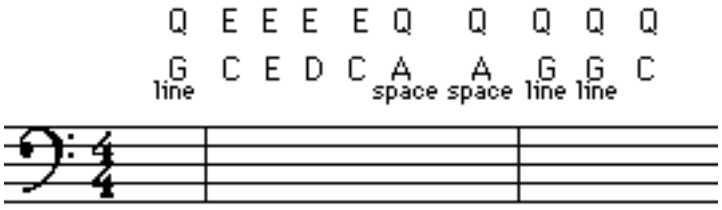
---

1. *DRAW* these notes:

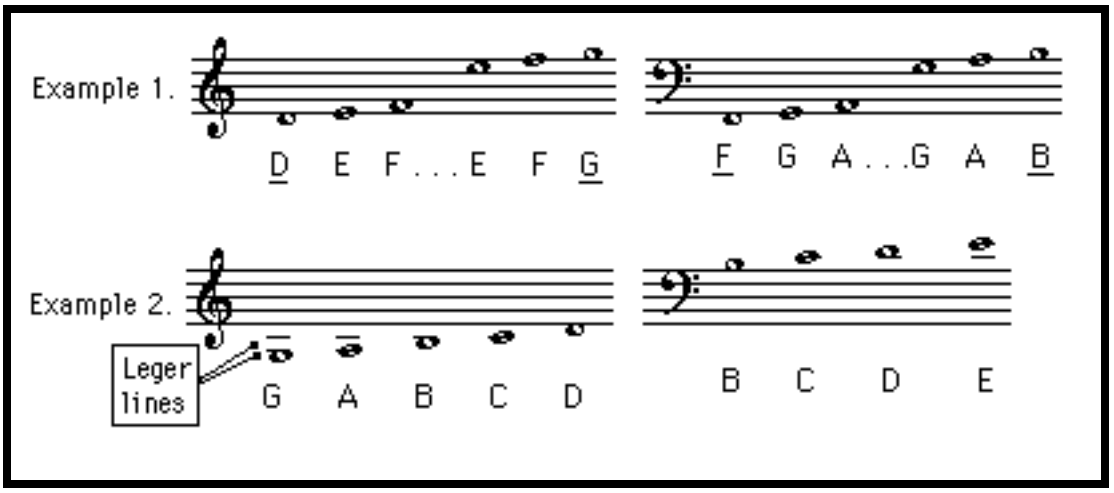
Eighth note | 2 eighth notes connected with a beam | Quarter note | Half note | Whole note

2. *WRITE* the notes to "Arkansas Traveler" on the staff below. Connect the eighth notes with a beam.

In the top line E = eighth note and Q = quarter note.

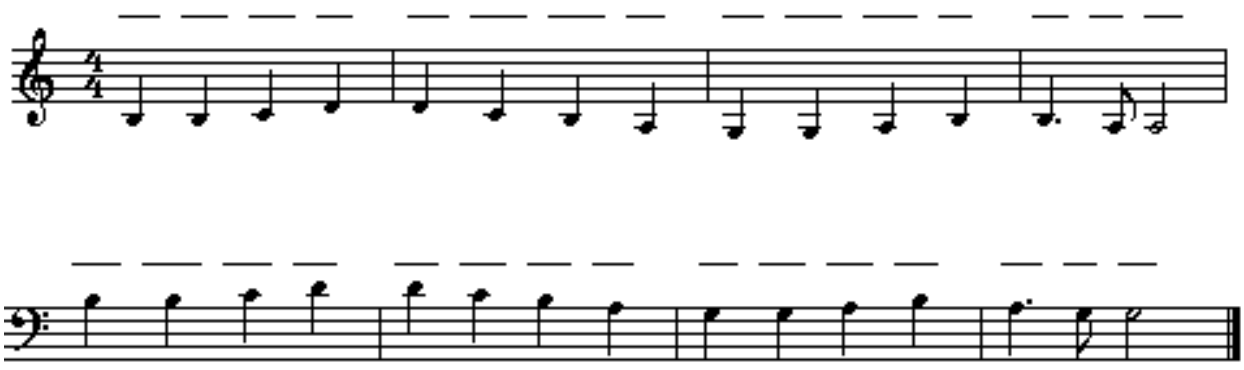


2.5 Identify notes above and below the staff; ledger lines

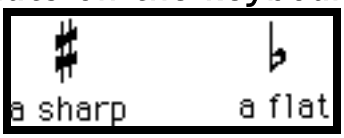


•Notes can be written above and below the staff. Their letter names continue in alphabetical order. See example 1 above.
•Staffs can be extended with ledger lines. Ledger lines are short lines above, below or through notes to show pitches beyond the staff. See example 2.

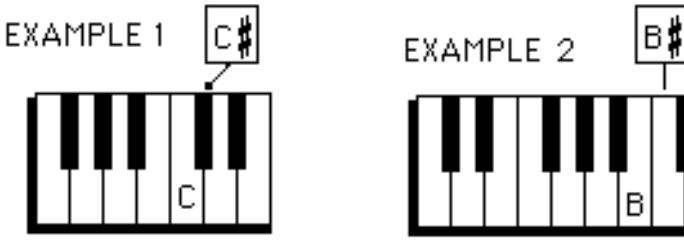
IDENTIFY the notes to Beethoven's "Ode to Joy."



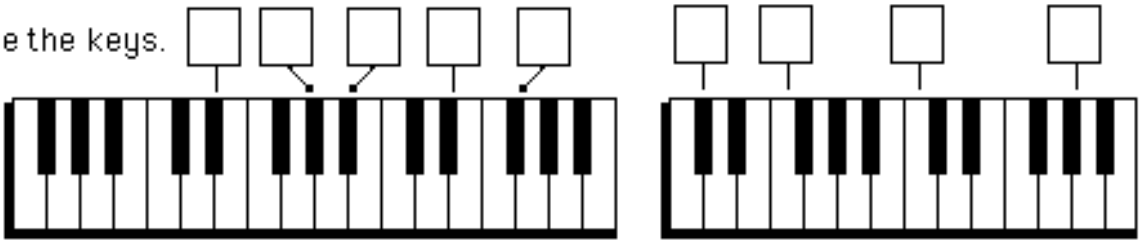
2.6 Identify sharps and flats on the keyboard

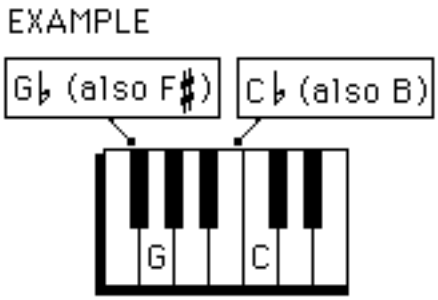


•A sharp, ♯, after a letter name means play the key to the right, or higher, on the keyboard without skipping over any keys, whether black or white. See example 1 below. C♯ is to the right of C.
•If the key to the right is white, give the key a new second name with a sharp. See example 2 below.
•A flat, , after a letter means play the key to the left, or lower, on the keyboard without skipping over any keys, whether black or white.

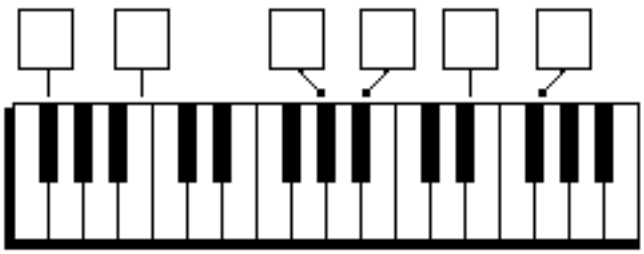


1. Name the keys.





2. Name the keys with flats.



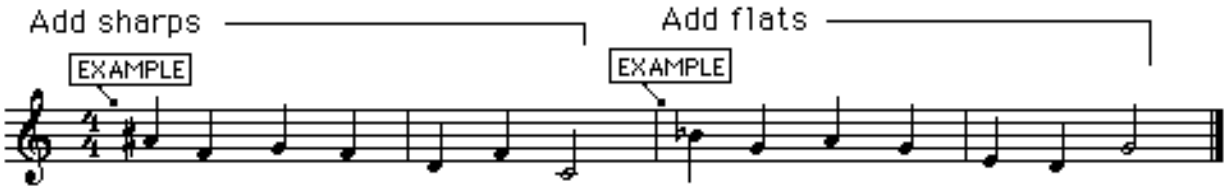
2.7 Write sharps and flats on the staff

Sharps and flats on the staff.

- When writing sharps and flats with letter names, write the sharp or flat after the letter--C♯.
- When writing sharps and flats with notes on a staff, write the sharp or flat before the note--♯F.
- On the staff, the space in the middle of the sharp or flat should cover the same line or space as the note next to it.

---

1. *WRITE* sharps or flats in front of these notes.



2. *REVIEW*

a. Notes sound _____ on the right side of the keyboard.
(higher or lower)

b. Notes sound _____ on the left side of the keyboard.
(higher or lower)

c. A sharp means play the key to the _____ on the keyboard.
(right or left)

d. A flat means play the key to the _____ on the keyboard.
(right or left)

e. The key for D♯ is to the _____ of D.
(right or left)

f. The key for C♭ is to the _____ of C.
(right or left)

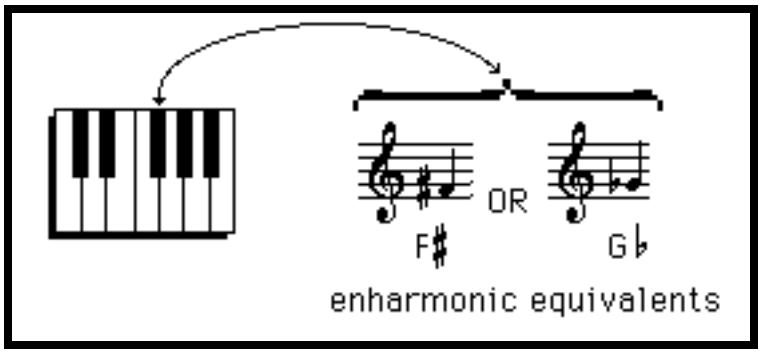
g. D♯ sounds _____ than D.
(higher or lower)

h. C♭ sounds _____ than C.
(higher or lower)

3. *GO ONLINE* to http://www.classic.musictheory.net/.

a. *SELECT* "Keyboard Trainer" from the "Trainers" menu.
b. *CLICK* the "Black Keys" circle so it says "On."
c. *CHOOSE* the correct letters for the highlighted keys.

2.8 Write enharmonic equivalents



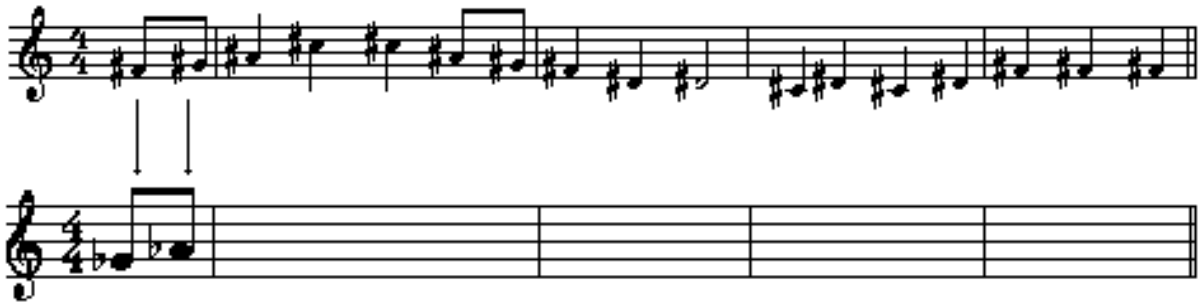
•Each key on the keyboard can be written in at least two different ways on the staff, and can be called by at least two different letter names. Two letter names or two notes on the staff which refer to the same pitch are called enharmonic equivalents.

---

1. *WRITE* enharmonic equivalents for each of these notes:

A♭ ____	B♭ ____	C♭ ____
D♭ ____	D♯ ____	F♯ ____
B♯ ____	C♯ ____	A♯ ____

2. *REWRITE* the following music using flats instead of sharps.



3. *PLAY* this tune.

Chapter 3 Basic Rhythms

In this chapter you will:
1. Review some rhythmic notation
2.Draw bar lines to make measures
3. Write time signatures
4. Clap rhythms with sixteenth notes
5. Count the beats in phrases with dotted notes
6. Count the beats in phrases with rests

date:

3.1 Review some rhythmic notation

1. A beat is _____

(see worksheet 1.7)

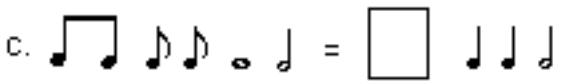
2. *DRAW* lines to match items in column 1 with items in column 2,
AND DRAW lines to match items in column 2 with items in column 3.

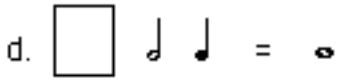
1. Note symbol	2. Note Name	3. Usual number of beats
	2 eighth notes	1
	a quarter note	2
	a whole note	4
	an eighth note	1
	a half note	one half

3. *DRAW* the note in the box which makes one side of the "equation" equal the other side.

a. 

b. 

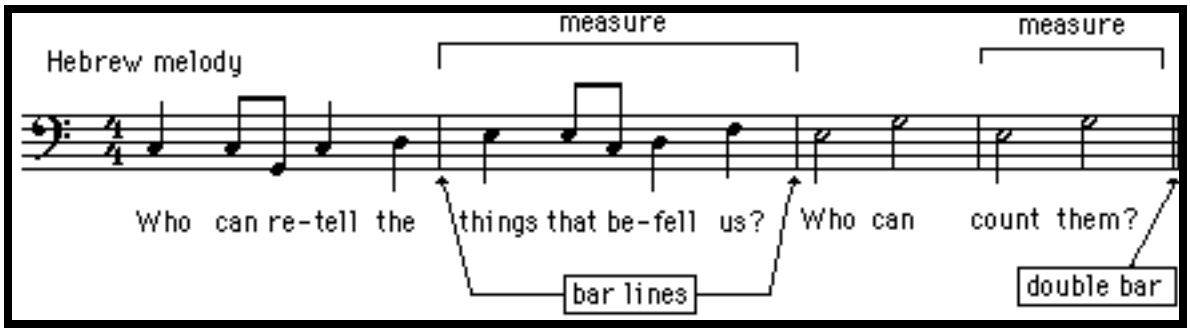
c. 

d. 

e. 

Date:

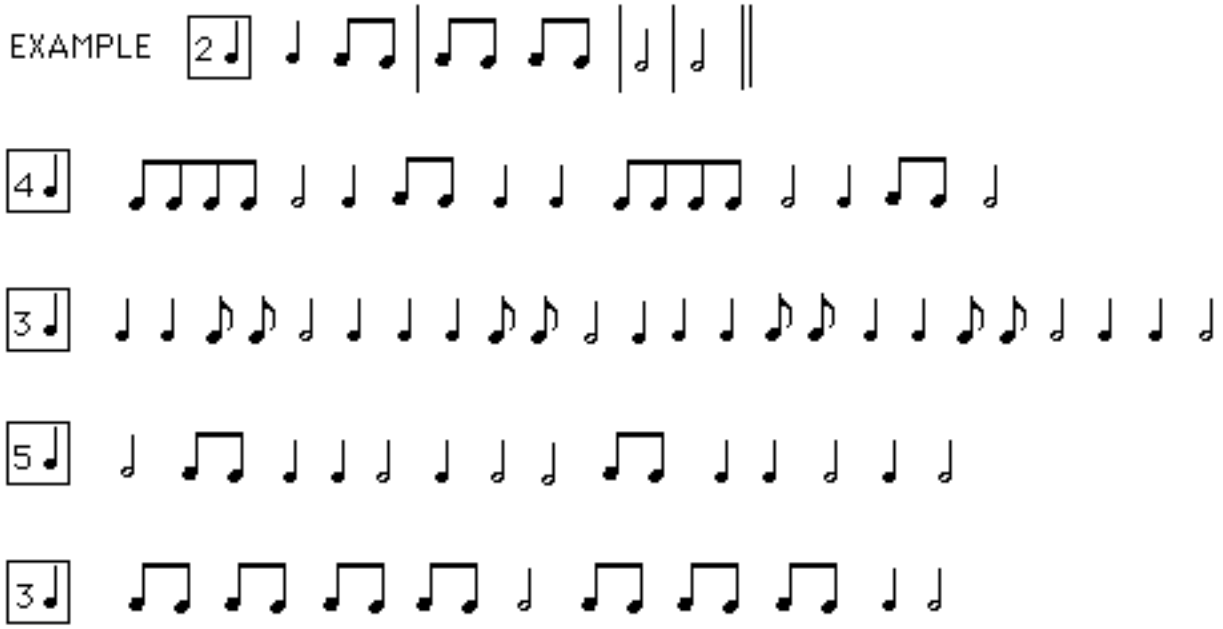
3.2 Draw bar lines to make measures



- Vertical lines on the staff are called bar lines.
- The spaces between the bar lines are called measures.
- The first measure in a staff does not usually have a left bar line.
- Each measure has the same number of beats.
- Measures show the regular pattern of strong and weak beats in music. The first beat of every measure is strong.
- The double bar at the end of the above staff signals the end of the music

---

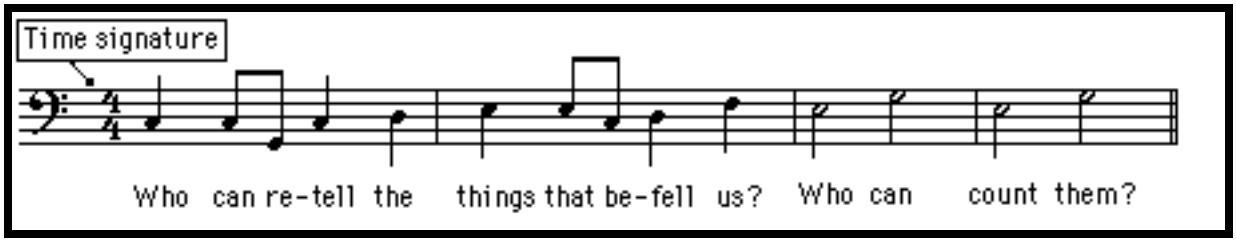
1. *HOW MANY* measures are there in the phrase above?_____
2. *DRAW* bar lines in the following phrases. Each measure should have the number of quarter note beats which are shown in the box on the left. End the phrases with a double bar.



Clap these rhythms.

Date:

3.3 Write time signatures



•The numbers at the beginning of a piece, the two fours after the clef in the above phrase, are called a time signature. The time signature tells how long each measure is.
•The top number tells how many counts there are in each measure.
The bottom number tells what kind of note to count. If there is a 4 on the bottom, count the time in terms of quarter notes.

---

1. *HOW MANY* quarter notes long is a measure of $\frac{3}{4}$ (that is, a measure preceded by a time signature of $\frac{3}{4}$)?

2. *HOW MANY* quarter notes long is a measure of $\frac{6}{4}$?

3. WRITE the time signatures in the boxes. Count the length of each measure in terms of quarter notes.

EXAMPLE $\frac{6}{4}$ 1 2 3 4 5 6 | 1 2 3 4 5 6 ||

1. ☐

2. ☐

3. ☐

4. DRAW bar lines according to the time signatures. End with a double bar.

EXAMPLE $\frac{4}{4}$

1. $\frac{3}{4}$

2. $\frac{2}{4}$

3. $\frac{4}{4}$

Date:

3.4 Clap rhythms with sixteenth notes

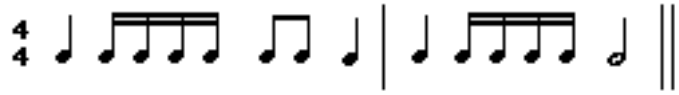
• All the notes above are called sixteenth notes. Sixteenth notes either have two flags or are connected by two beams.
•There are four sixteenth notes in a quarter note, the usual beat.

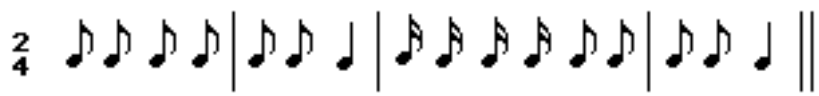
•There are 16 sixteenth notes in a whole note.

CLAP these rhythms:

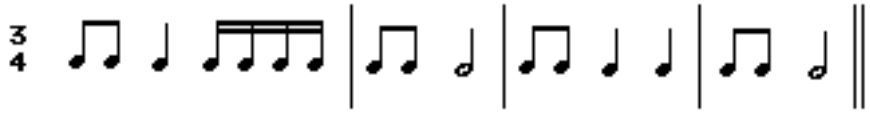
1. 

2. 

3. 

4. 

5. 

6. 

Date:

3.5 Count the beats in phrases with dotted notes

			
beats in note + beats in dot	1 + ½	2 + 1	4 + 2
total number of beats	1 ½	3	6

assume quarter note beats

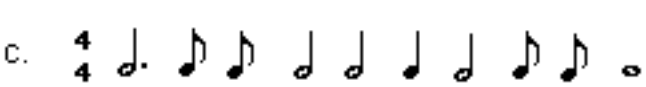
- All the above notes are dotted notes.
- A dot after a note lengthens the note by half the value of the note itself. So the value of the dot depends on the value of the note which precedes it.
- As shown above: dotted quarter notes are usually 1 -1/2 beats long,
  dotted half notes are usually 3 beats long, and
  dotted whole notes are usually 6 beats long.

---

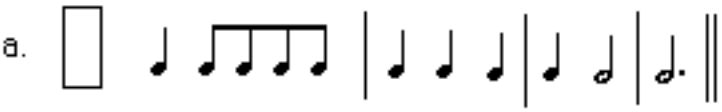
1. *DRAW* bar lines:

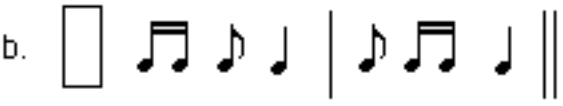
a. 

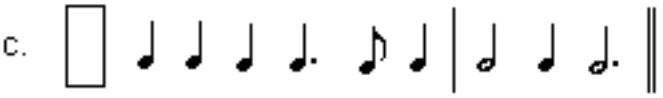
b. 

c. 

2. *WRITE* the time signatures

a. 

b. 

c. 

Date:

3.6 Count the beats in phrases with rests

𝅝	whole note	4 beats
𝄻	whole rest	
𝅗𝅥	half note	2 beats
𝄼	half rest	
♩	quarter note	1 beat
𝄽	quarter rest	
♪	eighth note	1/2 beat (2 per beat)
𝄾	eighth rest	
𝅘𝅥𝅯	sixteenth note	1/4 beat (4 per beat)
𝄿	sixteenth rest	

- Rests tell how long silences are in music.
- Each note has a rest which stands for the same length of time as the note. See the chart above.

---

1. *DRAW* rests in the boxes so that both sides of the "equations" add to the same length of time.

1. ♩ 𝄽 = ♩ ☐ ♪

2. 𝅗𝅥. ☐ ☐ = ♩ 𝄼 ♩ ♫

3. ♪ ♩ 𝄾 = ☐

4. 𝄽 = ♬ ☐

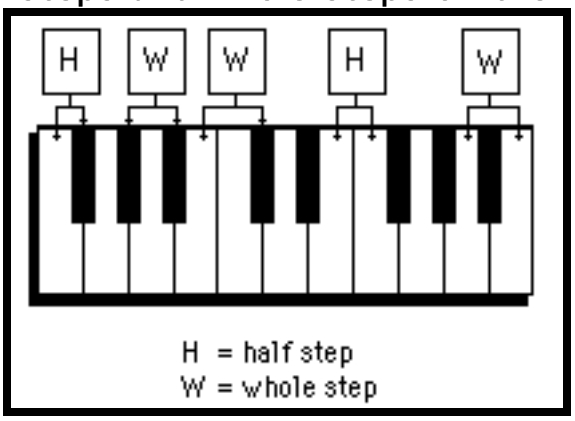
5. ☐ = ♩ 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯 𝄿 𝄿 ♪ ♩

2. *GO ONLINE* to www.gmajormusictheory.org
   a. *CLICK* "Music Fundamentals"
   b. *CLICK* in the "Virtual Flash Cards" column:
      3.1 Note & Rest Durations
   c. *PRACTICE* the durations you have learned.

Chapter 4. Major Scales and the Circle of Fifths

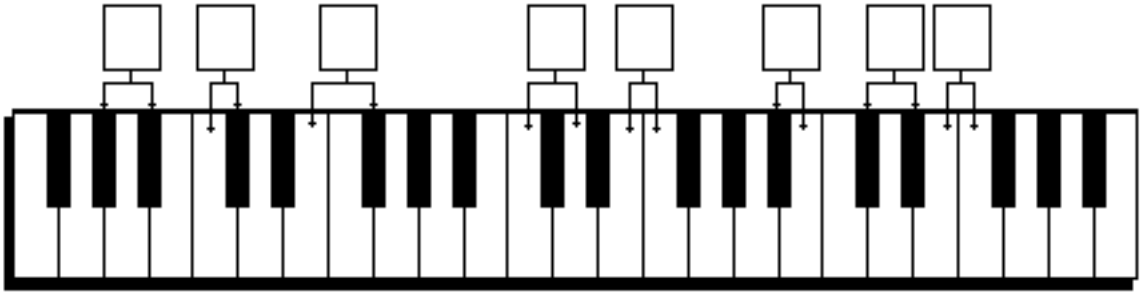
In this chapter you will:
1.Identify half steps and whole steps on the keyboard
2. Identify half steps and whole steps on the staff
3. Write half steps and whole steps on the staff
4. Mark the notes of major scales on the keyboard
5. Mark the notes of major scales on a keyboard in the circle of fifths
6. Write phrases to memorize keynotes in the circle of fifths
7. Fill in the keys, in order, on the circle of fifths.
8. Write major scales on the staff
9. Write the sharp scales on a staff in the circle of fifths
10. Write the flat scales on a staff in the circle of fifths

4.1 Identify half steps and whole steps on the keyboard

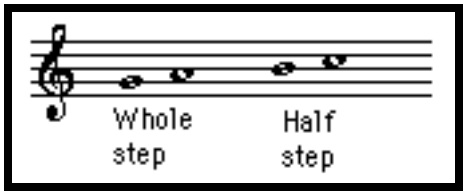


• A half step is the closest possible distance between two notes. There can be no notes in between two notes which are separated by a half step.
• A whole step is a distance between two notes such that there is one and only one note between those two notes. A whole step equals two half steps.

IDENTIFY the distances on the keyboard below as "H" for half step or "W" for whole step.



4.2 Identify half steps and whole steps on the staff

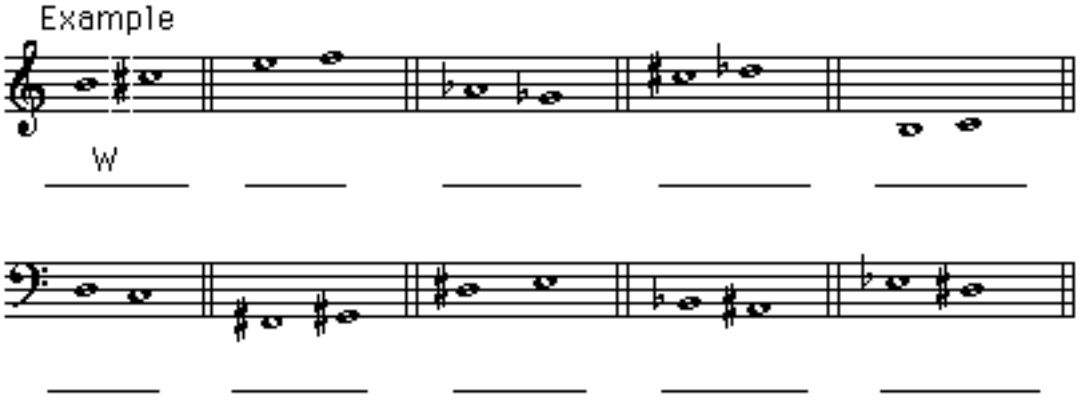


• The staff by itself does not show half step and whole step relationships. See the illustration above. To find half steps and whole steps on the staff, refer to the keyboard.

---

1. *FILL IN* the letter names for the white keys on this keyboard.

2. *IDENTIFY* the pairs of notes as separated by either a half step (H), or a whole step (W), or as being enharmonic equivalents (E).

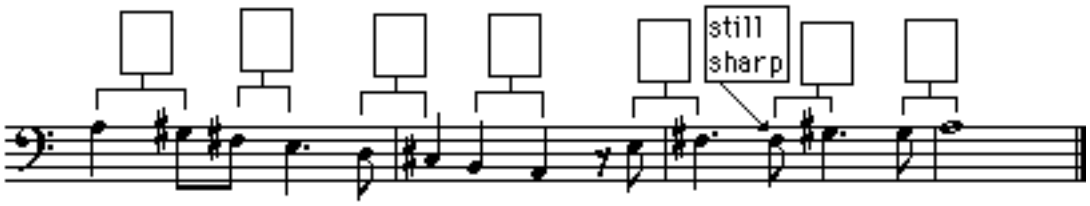


4.3 Write half steps and whole steps on the staff

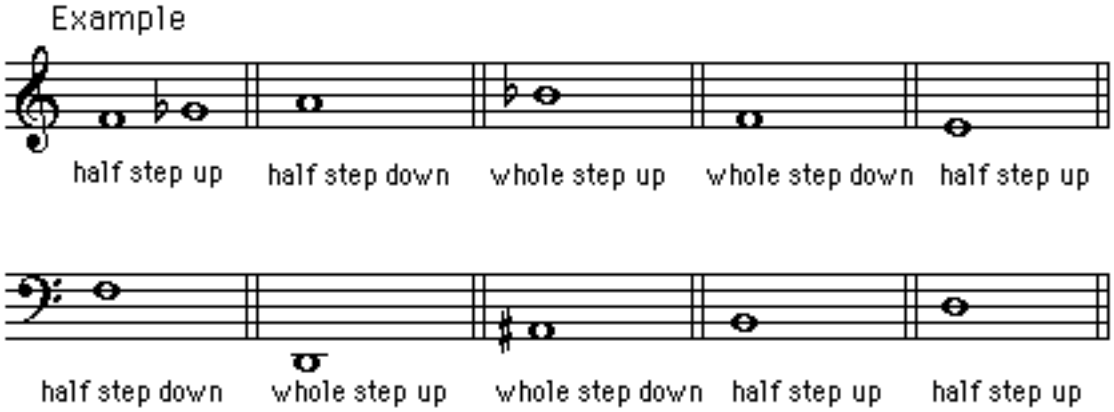
• A sharp or flat applies to the note which follows it AND to all the following notes of the same letter name in the measure.

---

1. IDENTIFY the bracketed pairs of notes as separated by either a half step (H), or a whole step (W). Refer to the keyboard.

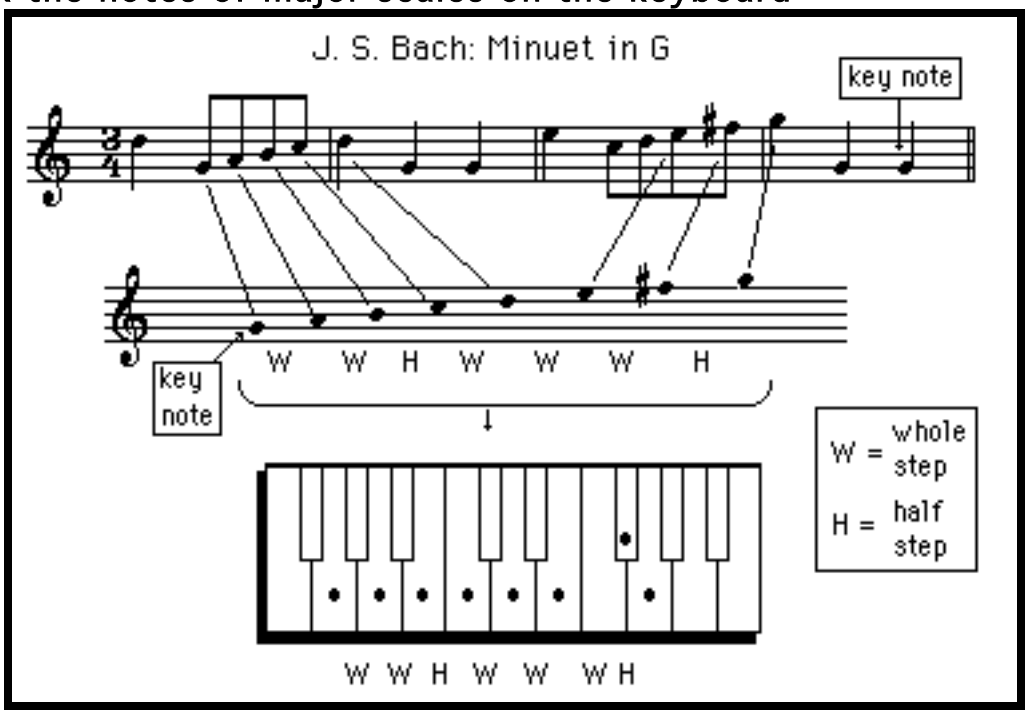


2. *WRITE* notes which are a half step up or down, or a whole step up or down from the given note.



2. *GO ONLINE* to www.gmajormusictheory.org
   a. *CLICK* "Music Fundamentals"
   b. *CLICK* in the "Virtual Flash Cards" column:
      4.1 Half, whole or enharmonic?
   c. *PRACTICE* your distances between notes.

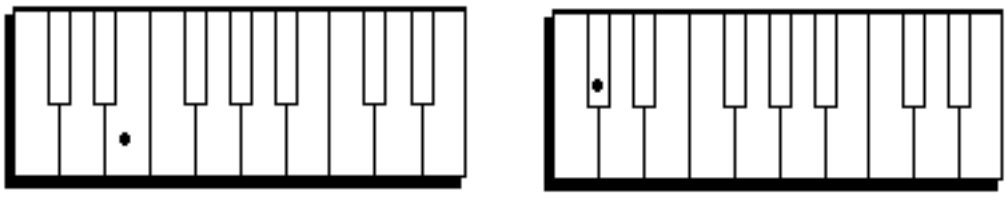
4.4 Mark the notes of major scales on the keyboard



• A key note is the most important note of a piece of music. Pieces almost always end on the key note.
• If eight notes of a piece are arranged in order without skipping lines or spaces and if the first note is the key note, then the notes form a scale.
• A major scale is eight note in ascending order which are separated from each other according to this pattern:

1	2	3	4	5	6	7	8
whole step	whole step	half step	whole step	whole step	whole step	half step	

DRAW dots on the following keyboards for each note of a major scale. The key note is given.



4.5 page 1 Mark scale degrees on a keyboard in the circle of fifths

TURN THE BOOK (OR THE NEXT PAGE) UPSIDE-DOWN!

- Each note of a scale is called a scale degree. Scale degree 1 is the key note.
- If scales are written clockwise on a circular keyboard or staff, and if the keynote of each scale begins on scale degree 5 of the previous scale, then the keynotes follow an order called the circle of fifths.

DRAW dots for the notes of every scale on the circular keyboard on the next page. The C major scale has already been marked where it says "START HERE." Notice that if the key note is C, then the major scale pattern

1 2 3 4 5 6 7 8
W W H W W W H

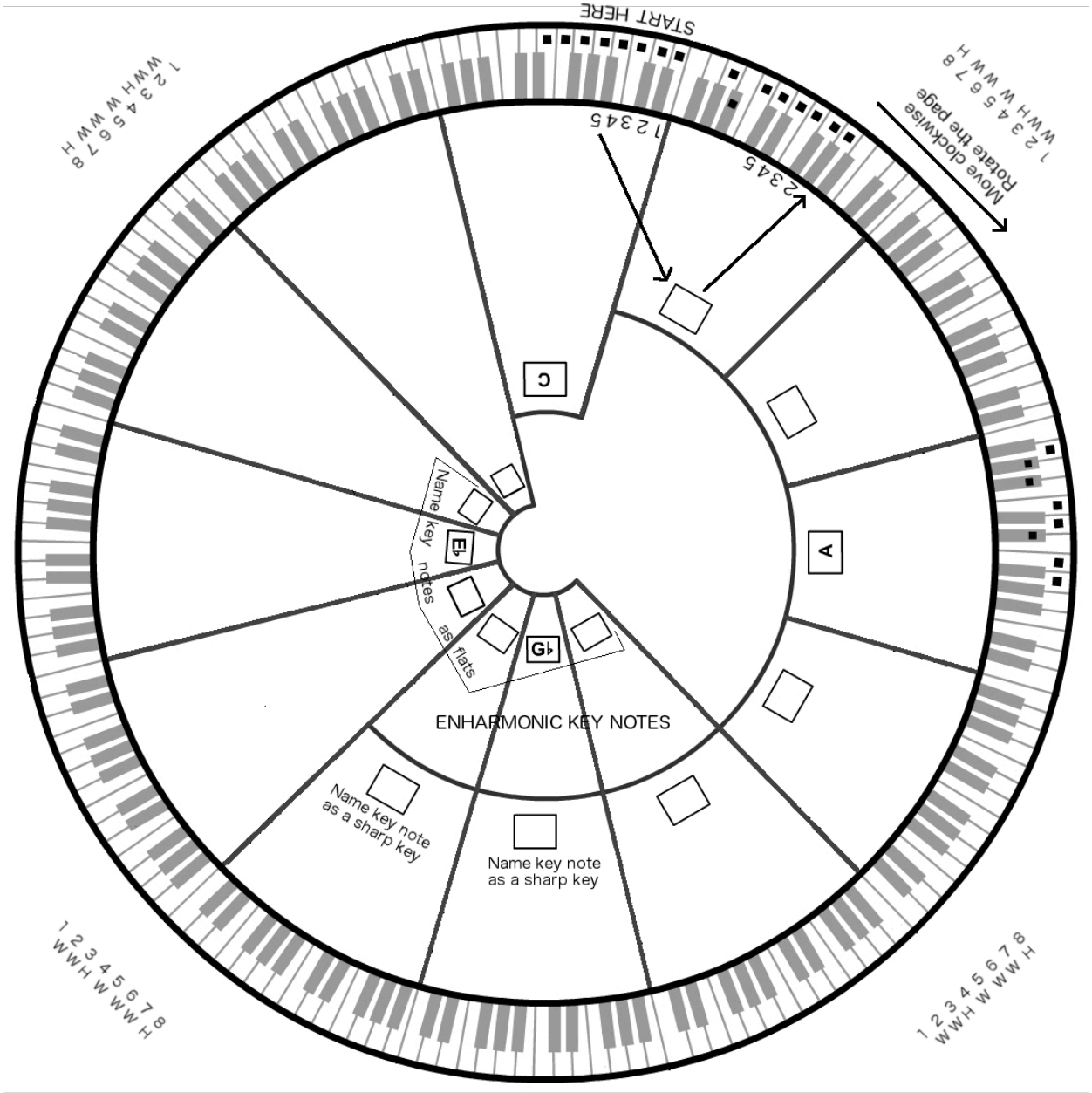
results in all white keys.

1. The key note of the next scale to the left (be sure you have turned the page upside-down) is scale degree 5 of the C major scale. *WRITE* the letter name for this note in the box in the next section to the left. Its scale has also already been filled in.
2. *COUNT* to the fifth note in the new scale, *WRITE* its letter name in the next box and *MARK* the notes of its scale with dots on the keyboard. *CHECK* to see that the first note is the same as the last.
3. *PROCEED* in this way until you have gone all the way around the circle and arrived at the C scale again. *ROTATE* the book as you work. When you reach sections of the circle with two boxes for key notes, *FILL IN* enharmonically equivalent key notes.

Incredibly all 12 different notes on the keyboard will have been used once and only once as key notes, and the original key note, C, will be the fifth note of the previous scale, In this way you will have completed a true circle—the circle of fifths.

4.5 page 2

TURN THE PAGE UPSIDE-DOWN!

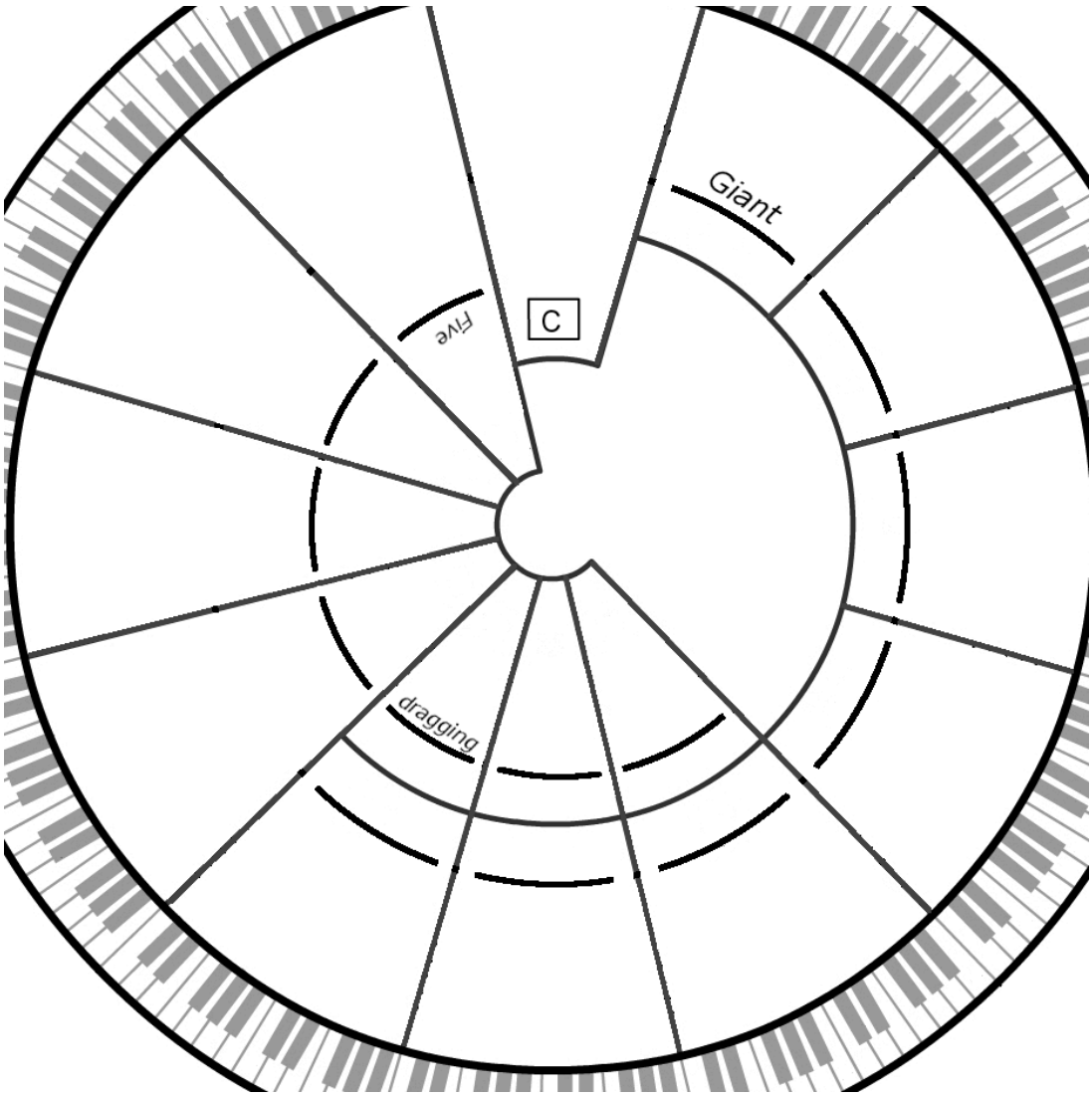


4.6 Write phrases to memorize keynotes in the circle of fifths

• A piece based on a certain scale and key note is said to be in a certain key. The terms "key" and "key note" are often interchangeable.
• Memorize the order of keys in the circle of fifths by remembering the two phrases below. The first letter of each word is the letter of a key.

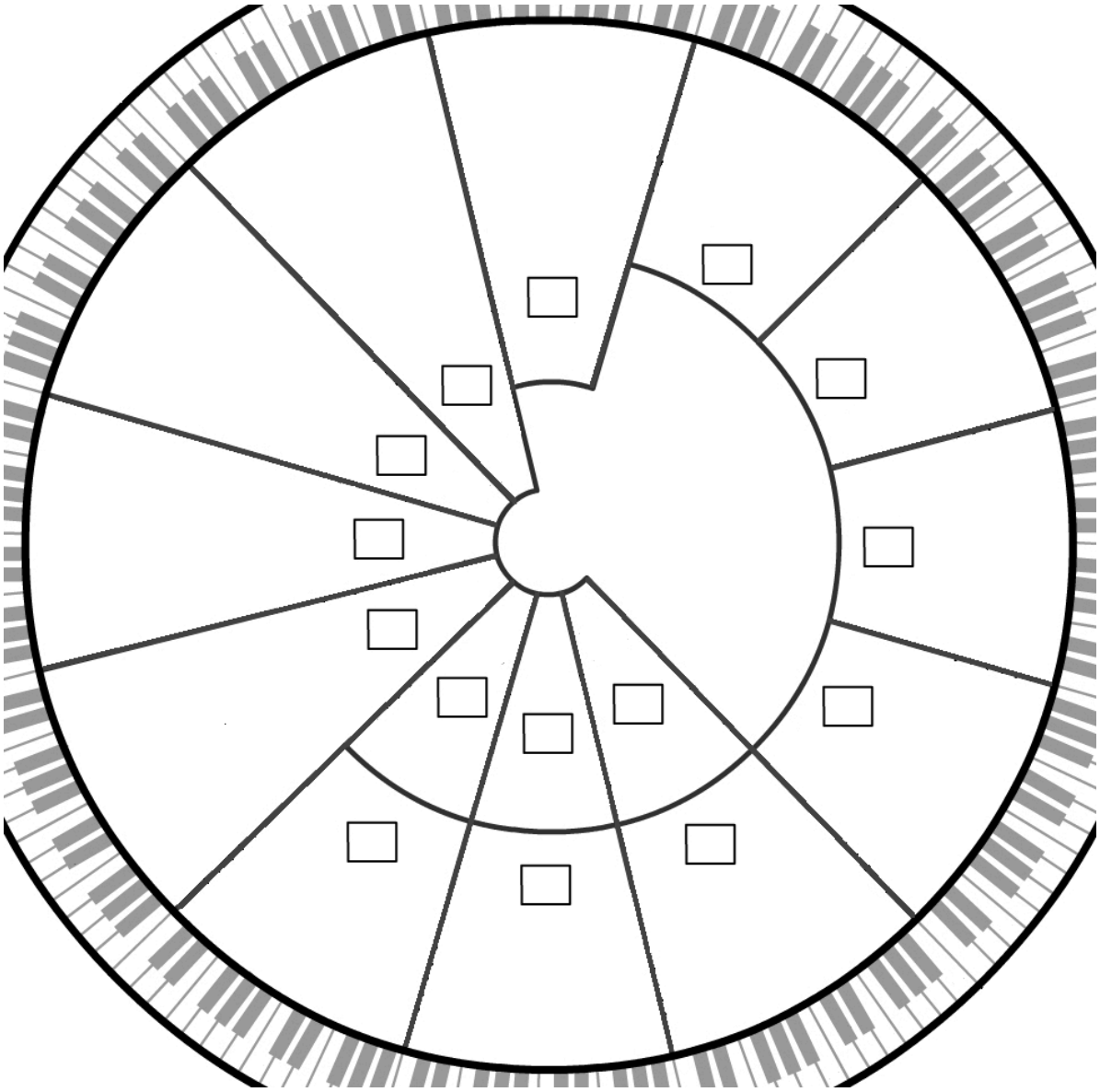
---

1. *COMPLETE* the phrases, "Giant Dogs Always Eat Before Furry Cats" and
"Five Big Elephants Are Dragging Garbage Cans"
which begin in the top right and left portions of the circle below.
DO NOT DRAW dots on the keyboard.

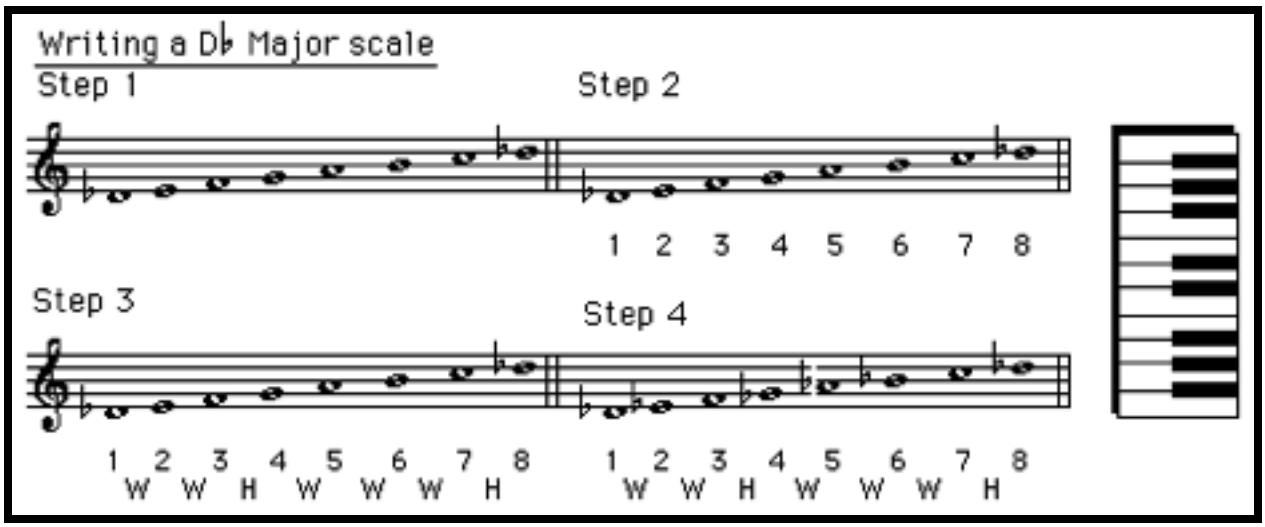


4.7 Fill in the keys, in order, on the circle of fifths

REWRITE the keys in the circle of fifths as you did on worksheet 4.5. This time use the phrases on worksheet 4.6 to help. Also remember that many keys have flats or sharps next to them.
DO NOT DRAW dots on the keyboard.



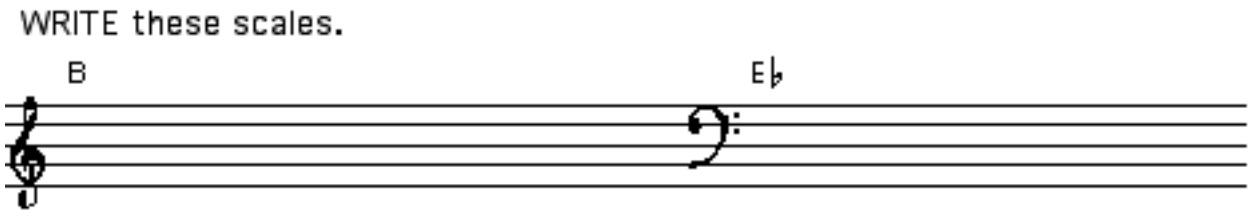
4.8 Write major scales on the staff



- Given a key note, be able to write its major scale on a staff.

---

1. a. *DRAW* eight note heads in ascending order beginning with the key note. Do not skip any lines or spaces. Leave enough room between notes to insert sharps or flats.
   b. *CHECK* that the first note has the same letter name as the last.
   c. If the key note has a sharp or flat, *DRAW* a sharp or flat to the left of the first and last notes.
2. *WRITE* the numbers 1 to 8 below the notes.
3. *WRITE* W's and H's between the numbers in the pattern of whole and half steps which you have learned for major scales.
4. *DRAW* a sharp or flat in front of each note, if needed, to correspond to the pattern of whole and half steps between the numbers.

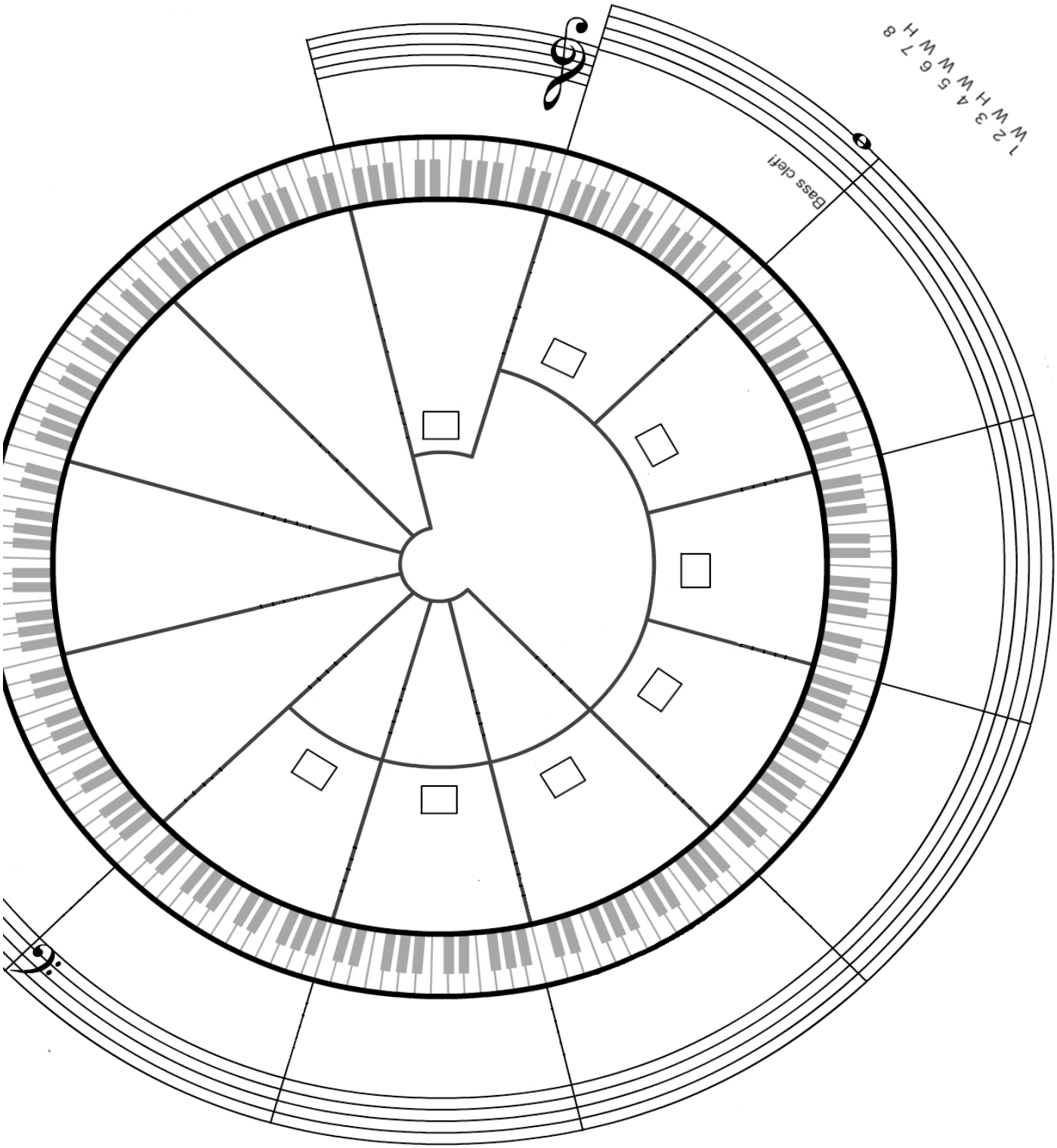


4.9 Write the sharp scales on a staff in the circle of fifths

- The scales on the right and bottom of the circle of fifths have sharps

---

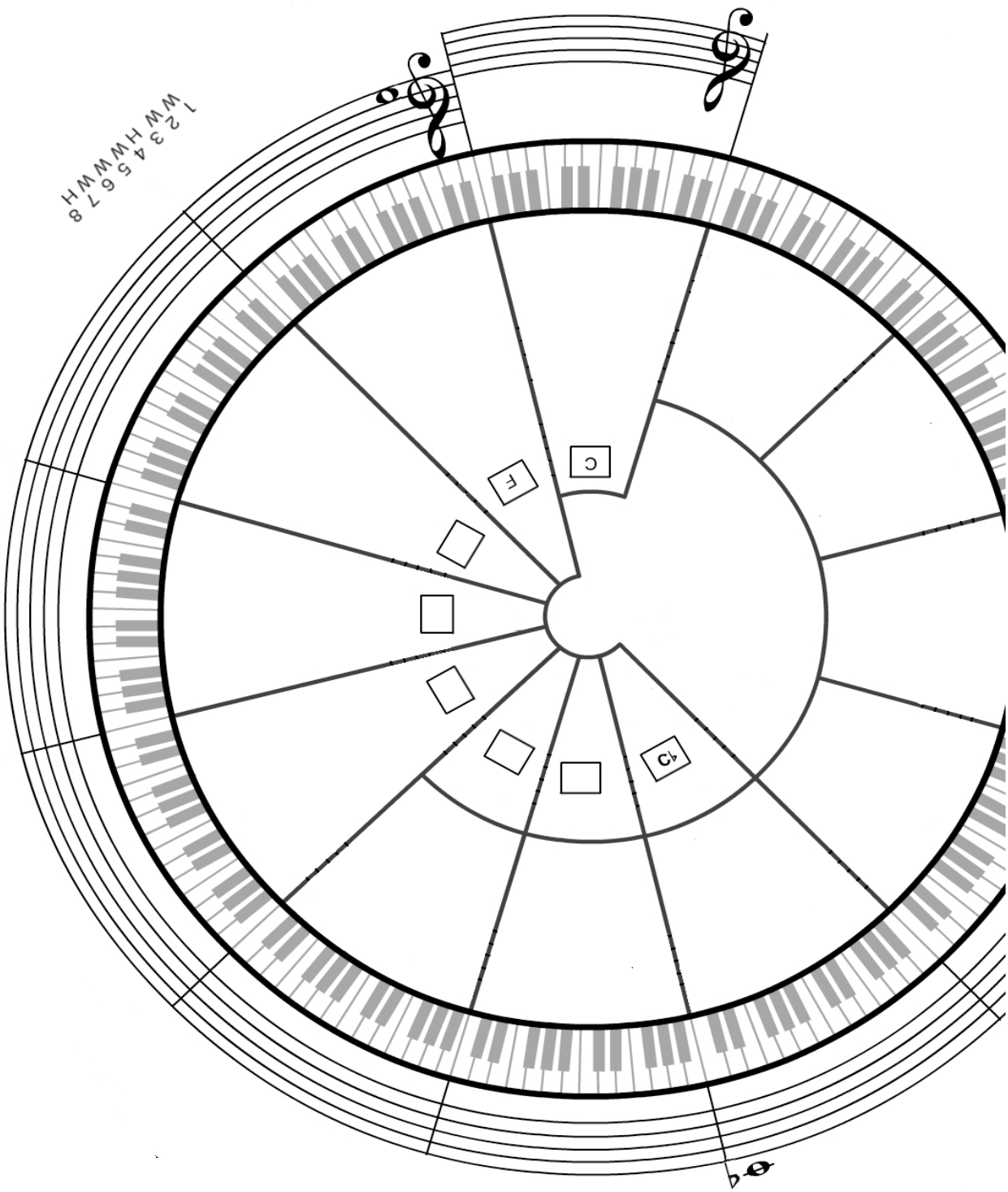
WRITE scales on the circular staff. Arrange scales according to keys on the circle of fifths. You may use dots on the keyboard. Notice the number of sharps in each scale.



4.10 Write the flat scales on a staff in the circle of fifths

- The scales on the left and bottom of the circle of fifths have flats.

WRITE the scales which have flats on the circular staff. Arrange scales according to keys on the circle of fifths. Notice how many flats are in each scale.



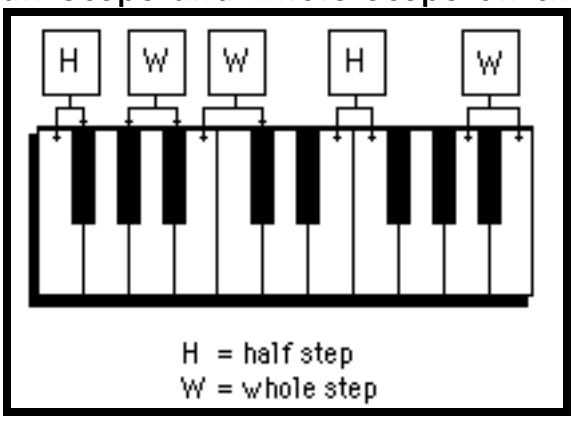
Chapter 4 Expanded. Major Scales and the Circle of Fifths

In this chapter you will:

1.Identify half steps and whole steps on the keyboard
2. Identify half steps and whole steps on the staff
3. Write half steps and whole steps on the staff
4. Mark the notes of major scales on the keyboard
5. Mark the notes of major scales on a keyboard in the circle of fifths
6. Write phrases to memorize keynotes in the circle of fifths
7. Fill in the keys, in order, on the circle of fifths
8. Write major scales on the staff
9. Write the sharp scales on a staff in the circle of fifths
10. Write the flat scales on a staff in the circle of fifths

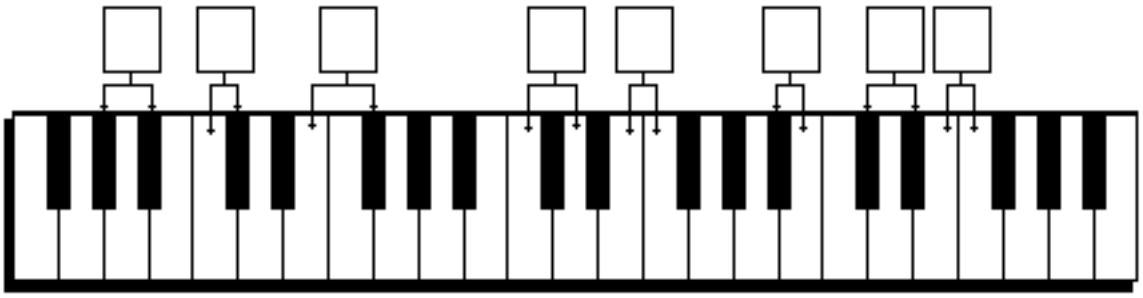
Note: Extra pages have been inserted in this expanded version of Chapter 4.

4Ex.1 Identify half steps and whole steps on the keyboard

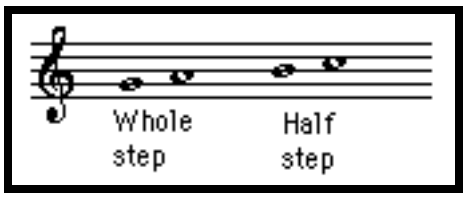


• A half step is the closest possible distance between two notes. There can be no notes in between two notes which are separated by a half step.
• A whole step is a distance between two notes such that there is one and only one other note between those two notes.

IDENTIFY the distances on the keyboard below as “H” for half step or “W” for whole step.



4Ex.2 Identify half steps and whole steps on the staff

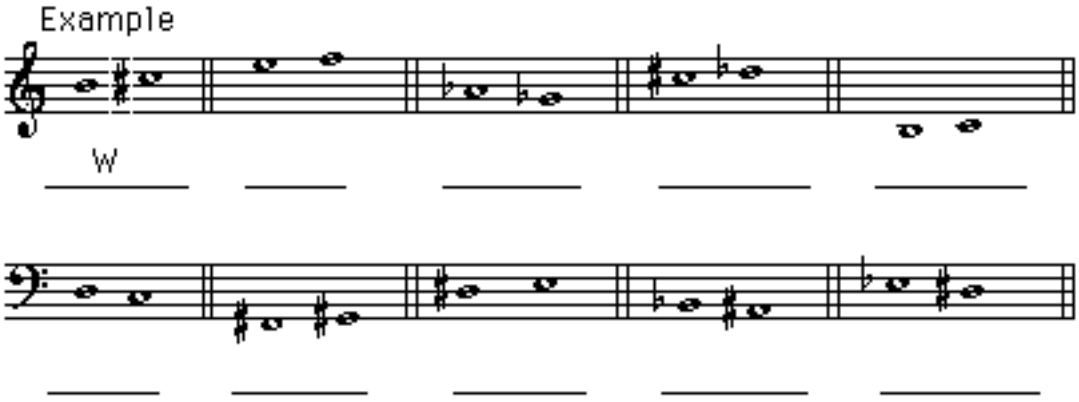


• The staff by itself does not show half step and whole step relationships. See the illustration above. To find half steps and whole steps on the staff, refer to the keyboard.

---

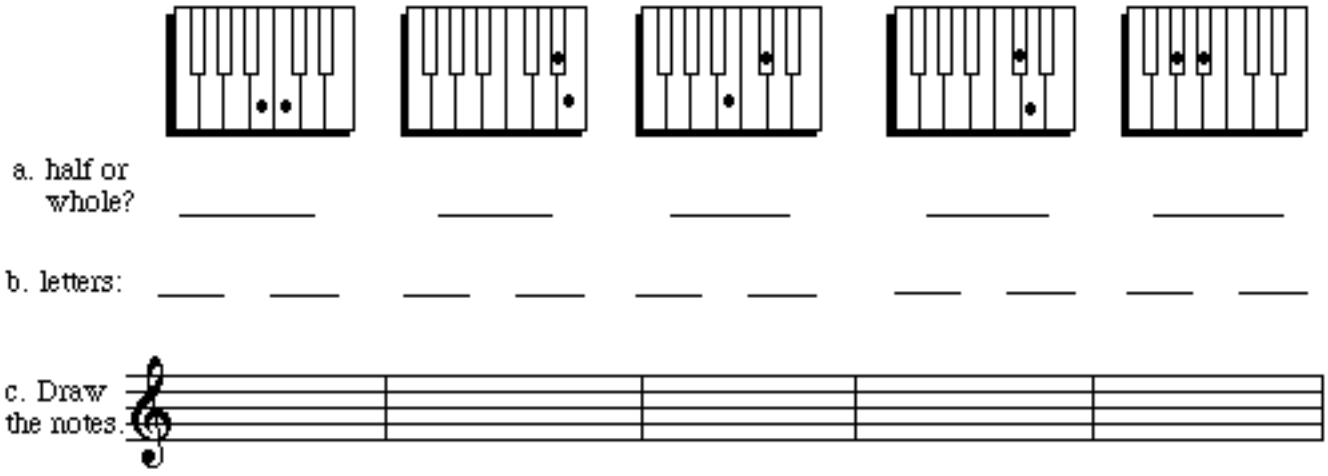
1. FILL IN the letter names for the white keys on this keyboard.

2. IDENTIFY the pairs of notes as separated by either a half step (H), or a whole step (W), or as being enharmonic equivalents (E).

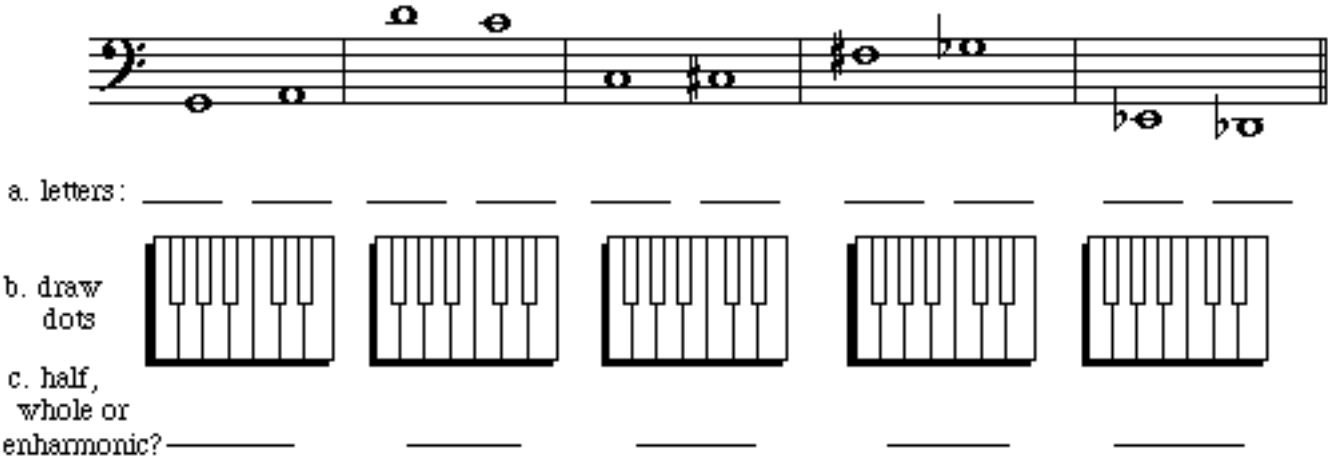


4Ex.3 Practice recognizing whole steps and half steps

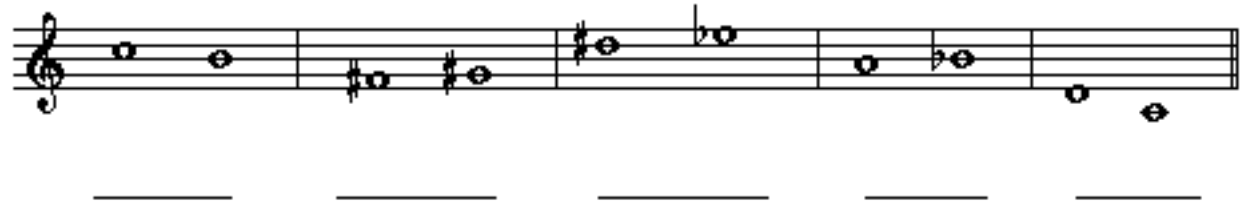
1. a. Label the pairs of notes on the keyboards as separated by half or whole steps.
   b. Write the letter names for both notes, including flats and sharps.
   c. Draw the notes on the staffs below.



2. a. Write the letters, including flats and sharps, for the pairs of notes on the staff. If the two notes refer to the same key, put two dots on that key.
   b. Draw dots on the keyboard for each note.
   c. Identify the pair of notes as enharmonics (E) or as separated by a half step (H), a whole step (W).



3. Identify the following pairs of notes as separated by whole steps (W), half steps (H) or as being enharmonics (E). You must refer to a keyboard.



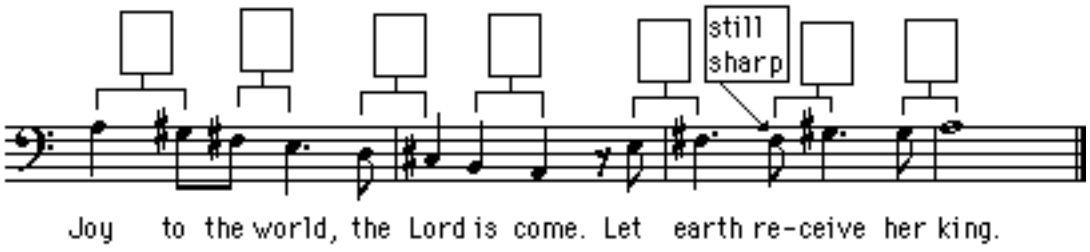
♪ Chapter 4, Expanded: Major Scales and the Circle of Fifths ♪

4Ex.4 Write half steps and whole steps on the staff

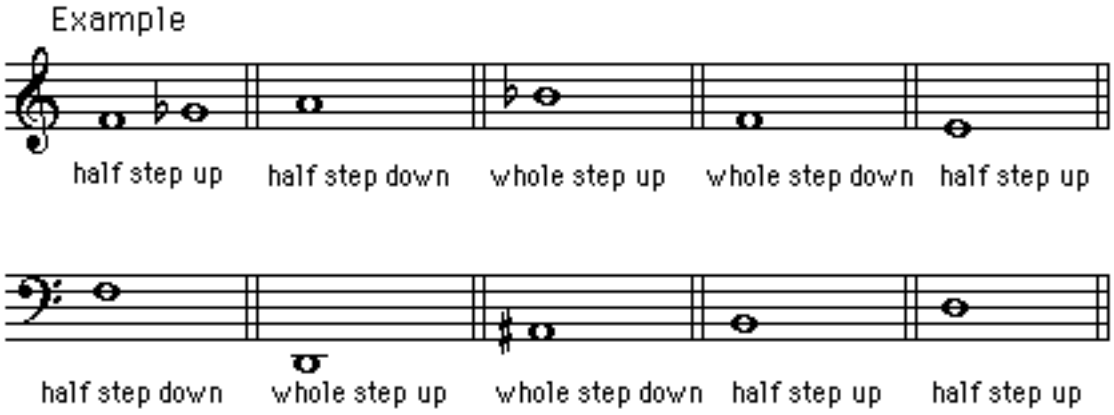
• A sharp or flat applies to the note which follows it AND <u>all the following notes of the same letter name in the measure</u>.

---

1. IDENTIFY the bracketed pairs of notes as separated by either a half step (H), or a whole step (W). Refer to the keyboard.

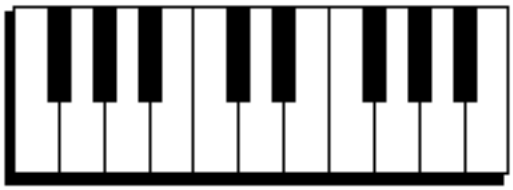


2. WRITE notes which are a half step up or down, or a whole step up or down from the given note.



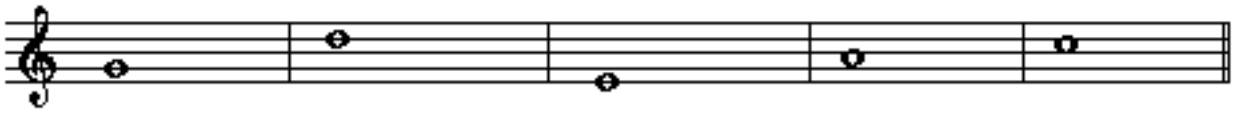
4Ex.5 Practice writing half and whole steps

1. Fill in letter names on the keyboard below.

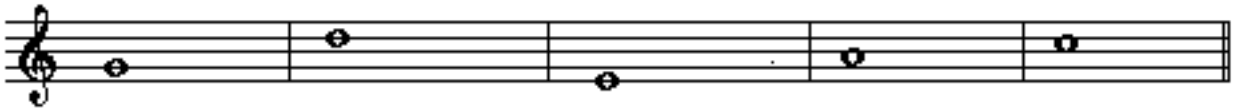


Refer to the keyboard to answer the following problems

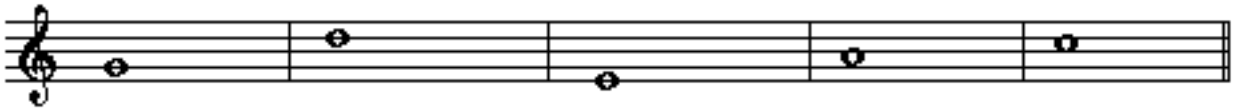
2. Write a note a half step up from the given note.



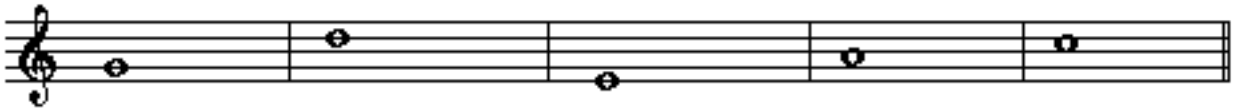
3. Write a note a half step down from the given note.



4. Write a note a whole step up from the given note.

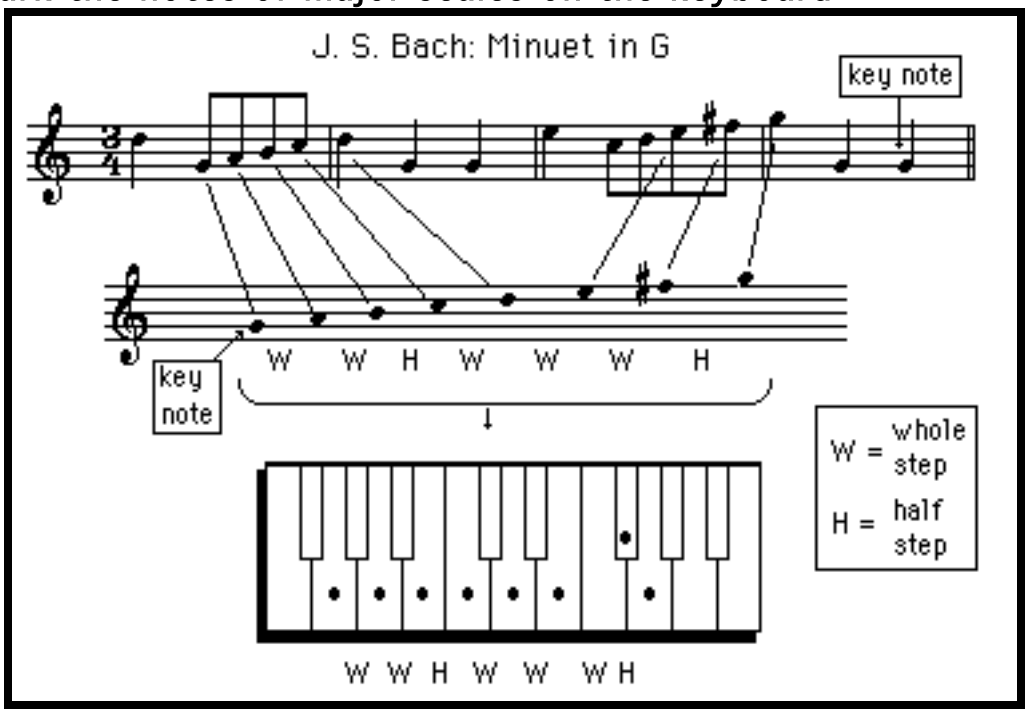


5. Write a note a whole step down from the given note.



♪ Chapter 4, Expanded: Major Scales and the Circle of Fifths ♪

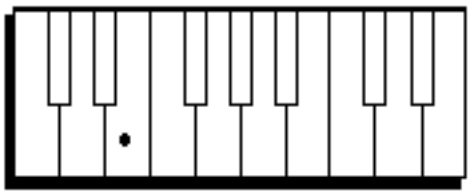
4Ex.6 Mark the notes of major scales on the keyboard

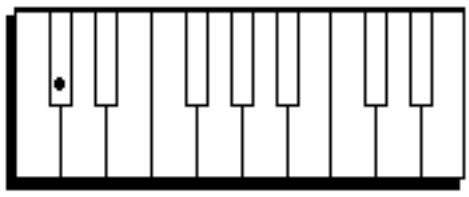


• A key note is the most important note of a piece of music. Pieces almost always end on the key note.
• If eight notes of a piece are arranged in order without skipping lines or spaces and if the first note is the key note, then the notes form a scale.
• A major scale is eight note in ascending order which are separated from each other according to this pattern:

1	2	3	4	5	6	7	8
whole step	whole step	half step	whole step	whole step	whole step	half step	

DRAW dots on the following keyboards for each note of a major scale. The key note is given.





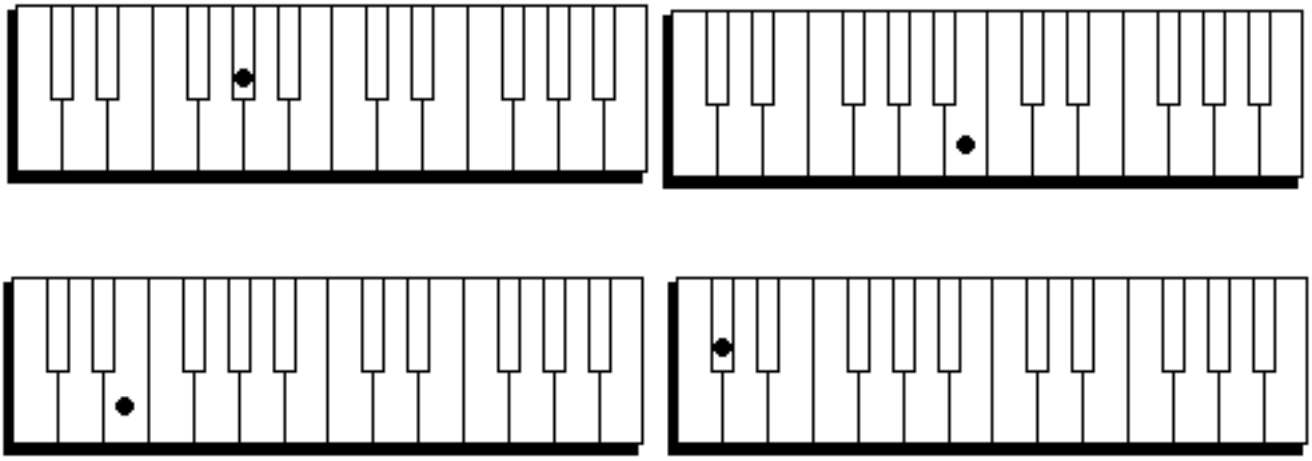
4Ex.7 Practice marking major scales on the keyboard

1. Write the sequence of whole steps (W) and half steps (H) between the numbers for the notes of the scale:

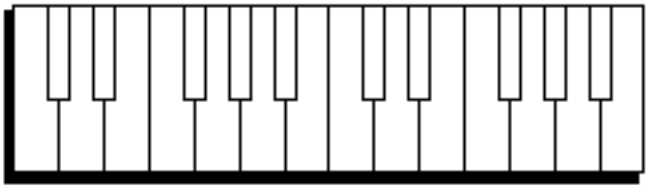
1 2 3 4 5 6 7 8

_____ _____ _____ _____ _____ _____ _____

2. Write dots on the keys for the notes of scales. The given dot is the first note.



3. Write a scale beginning with the note A.



♪ Chapter 4, Expanded: Major Scales and the Circle of Fifths ♪

4Ex.8, page 1 Mark scale degrees on a keyboard in the circle of fifths

TURN THE BOOK (OR PAGE 7) UPSIDE-DOWN!

- Each note of a scale is called a scale degree. Scale degree 1 is the key note.
- If scales are written clockwise on a circular keyboard or staff, and if the keynote of each scale begins on scale degree 5 of the previous scale, then the keynotes follow an order called the circle of fifths.

DRAW dots for the notes of every scale on the circular keyboard on the next page. The C major scale has already been marked where it says "START HERE." Notice that if the key note is C, then the major scale pattern

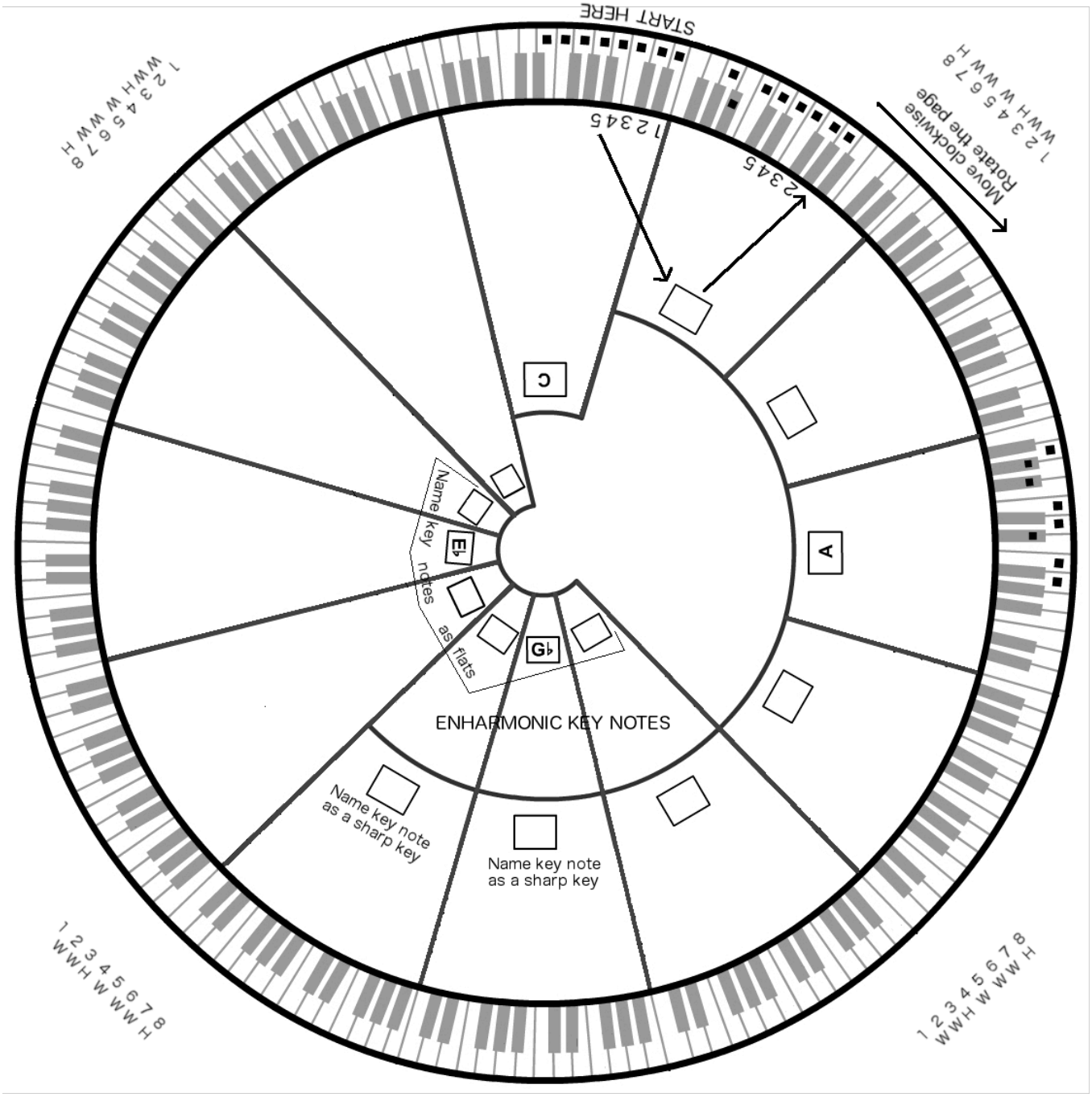
1 2 3 4 5 6 7 8
W W H W W W H

results in all white keys.

1. The key note of the next scale to the left (be sure you have turned the page upside-down) is scale degree 5 of the C major scale. WRITE the letter name for this note in the box in the next section to the left. Its scale has also already been filled in.
2. COUNT to the fifth note in the new scale, WRITE its letter name in the next box and MARK its scale with dots on the keyboard. CHECK to see that the first note is the same as the last.
3. PROCEED in this way until you have gone all the way around the circle and arrived at the C scale again. ROTATE the book as you work. When you reach sections of the circle with two boxes for key notes, FILL IN enharmonically equivalent key notes.

Incredibly all 12 different notes on the keyboard will have been used once and only once as key notes, and the original key note, C, will be the fifth note of the previous scale, In this way you will have completed a true circle—the circle of fifths.

TURN THE PAGE UPSIDE -DOWN!



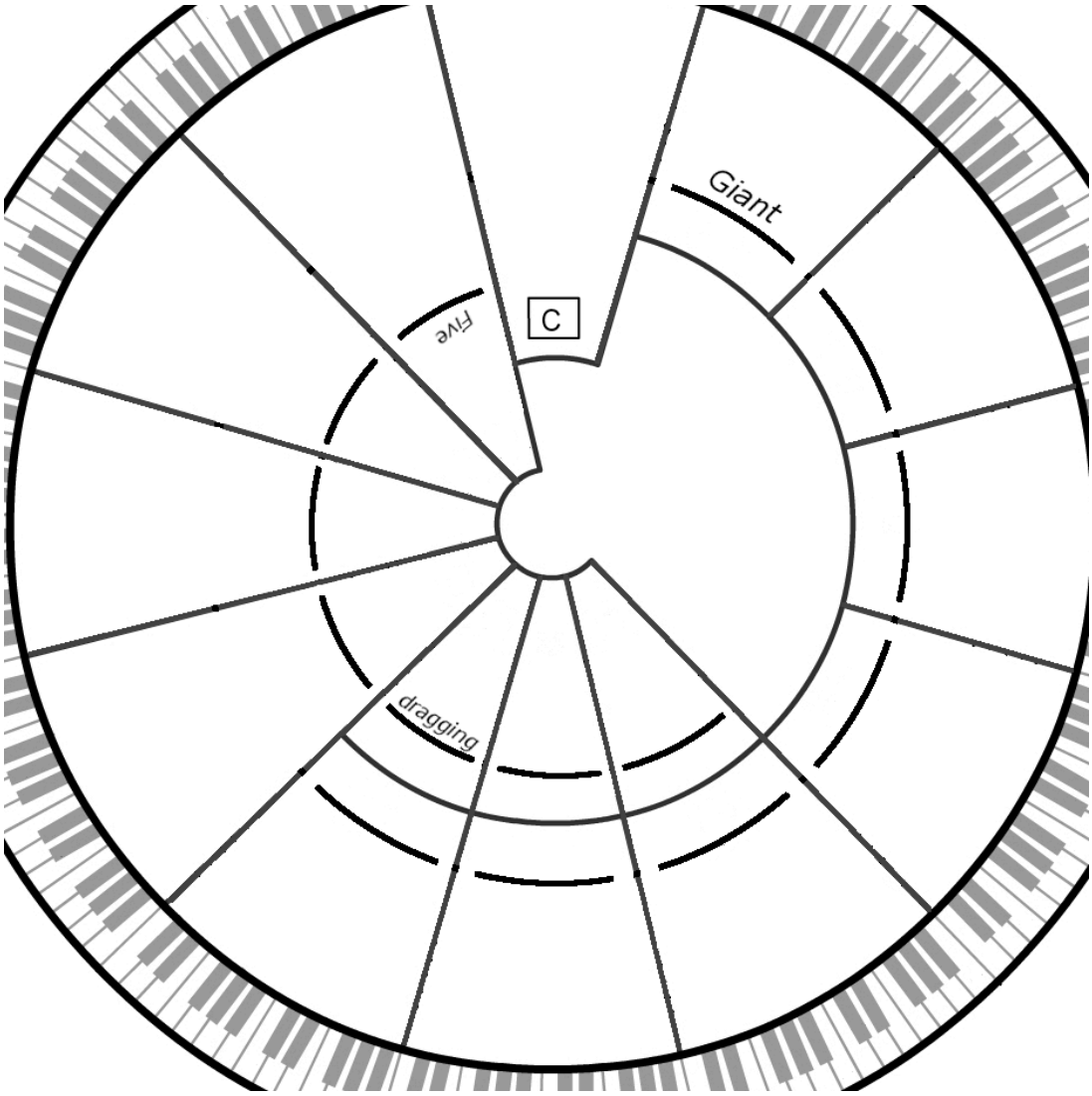
♪ Chapter 4, Expanded: Major Scales and the Circle of Fifths ♪

4Ex.9 Write phrases to memorize keynotes in the circle of fifths

• A piece based on a certain scale and key note is said to be in a certain key. The terms "key" and "key note" are often interchangeable.
• Memorize the order of keys in the circle of fifths by remembering the two phrases below. The first letter of each word is the letter of a key.

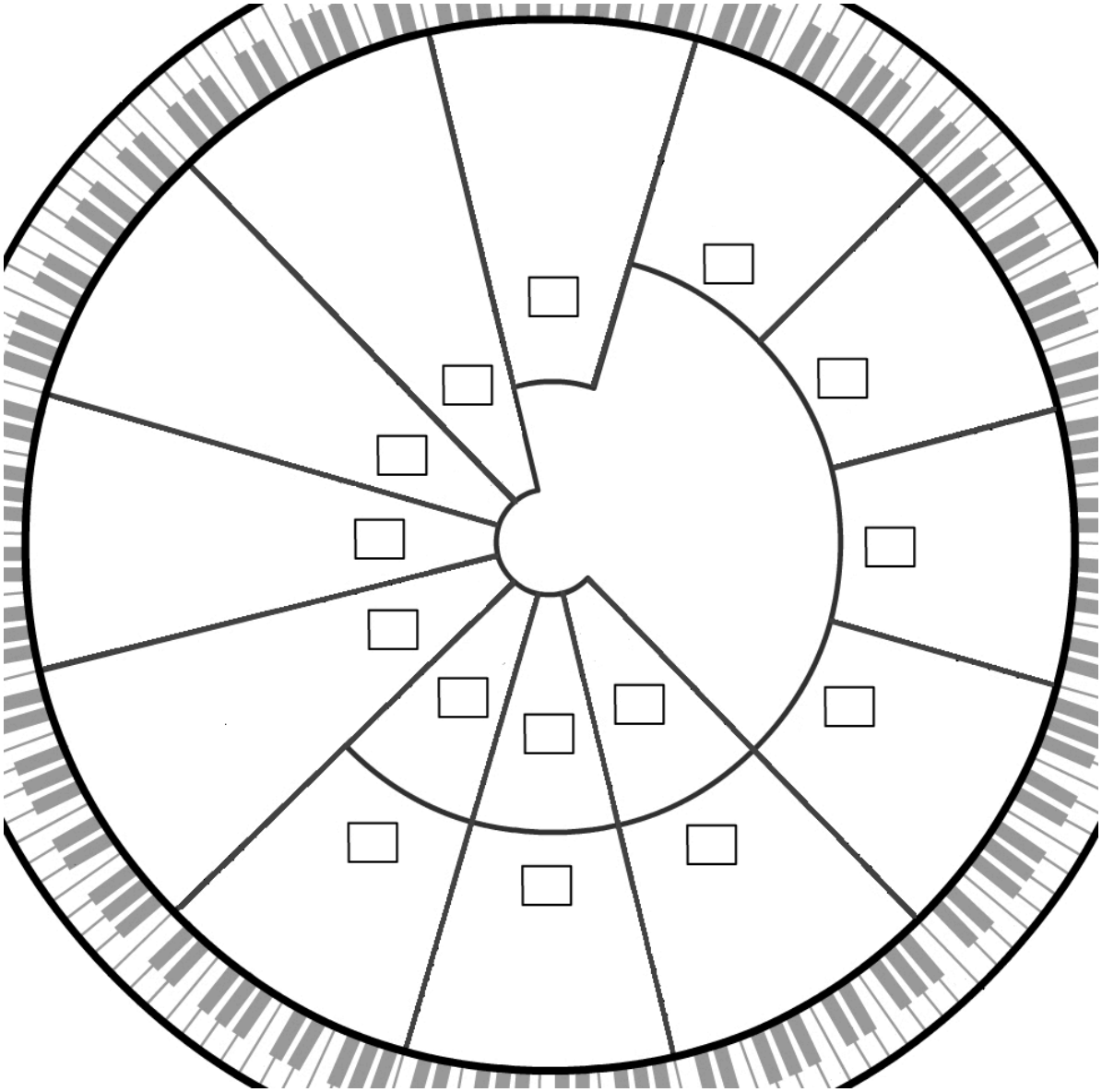
---

1. COMPLETE the phrases, "Giant Dogs Always Eat Before Furry Cats" and
"Five Big Elephants Are Dragging Garbage Cans"
which begin in the top right and left portions of the circle below.
DO NOT DRAW dots on the circular keyboard.



4Ex.10 Fill in the keys, in order, on the circle of fifths

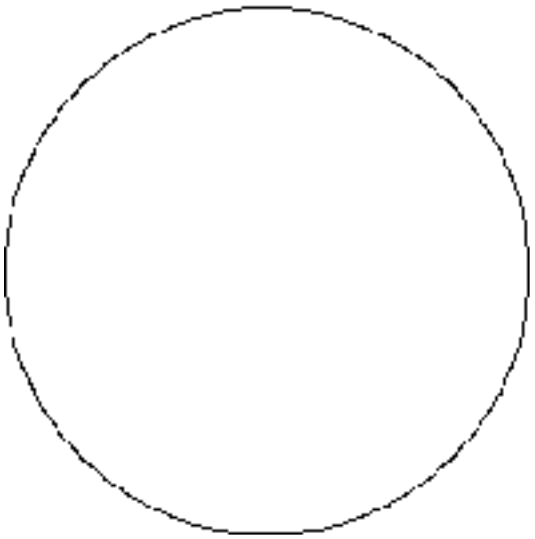
REWRITE the keys in the circle of fifths as you did on worksheet 4.5. This time use the phrases on worksheet 4.6 to help. Also remember that many keys have flats or sharps next to them.

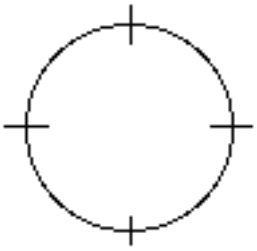


♪ Chapter 4, Expanded: Major Scales and the Circle of Fifths ♪

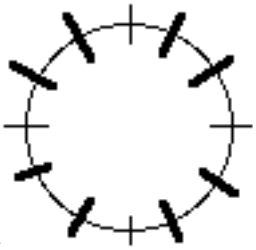
4Ex.11 Make your own circle of fifths

Draw a circle of fifths on the circle below. See instructions at the bottom of the page.

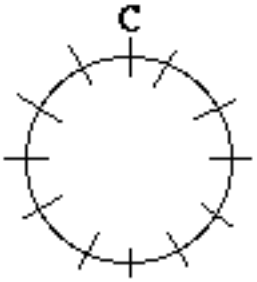




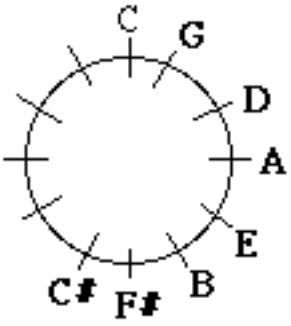
Step 1



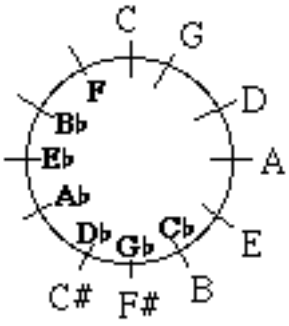
Step 2



Step 3



Step 4



Step 5

Instructions. Imagine the circle is a clock and refer to the above drawings.

1. Draw slashes on the circle at 12:00, 3:00, 6:00 and 9:00.
2. Put two more slashes evenly spaced between each of the slashes you have just drawn.
3. Write a "C" above the slash at the top--at 12:00.
4. Write the sharp keys around the outside of the circle. G is at 1:00 and C# is at 7:00.
5. Write the flat keys inside the circle. F is at 11:00 and Cb is at 5:00.

4Ex.12 Review your work to here

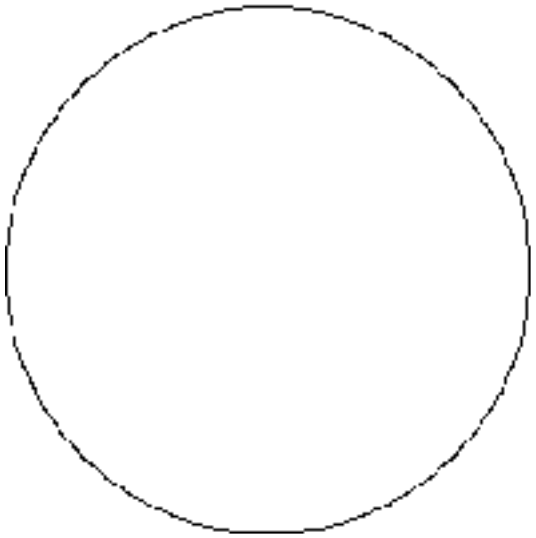
1. Write the saying for memorizing the sharp keys on the circle of fifths.

_____

2. Write the saying for memorizing the flat keys on the circle of fifths.

_____

3. Draw a circle of fifths.



Review

1. Write the saying for memorizing the lines on treble clef.

_____

2. Write the word for memorizing the spaces on treble clef

_____

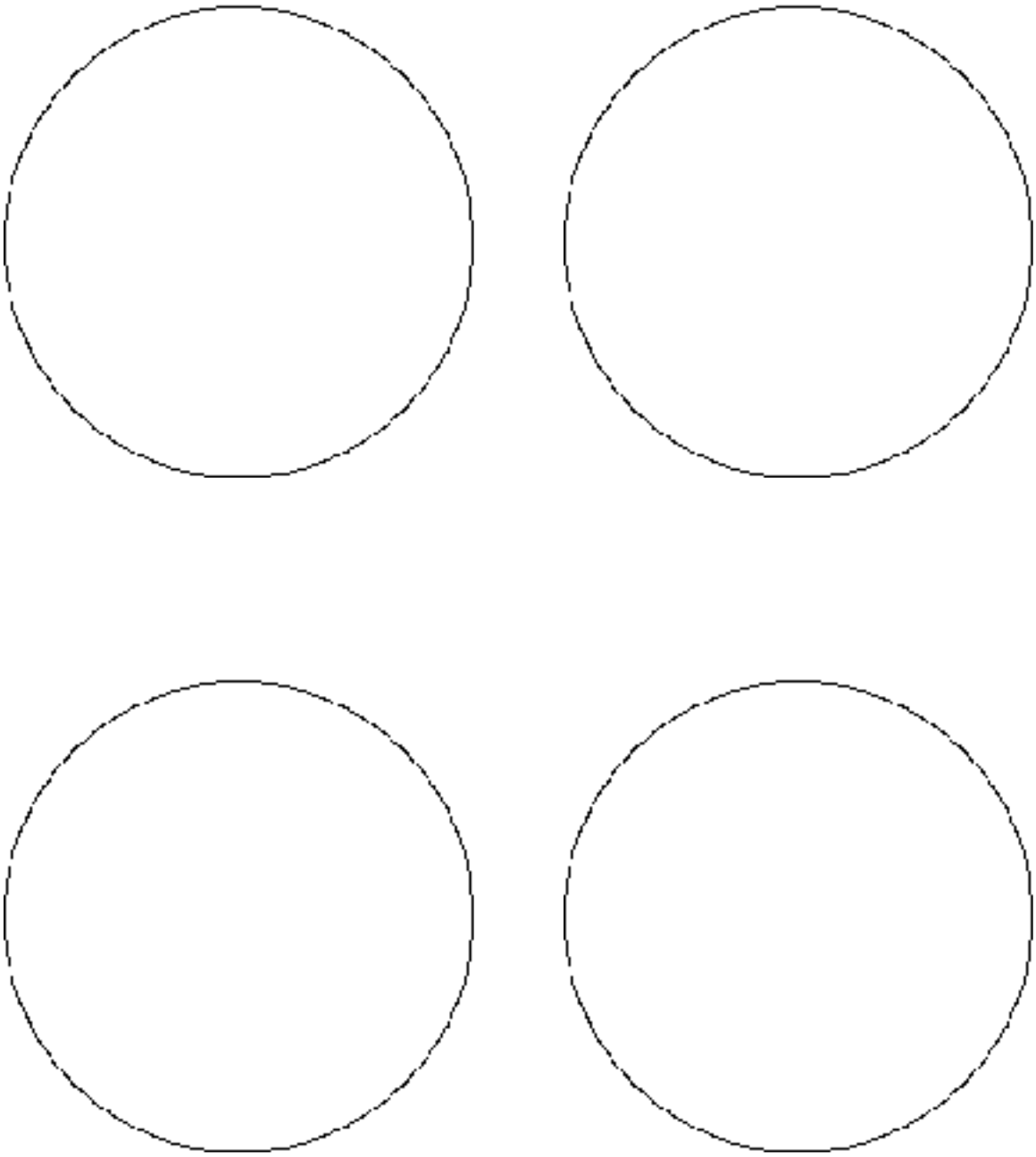
3. Write the saying for memorizing the lines on bass clef

_____

4. Write the saying for memorizing the spaces on bass clef

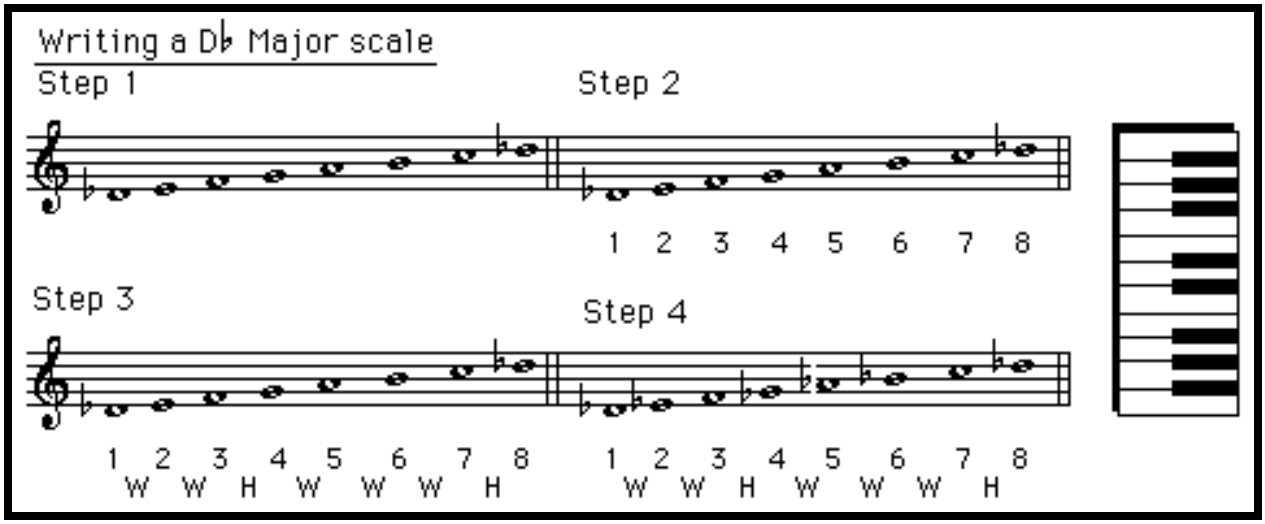
_____

4Ex.13 Practice drawing circles of fifths



♪ Chapter 4, Expanded: Major Scales and the Circle of Fifths ♪

4Ex.14 Write major scales on the staff

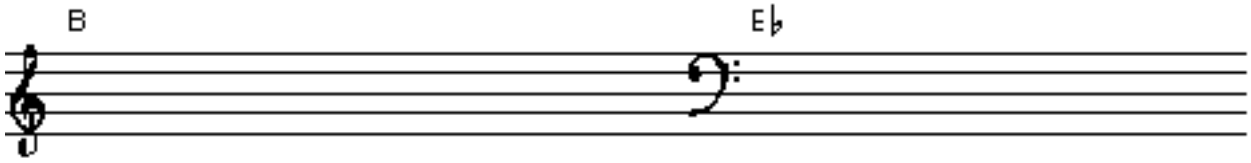


- Given a key note, be able to write its major scale on a staff.

---

1. a. DRAW eight note heads in ascending order beginning with the key note. Do not skip any lines or spaces. Leave enough room between notes to insert sharps or flats.
   b. CHECK that the first note has the same letter name as the last.
   c. If the key note has a sharp or flat, DRAW a sharp or flat in front of the first and last notes.
2. WRITE the numbers 1 to 8 below the notes.
3. WRITE W's and H's between the numbers in the pattern of whole and half steps which you have learned for major scales.
4. DRAW a sharp or flat in front of each note, if needed, to correspond to the pattern of whole and half steps between the numbers.

WRITE these scales.

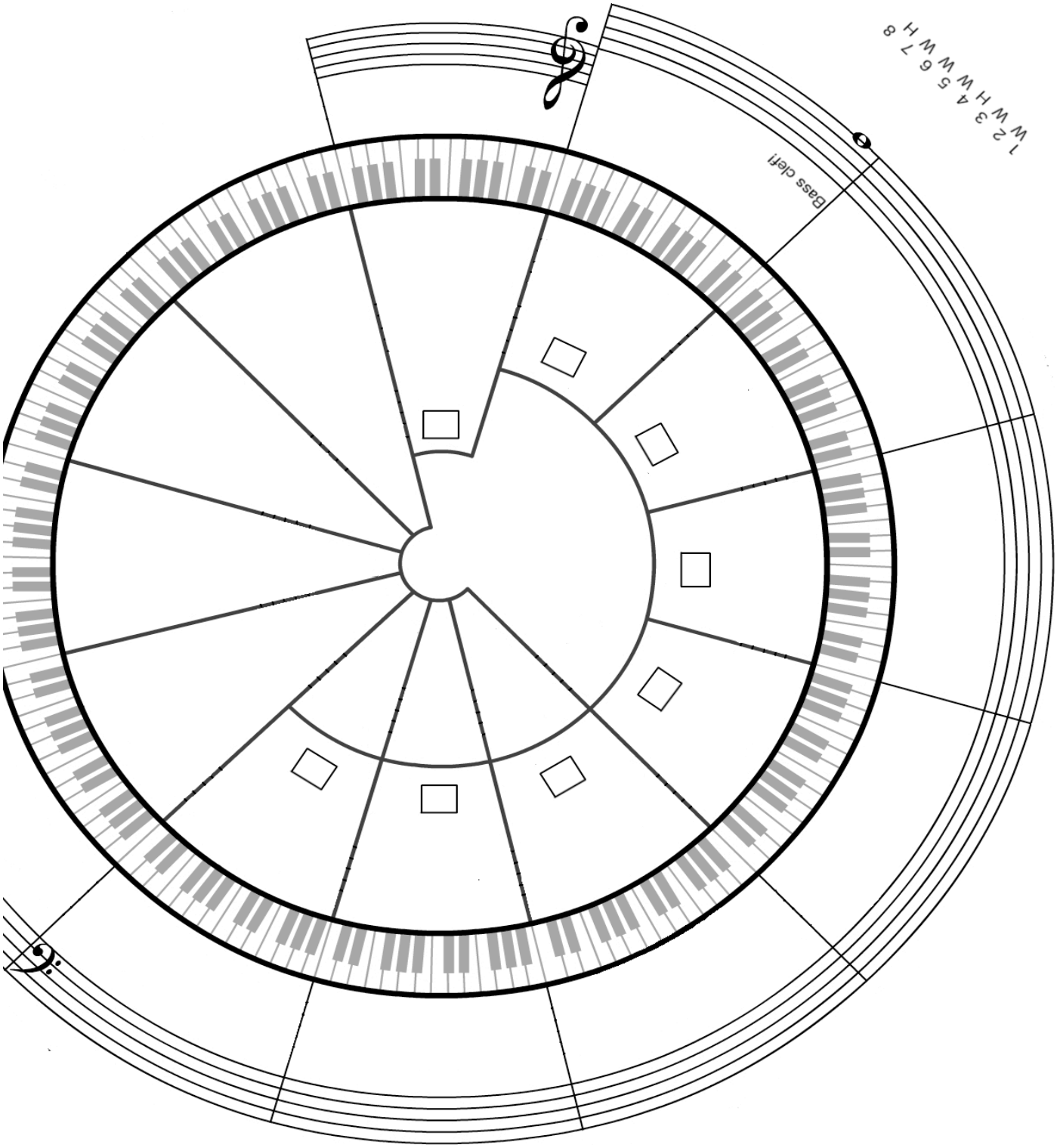


♪ Chapter 4, Expanded: Major Scales and the Circle of Fifths ♪

4Ex.15 Write the sharp scales on a staff in the circle of fifths

- The scales on the <u>right</u> and bottom of the circle of fifths have <u>sharps</u>

WRITE scales on the circular staff. Arrange scales according to keys on the circle of fifths. You may use dots on the keyboard. Notice the number of sharps in each scale.

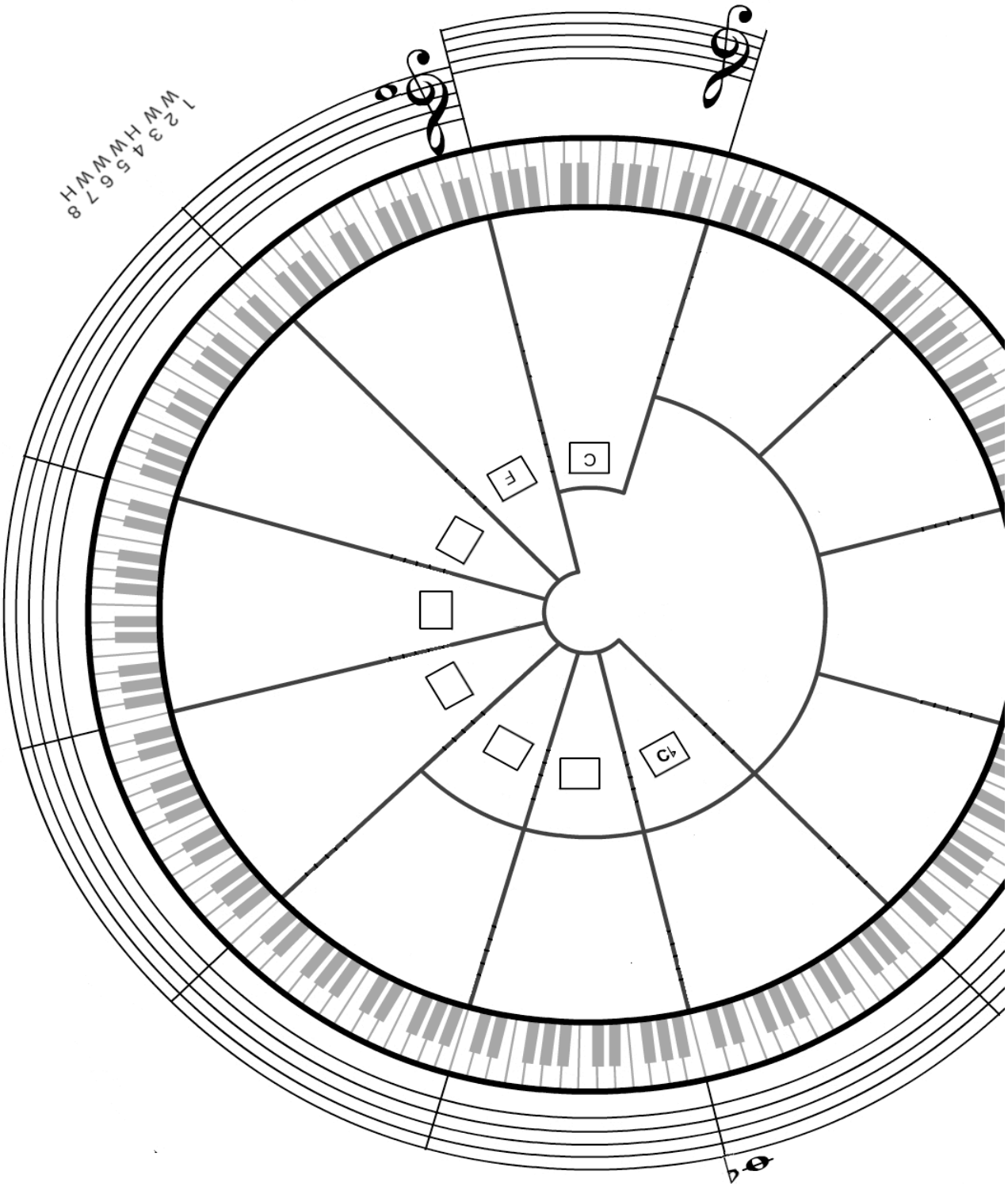


Chapter 4, Expanded: Major Scales and the Circle of Fifths

4Ex.16 Write the flat scales on a staff in the circle of fifths

- The scales on the left and bottom of the circle of fifths have flats.

WRITE the scales which have flats on the circular staff. Arrange scales according to keys on the circle of fifths. Notice how many flats are in each scale.



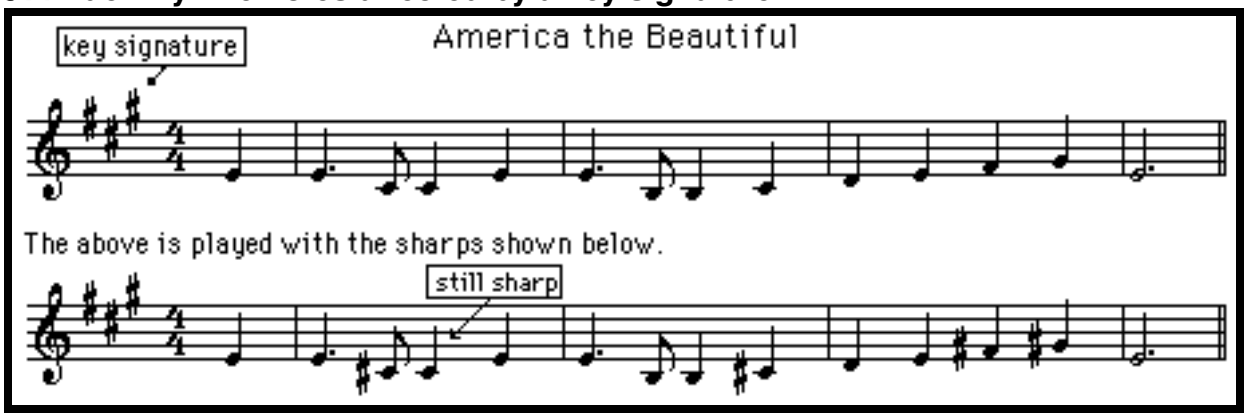
Chapter 5. Key Signatures

In this chapter you will:

1. Identify the notes affected by a key signature	6. Relate the order of sharps to the order of keys
2. Number the sharps and flats in each key	7. Relate the order of flats to the order of keys
3. Name the key given its key signature	8. Write key signatures in treble clef
4. Use some tricks to find the key	9. Write key signatures in bass clef
5. Write scales given their key signatures	10. Write scales given their key note

Date:

5.1 Identify the notes affected by a key signature



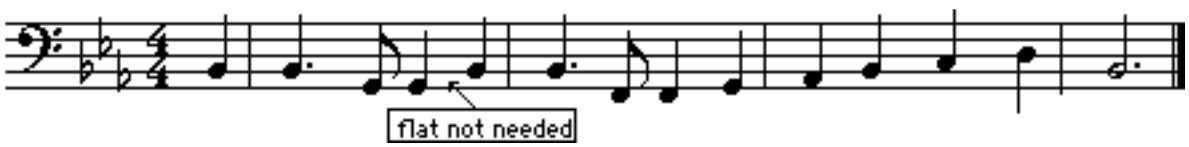
•Sharps and flats are not usually written next to every note which is played sharp or flat. Instead these sharps and flats are indicated by a key signature. A key signature is a group of sharps or flats at the beginning of a staff which indicates the notes which are to be played sharp or flat in the following music. See the illustration above.

• The sharps or flats in a key signature are the same as those of a scale.

• Sharps and flats in the key signature apply to all notes with the same letter name regardless of octave.

• Recall that in the second measure of the bottom staff above, the second middle C is still sharp. See worksheet 4.3.

DRAW flats to the left of notes which are to be played flat according to the key signature.

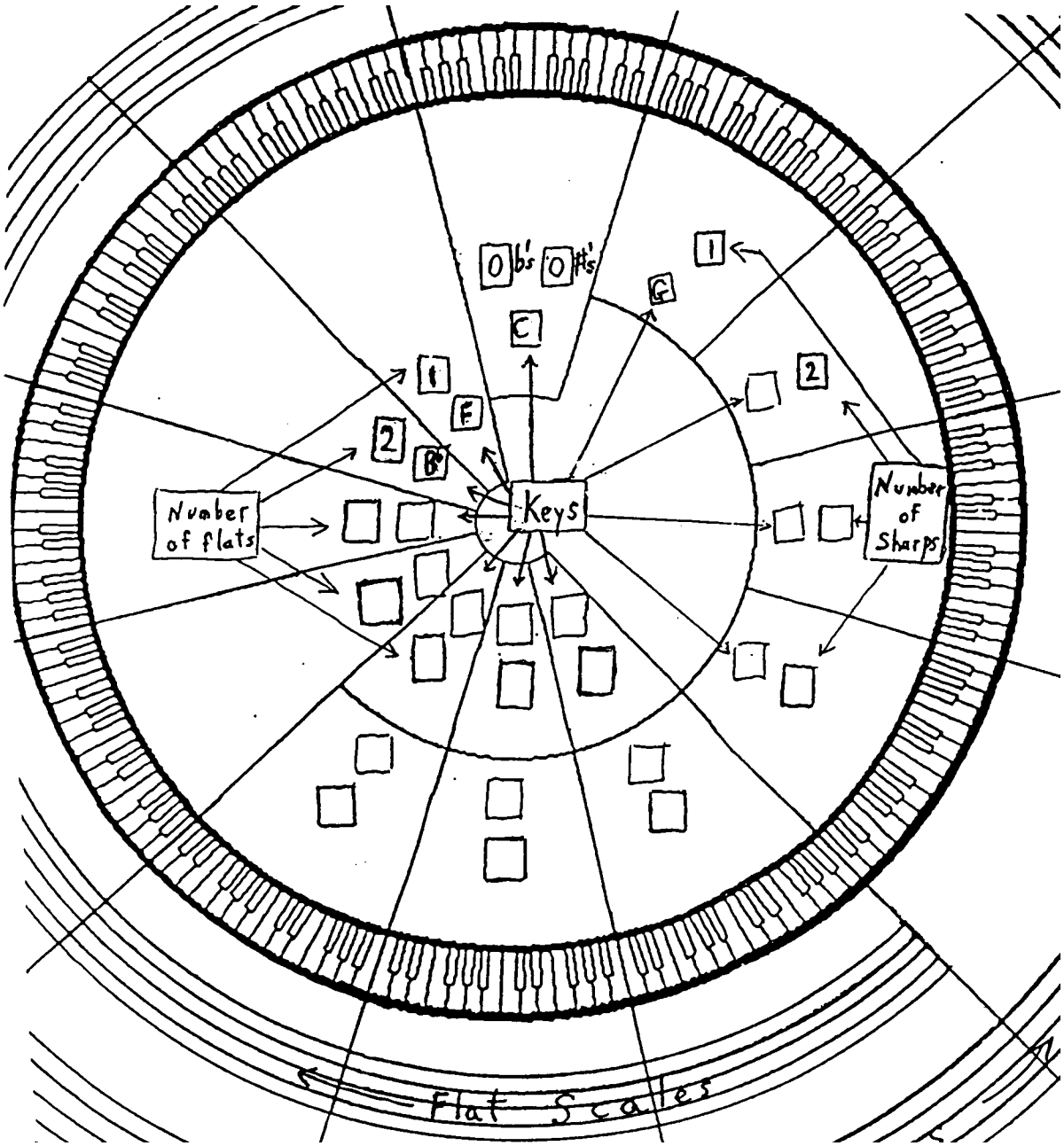


Date:

5.2 Number the sharps and flats in each key

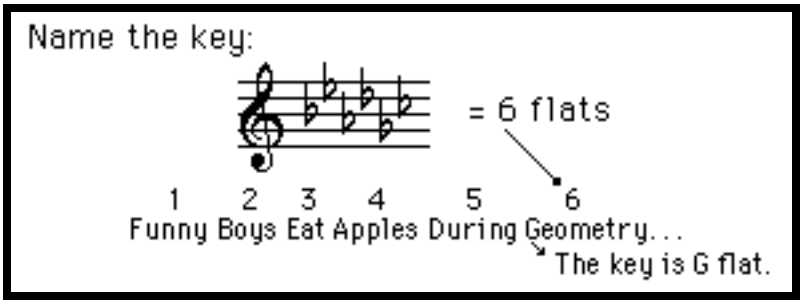
- The number of sharps in a scale increases by one proceeding clockwise around the circle of fifths, and
- The number of flats in a scale increases by one proceeding counter-clockwise around the circle of fifths. See worksheets 4.9 and 4.10.

FILL IN the keys and the number of sharps or flats for each key in the boxes below.



Date:

5.3 Name the key given its key signature



•To name a key given its key signature:

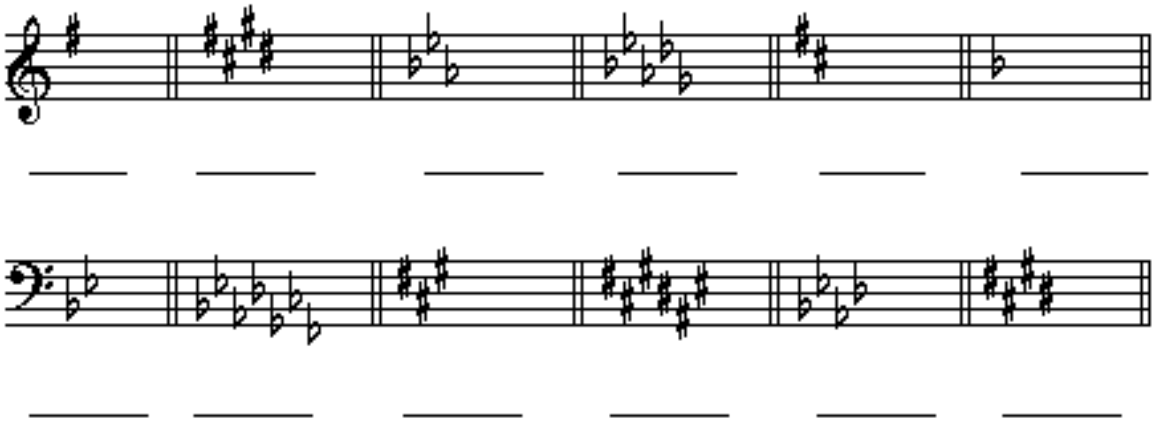
a. COUNT the number of flats or sharps in the key signature.

b. SAY the phrase "Five Big Elephants ..." for flats, or "Giant Dogs Always ..." for sharps while counting the words on your fingers.

c. STOP when you have said as many words as there are sharps or flats in the key signature. The last word gives the key.

---

1. *NAME* the keys for the following key signatures.



2. For the following, say one of the two phrases while counting on your fingers until you have reached the appropriate word.

a. How many sharps are there in the key of B? _____

b. How many flats are there in the key of G ? _____

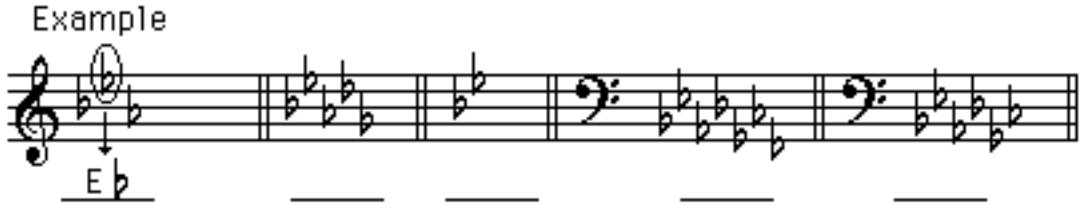
Date:

5.4 Use some tricks to find the key

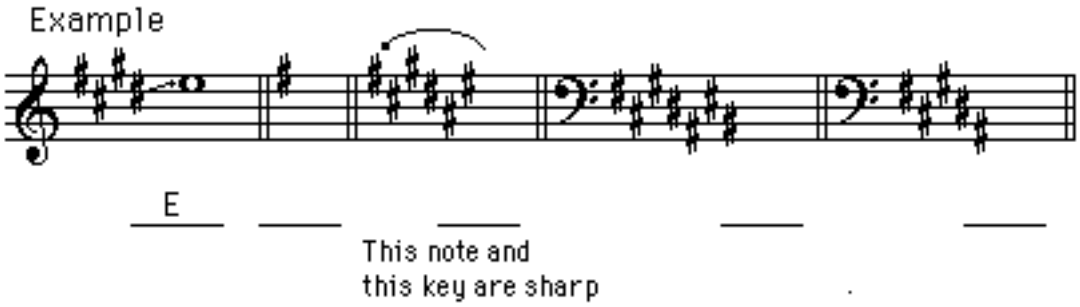
- For flat key signatures the key is the next-to-the-last flat.
- For sharp key signatures the key is a half step above the last sharp.

---

1. *CIRCLE* the next to the last flat and NAME the key.



2. *WRITE* the note above the last sharp and NAME the key.



3. *GO ONLINE* to www.gmajormusictheory.org
   a. *CLICK* "Music Fundamentals"
   b. *CLICK* in the "Virtual Flash Cards" column:
      5.3 Key Signatures, All Major Keys
   c. *PRACTICE* the key signatures you have learned.

Date:

5.5 Write scales given their key signatures

• When the key signature is given, there is no need to figure out half steps and whole steps to write scales.

WRITE these scales

a. *FIND* the key note and WRITE it on the staff with its sharp or flat if needed.

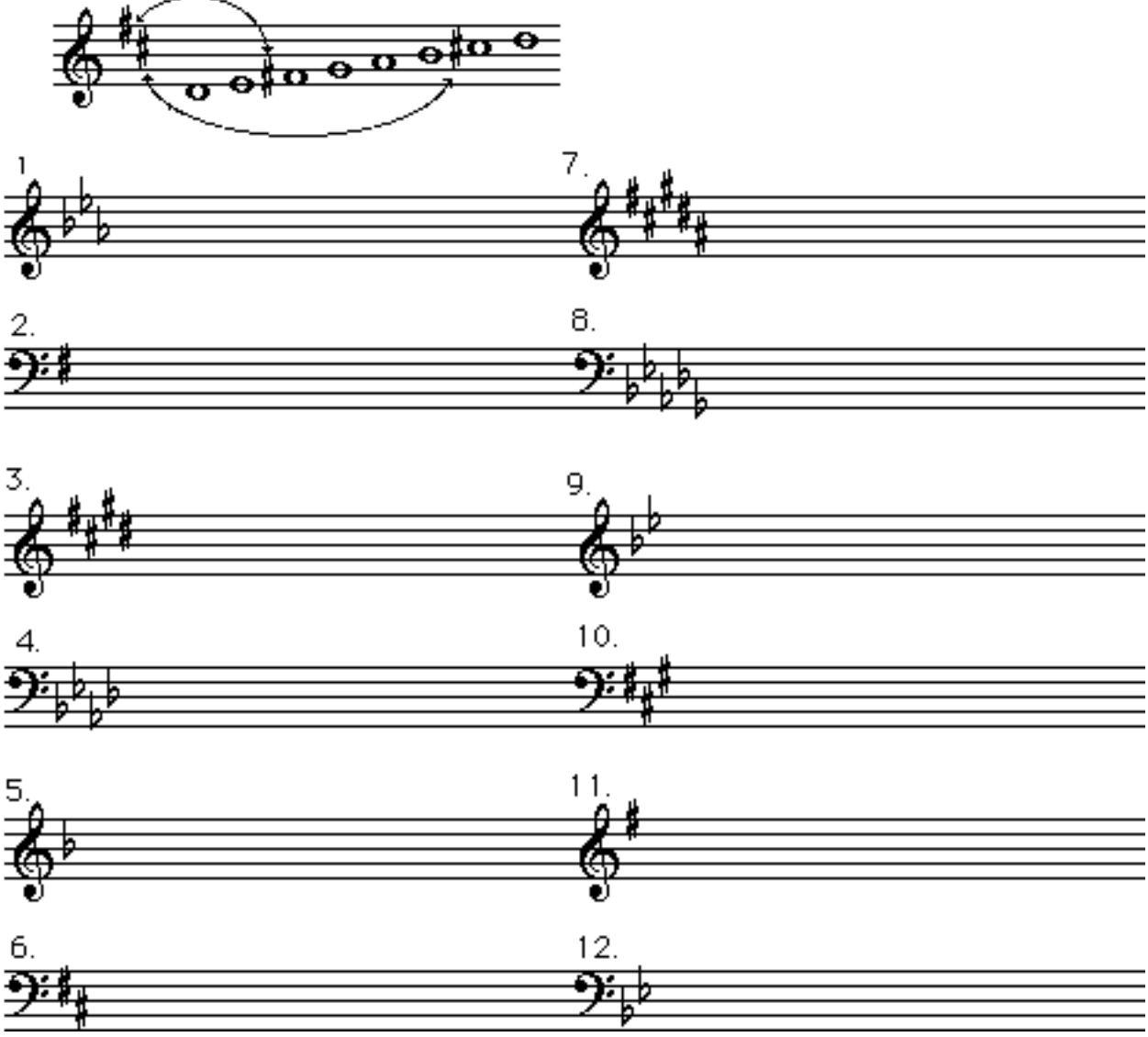
b. *DRAW* the other seven note heads in ascending order. Do not skip any lines or spaces. Leave enough room between notes to insert sharps or flats.

c. *CHECK* that the first note has the same letter name as the last note.

d. If the key note has a sharp or flat, DRAW a sharp or flat in front of the last note as well.

e. *INSERT*, next to the affected notes, the sharps or flats which appear in the key signature.

Example

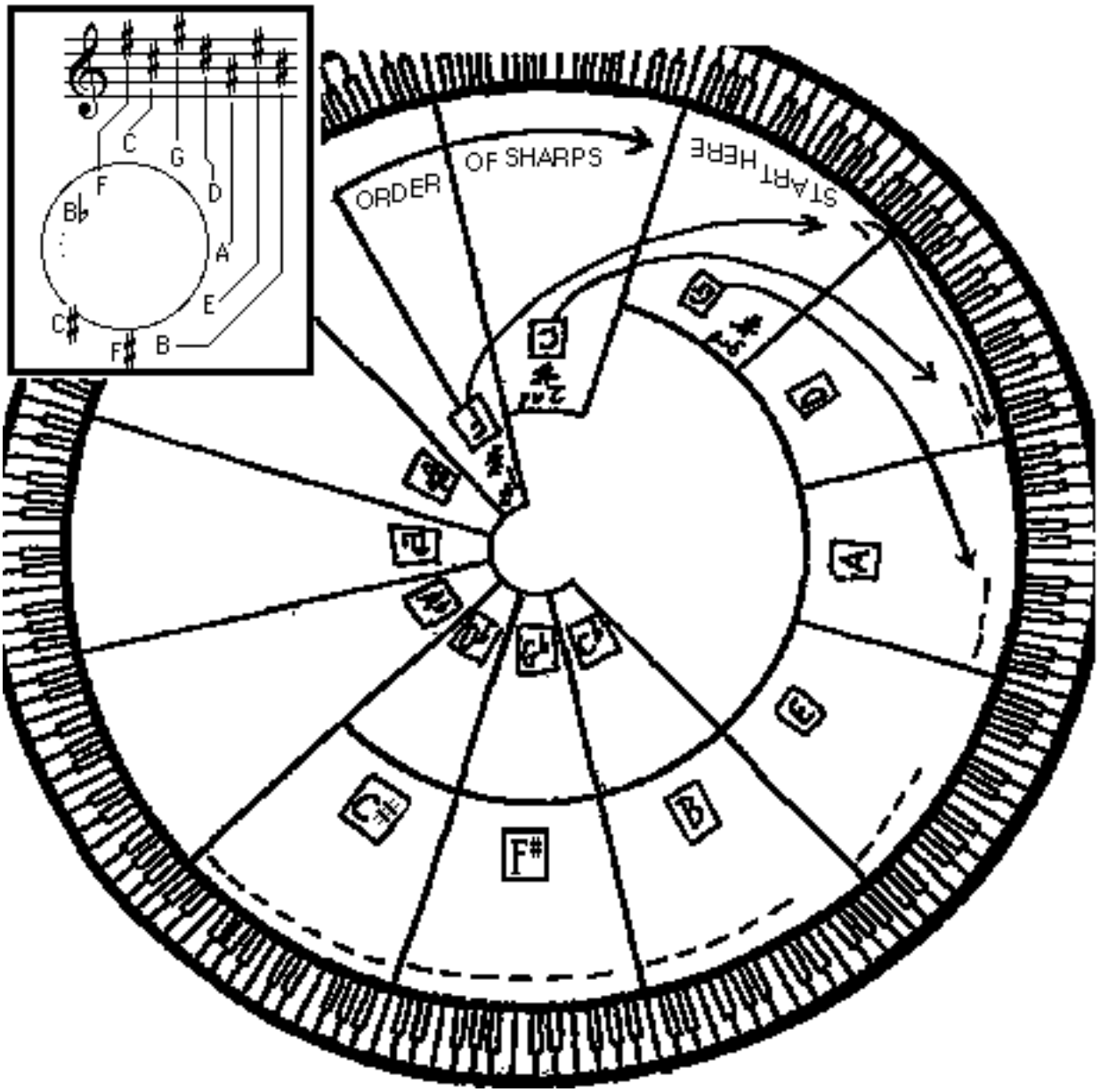


Date:

5.6 Relate the order of sharps to the order of keys

•The order of sharps in key signatures follows the order of keys in the circle of fifths. The letter for the first sharp, F, can be found as a key in the upper left of the circle. The letter for the next sharp, C, can be found as the key next to F proceeding clockwise.

FILL IN the sharps for each sharp key consulting the keys in the circle of fifths.



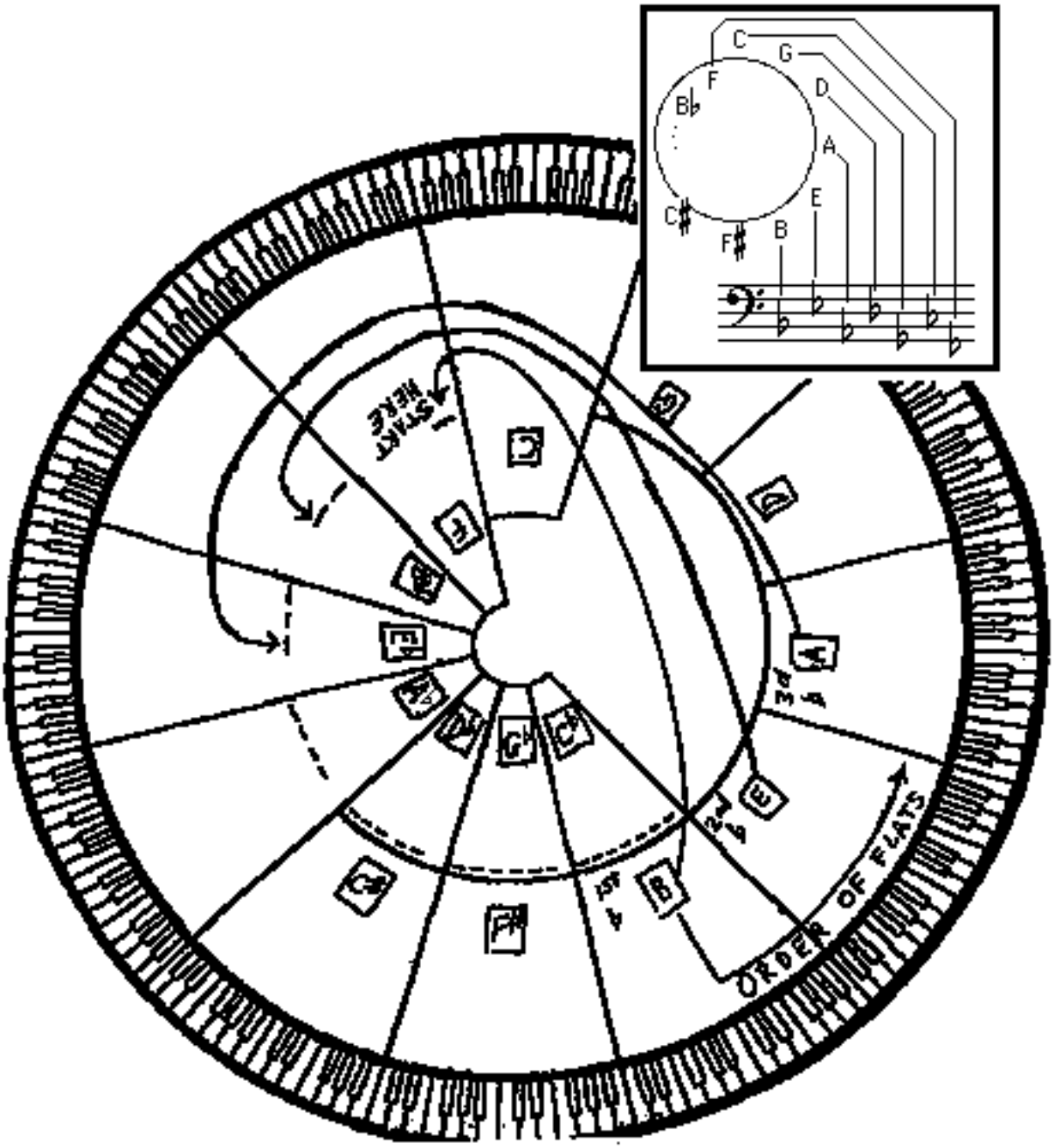
Date:

5.7 Relate the order of flats to the order of keys

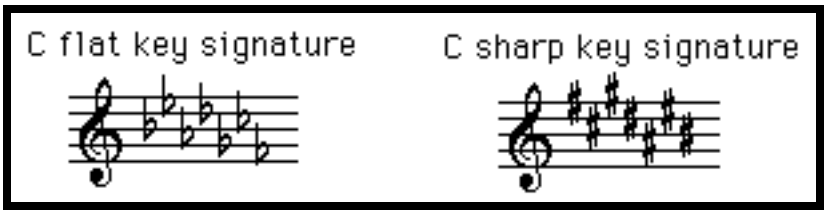
•The order of flats in key signatures also follows the order of keys in the circle of fifths.

The letter for the first flat, B, can be found as a key in the lower right of the circle.
The letter for the next flat, E, can be found as the key next to B proceeding counter-clockwise.

FILL IN the flats for each flat key consulting the keys in the circle of fifths.



5.8 page 1 Write key signatures in treble clef

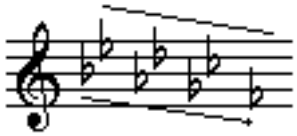


• Key signatures are ultimately derived from a pattern of whole steps and half steps. This is because key signatures are based on scales, and scales are based on the pattern,

whole whole half whole whole whole half

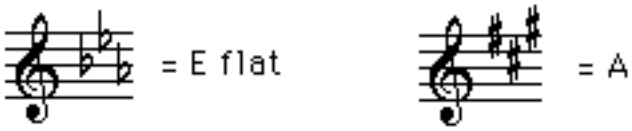
•Sharps and flats in key signatures must be placed in the proper octave on the staff. This placement is illustrated above for the keys of C flat and C sharp.

•The flats can be visualized in pairs, each pair going down a line or space.



•The sharps can be visualized as groups of 2, 3 and 2, each group going up a line or space.

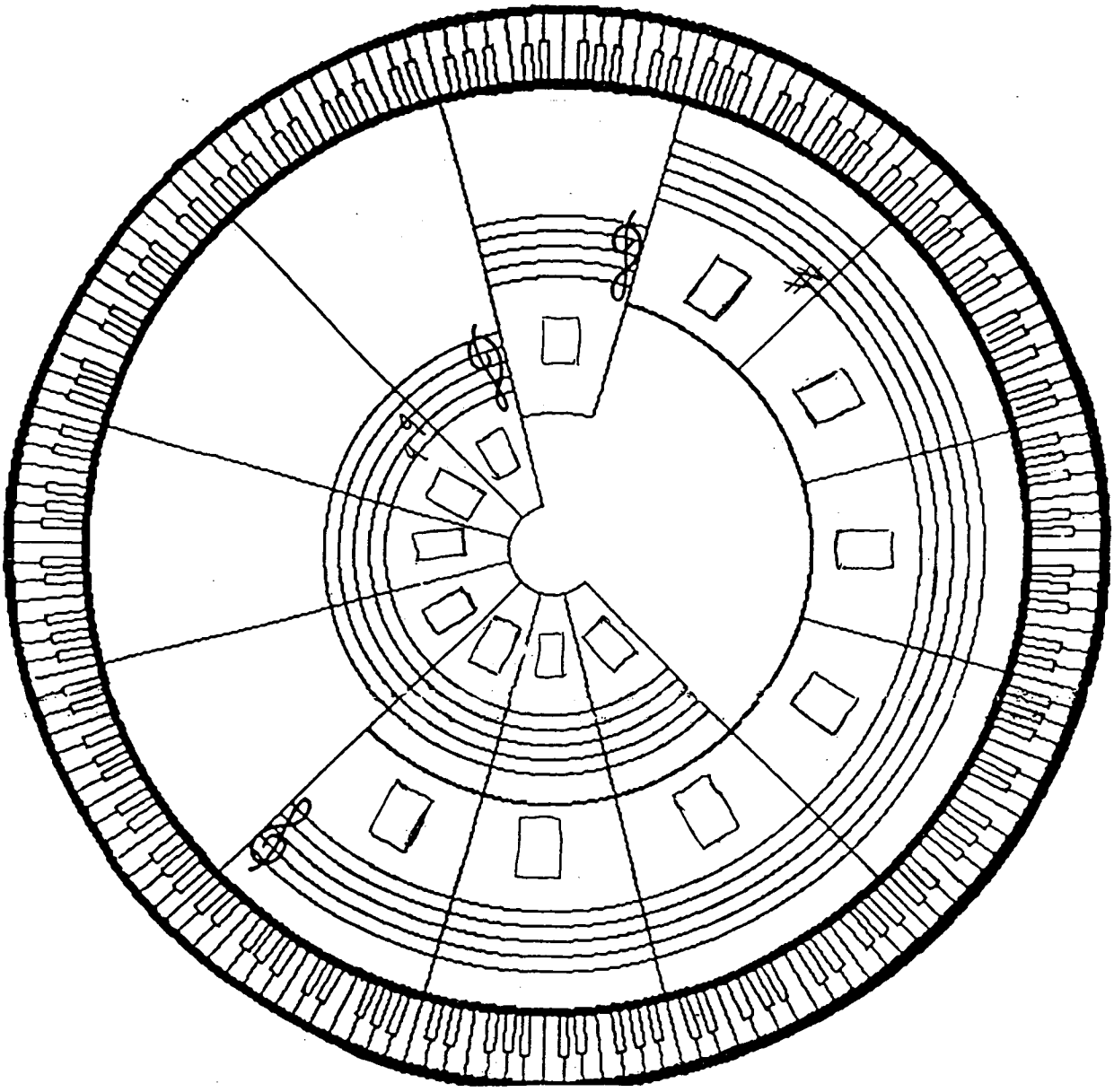
• The placement of sharps and flats is the same for key signatures other than C sharp and C flat.



Date:

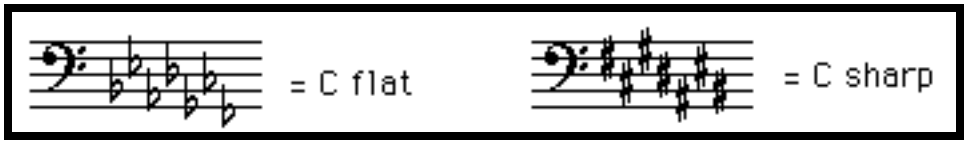
5.8 page 2 Write key signatures in treble clef

WRITE all keys in the boxes and all key signatures on the staffs. Use the previous page as a guide.

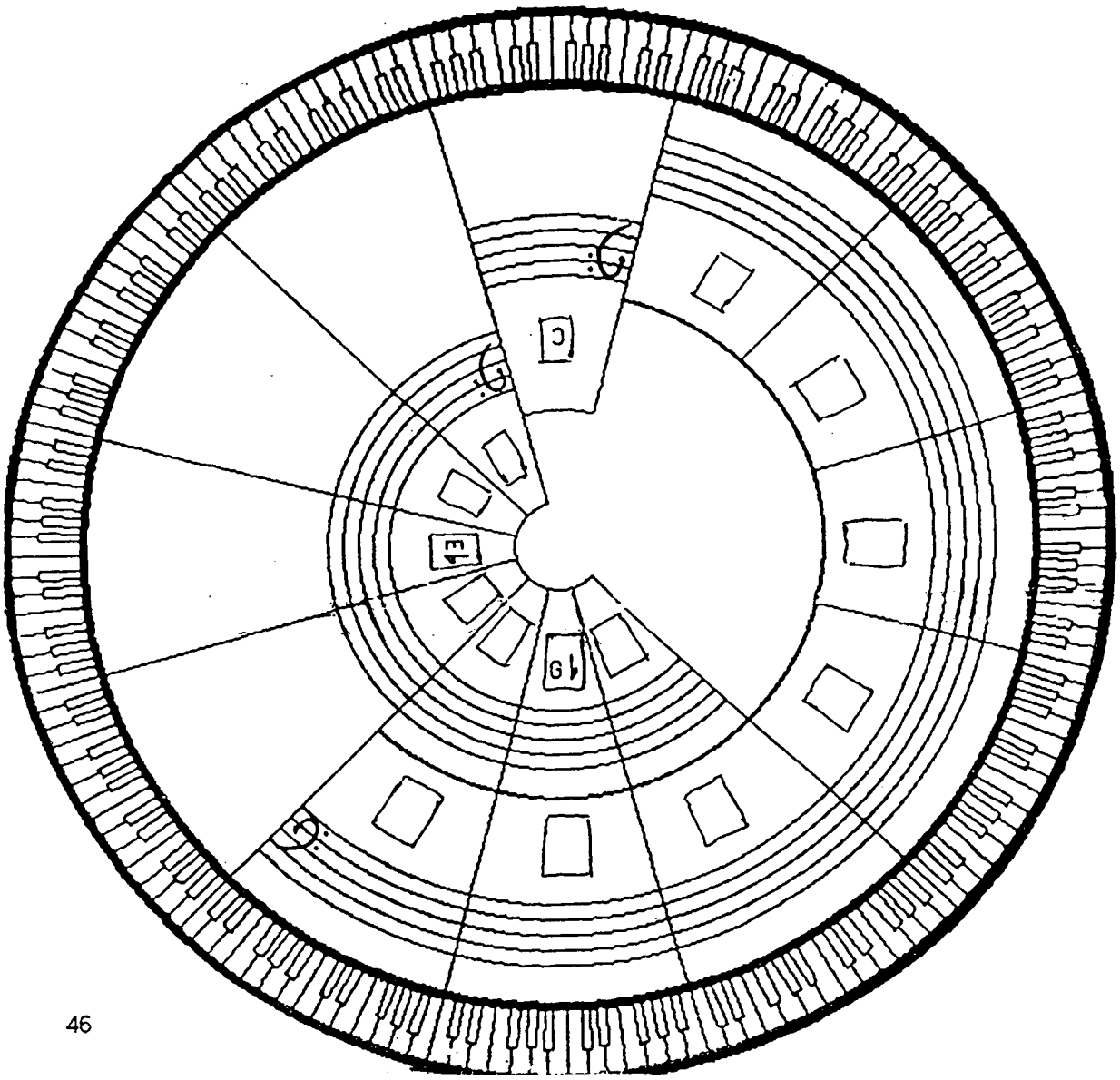


Date:

5.9 Write key signatures in bass clef



WRITE all keys in the boxes and all the key signatures on the staffs. Use the key signatures above, for C flat and C sharp, as a guide.

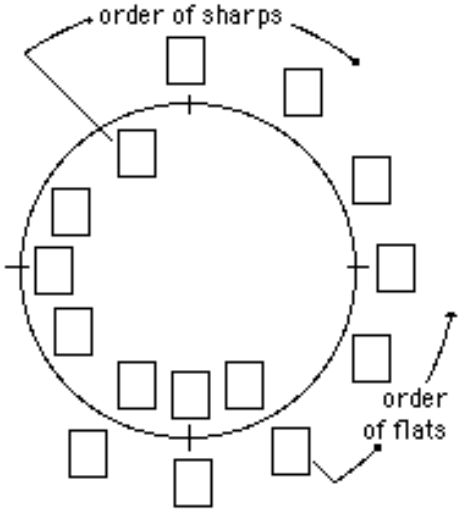


46

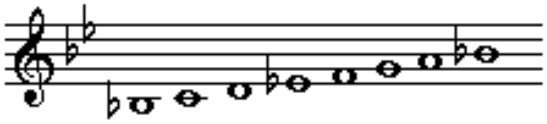
Date:

5.10 Write scales given their key note

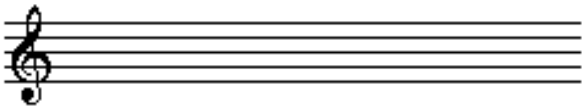
1. FILL IN the keys in the circle of fifths.
2. WRITE the key signatures and scales.



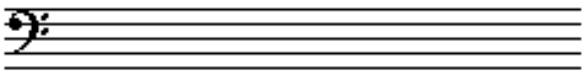
Example: B♭



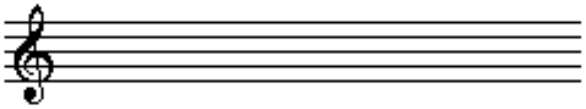
1. E



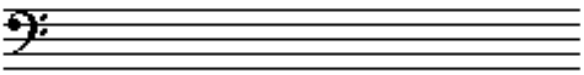
2. G♭



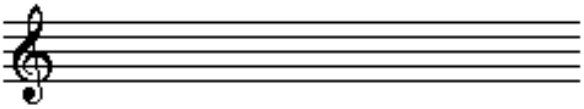
3. A



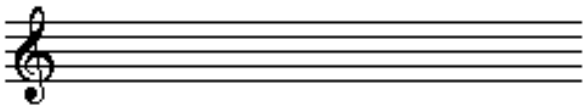
4. B



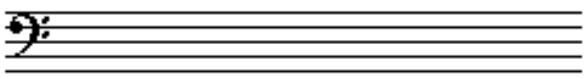
5. A♭



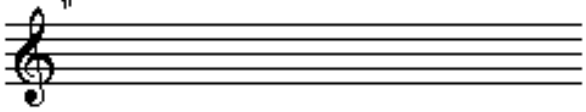
6. F



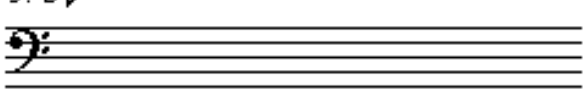
7. D



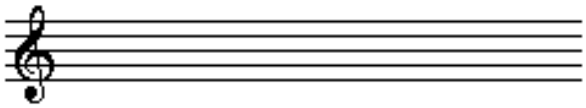
8. F♯



9. D♭



10. E♭



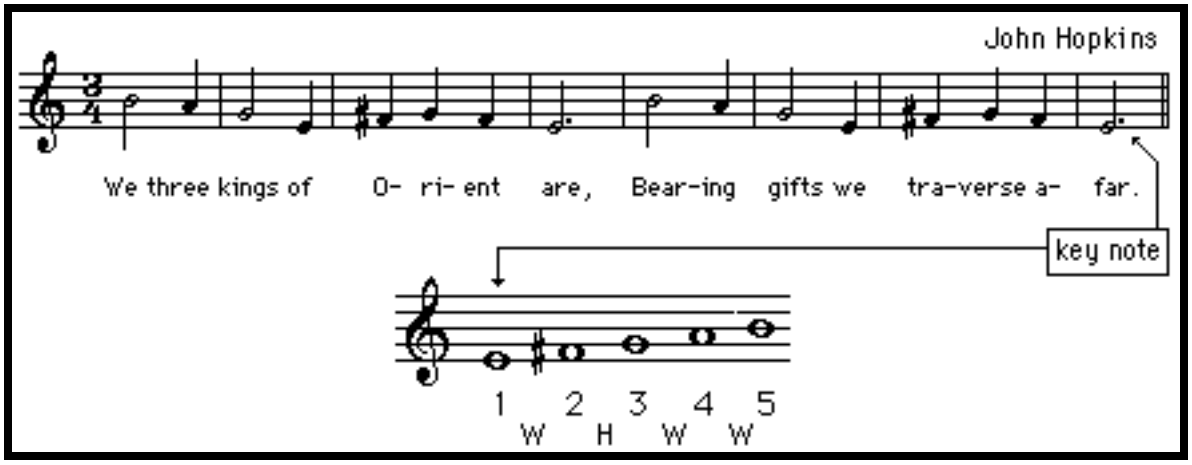
3. *GO ONLINE* to www.gmajormusictheory.org
   a. *CLICK* "Music Fundamentals"
   b. *CLICK* in the "Virtual Flash Cards" column:
      5.6 Sharps and Flats in Major Keys
   c. *PRACTICE* the key signatures you have learned.

Chapter 6 Natural Minor Scales and Minor Key Signatures

IIn this chapter you will:

1. Write the first five notes of a minor scale	5. Write some minor key signatures
2. Write a natural minor scale	6. Find relative major and minor keys
3. Write natural minor scales on the circle of fifths, 1	7. Write major and minor key signatures
4. Write natural minor scales on the circle of fifths, 2	8. Write minor keys on the circle of fifths:

6.1 Write the first five notes of minor scales



•The Christmas Carol, "We Three Kings" is in a minor key and its notes are taken from a minor scale. Music in minor keys often seems darker, more serious or more exotic than music in major keys.

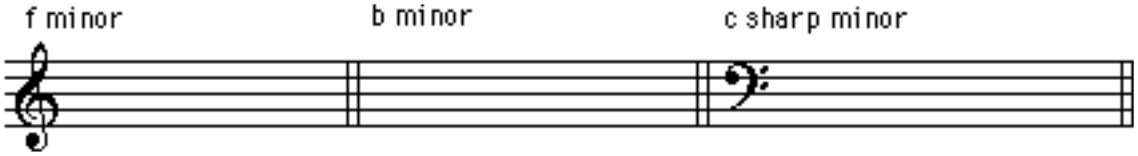
• There are three minor scales: natural, harmonic and melodic.

• All three minor scales have the same pattern of whole steps and half steps for the first five notes: whole, half, whole, whole (see above).

•As a result of the half step between scale degrees 2 and 3, rather than between 3 and 4 as in major, scale degree 3 is lower in minor than in major. The lower third scale degree gives minor scales their character.

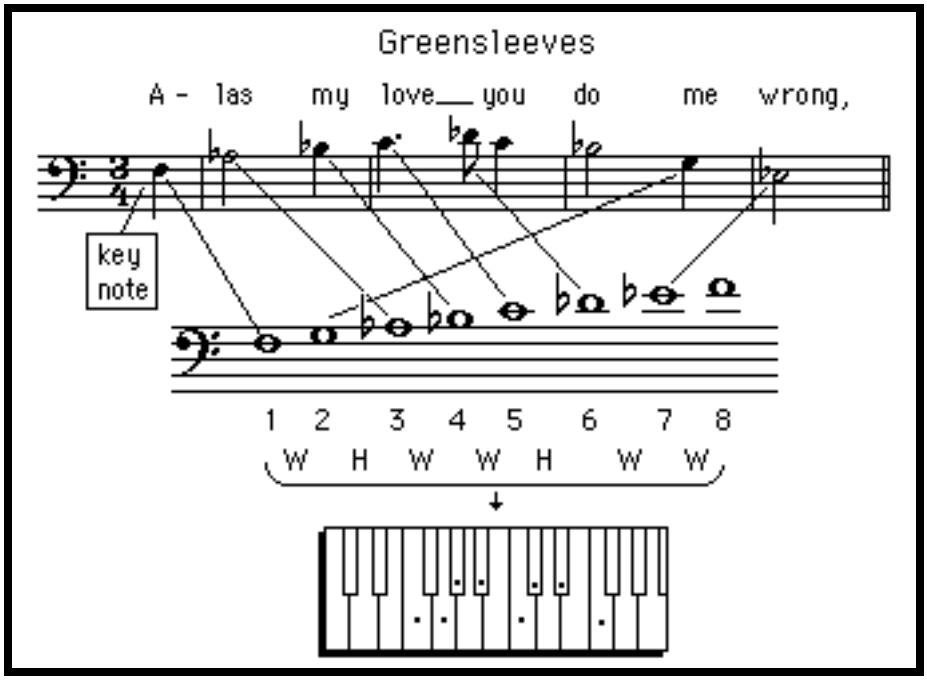
---

1. *PLAY* the first part of "We Three Kings" in the illustration above. Do you hear a darker, more exotic mood than in previous examples?
2. *WRITE* the first five notes of the following minor scales.
   a. *DRAW* five notes in ascending order beginning with the key note
   b. *WRITE* the numbers 1 through 5 beneath the notes.
   c. *WRITE* the pattern W H W W between the numbers.
   d. *INSERT* flats or sharps between notes according to the pattern.



Date:

6.2 Write a natural minor scale



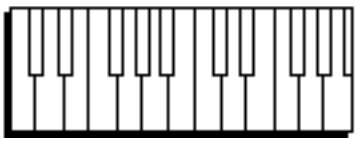
- The notes of "Greensleeves" are taken from the natural minor scale.
- The natural minor scale has this pattern of half steps and whole steps:

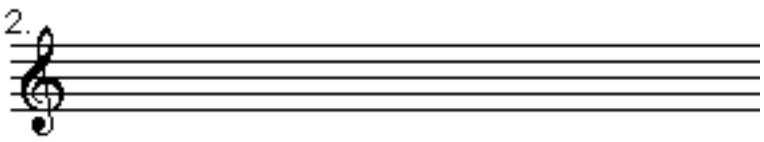
1	2	3	4	5	6	7	8
	W	H	W	W	H	W	W

---

1. *DRAW* dots for a natural minor scale on the keyboard below beginning with the key note C.

2. *WRITE* the notes for a natural minor scale on the staff below beginning with the key note B.
   a. *DRAW* eight notes beginning and ending on the note B
   b. *NUMBER* the notes from 1 to 8
   c. *WRITE* W's and H's between the numbers in the pattern shown above
   d. *INSERT* sharps or flats between the notes so the distances between the notes correspond to the pattern of half steps and whole steps.

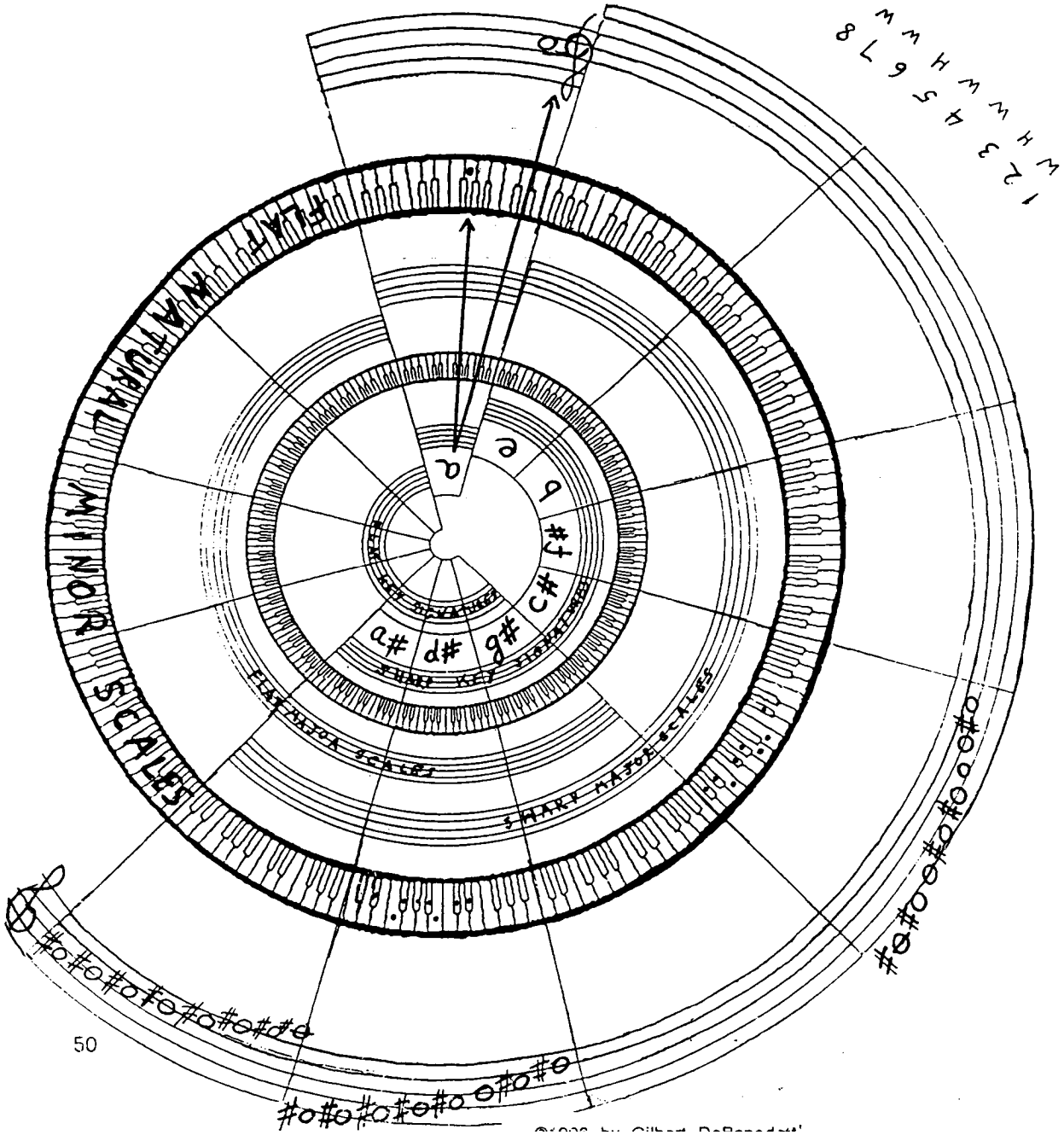
1. 

2. 

Date:

6.3 Write natural minor scales on the circle of fifths, 1

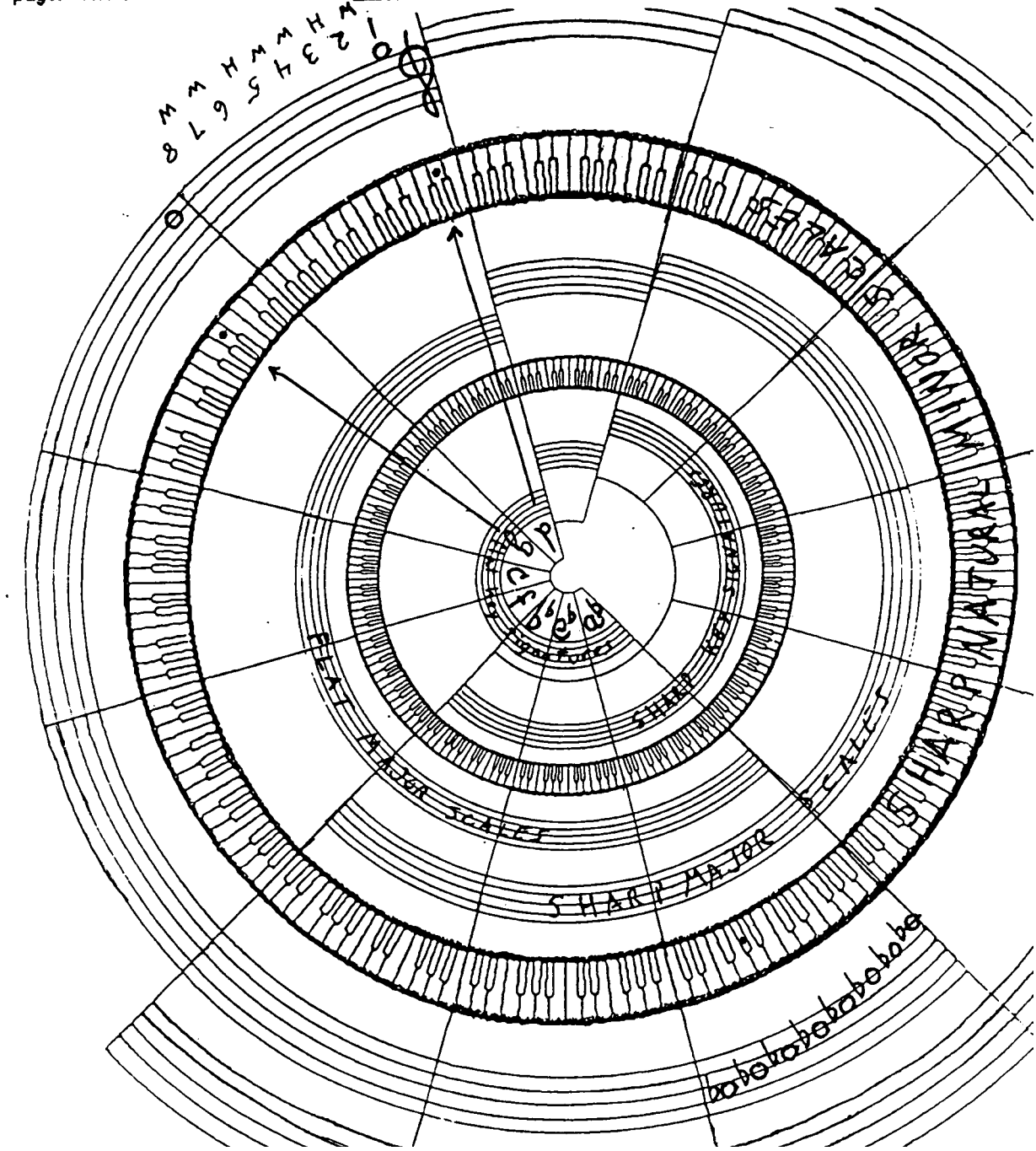
1. *DRAW* dots for the notes of the missing natural minor scales on the outside keyboard. Only use the key notes shown inside the innermost keyboard.
2. *WRITE* notes for the missing natural minor scales on the outside staff. All these scales, except the one on top (a natural minor), will have sharps.



Date:

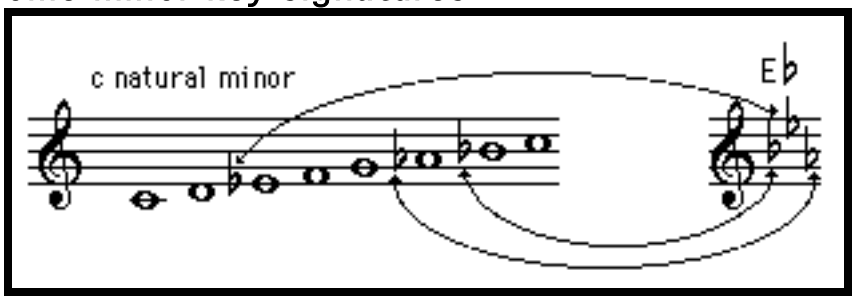
6.4 Write natural minor scales on the circle of fifths, 2

1. *DRAW* dots for the notes of the missing natural minor scales on the outside keyboard. Only use the key notes shown inside the innermost keyboard.
2. *WRITE* notes for the missing natural minor scales on the staff to the left and bottom of the page. All these scales will have flats .



Date:

6.5 Write some minor key signatures



• Sharps and flats in natural minor scales are the same as sharps and flats in major scales and major key signatures. In the example above, the flats in the c natural minor scale are the same as the flats in the E flat major key signature (and in the E flat major scale).

• Key signatures for minor keys are derived from natural minor scales.

• Therefore, all key signatures have both a major and a minor key.

Three flats is the key signature for both E flat major and for c minor.

---

1. *WRITE* the following natural minor scales. Use the procedure on worksheet 6.2.
2. *WRITE* their key signatures.
3. *IDENTIFY* the major keys which have the same key signatures.

a. b natural minor

b minor key signature

same as _____ major

b. f natural minor

f minor key signature

same as _____ major

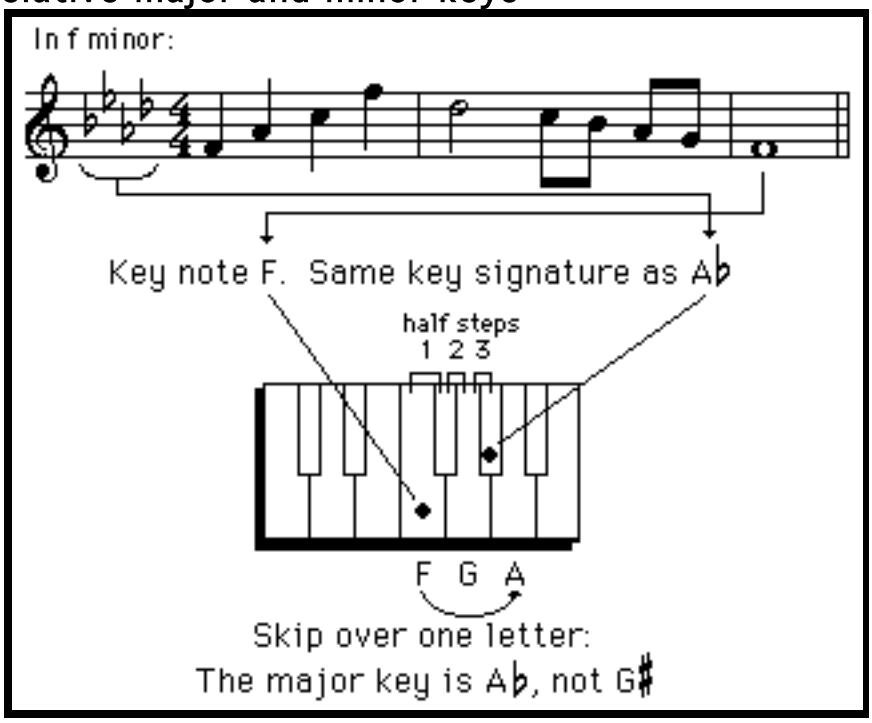
c. f♯ natural minor

f♯ minor key signature

same as _____ major

Date:

6.6 Find relative major and minor keys



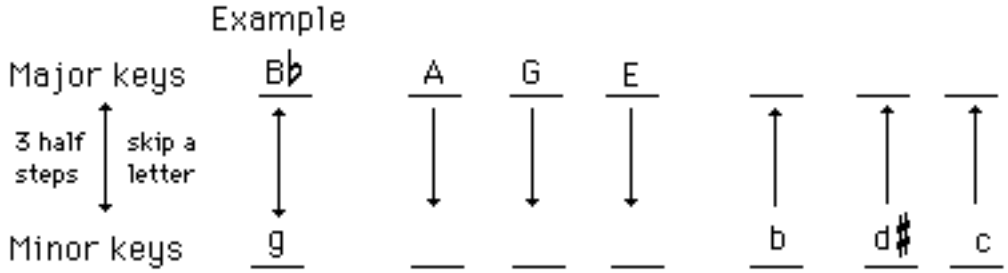
•Major and minor keys are related to each other when they have the same key signature. When there is such a relationship the keys are called relative major and minor keys. F minor is the relative minor of A flat, and A flat is the relative major of f minor.

• Minor keys are three half steps down from their relative major key.
Major keys then must be three half steps up from their relative minor key.
The keyboard above shows this distance between F and A flat.

• There must be one letter in between the letter names for relative major and minor keys. For the keys of f minor and A flat there is one letter, G, in between.

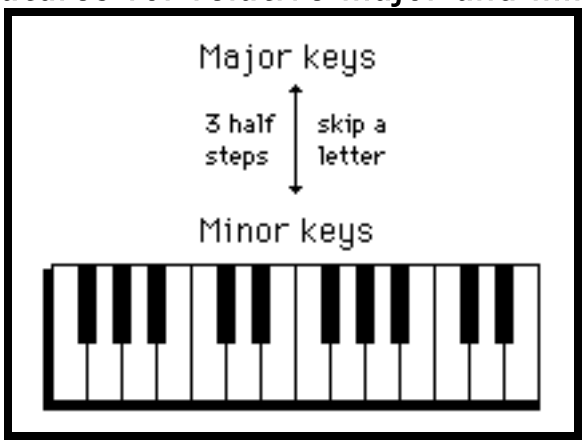
• Minor keys are written lower case to distinguish them from major keys.

WRITE the relative major and minor keys. Use the keyboard above.

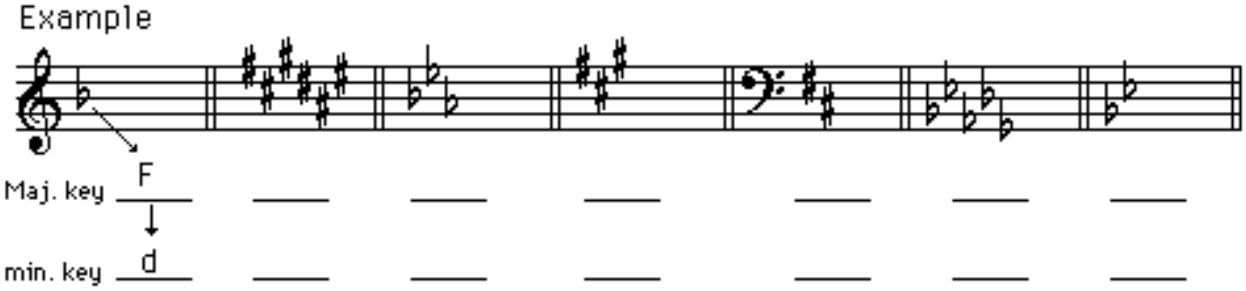


Date:

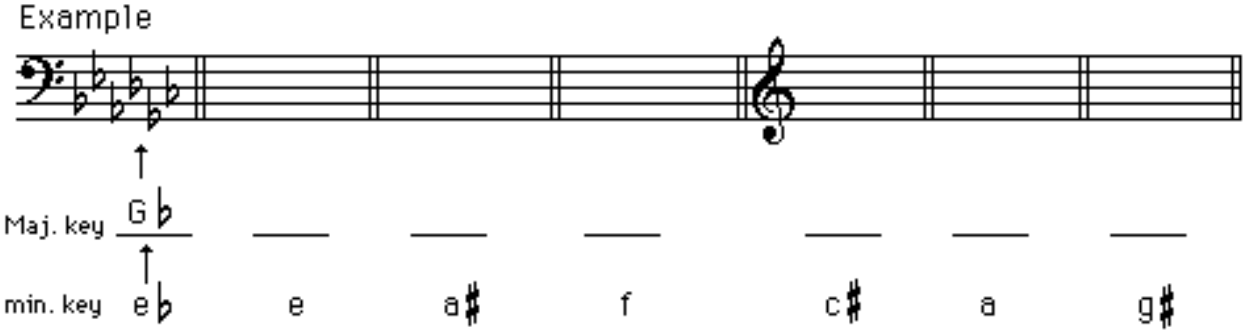
6.7 Write key signatures for relative major and minor keys



1. *WRITE* the relative major and minor keys for these key signatures



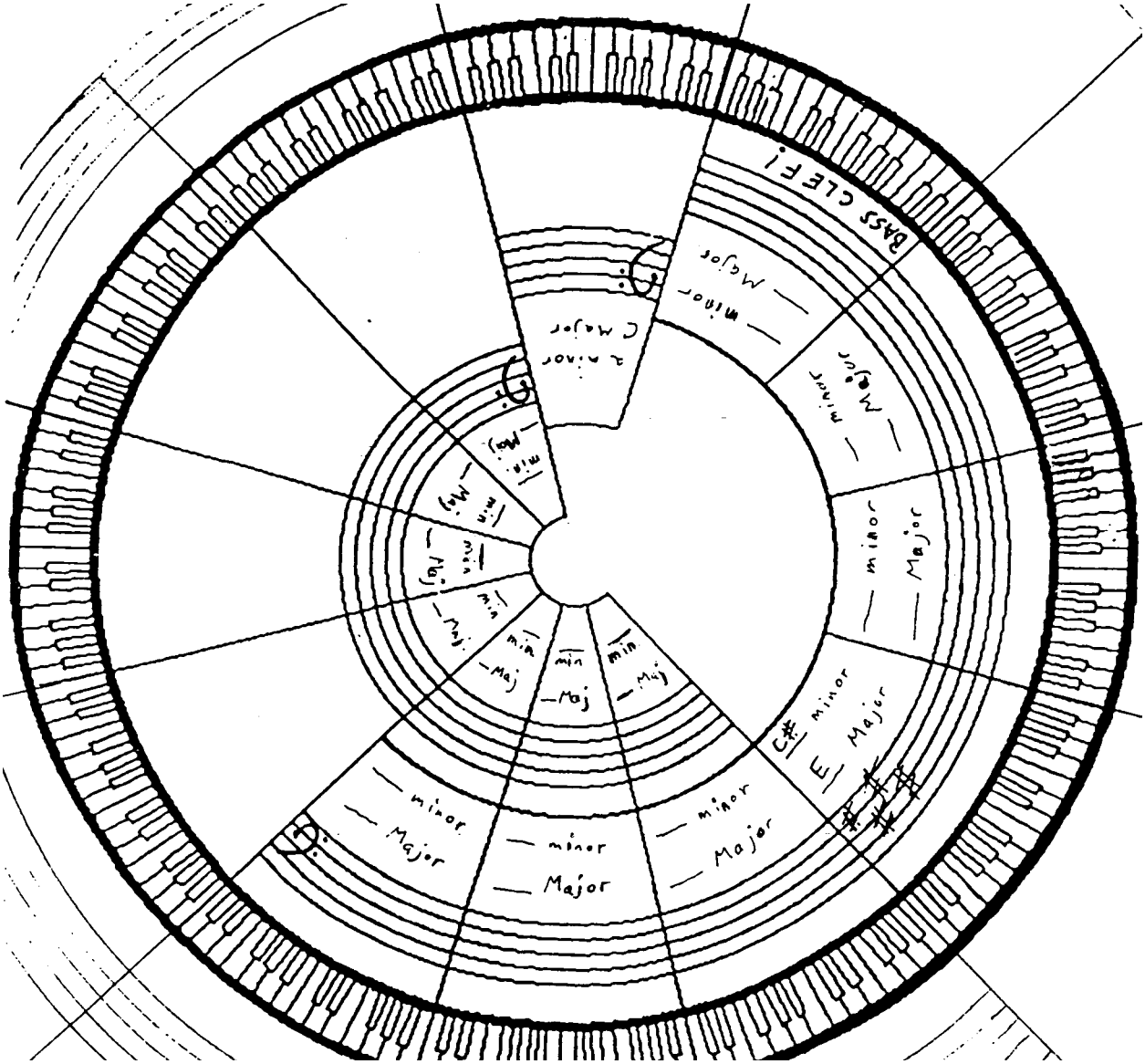
2. *WRITE* the relative major keys and the key signatures for the minor keys below.



3. *GO ONLINE* to www.gmajormusictheory.org
   a. *CLICK* "Music Fundamentals"
   b. *CLICK* in the "Virtual Flash Cards" column:
      6.1 Key Signatures for Minor keys *AND*...
      6.2 Sharps and Flats in Minor Keys
   c. *PRACTICE* the minor key signatures you have learned.

6.8 Write keys and key signatures on the circle of fifths

WRITE: 1) minor keys, 2) major keys, and 3) key signatures on the circle of fifths.

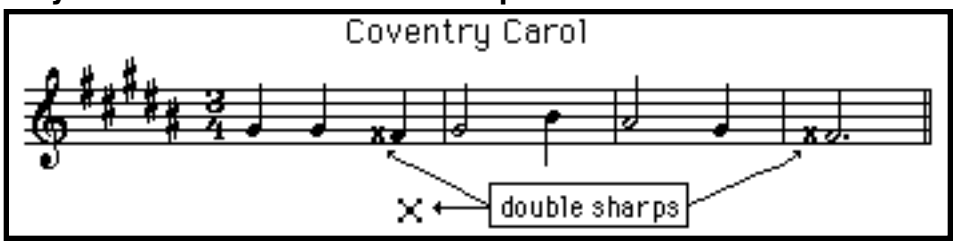


Chapter 7 Writing Minor Scales with Key Signatures

In this chapter you will:
1. Identify notes with double sharps
2. Identify notes with double flats
3. Identify notes with natural signs
4. Write natural minor scales with key signatures
5. Write harmonic minor scales with key signatures
6. Write melodic minor scales with key signatures
7. Review writing all minor scales

Date:_____

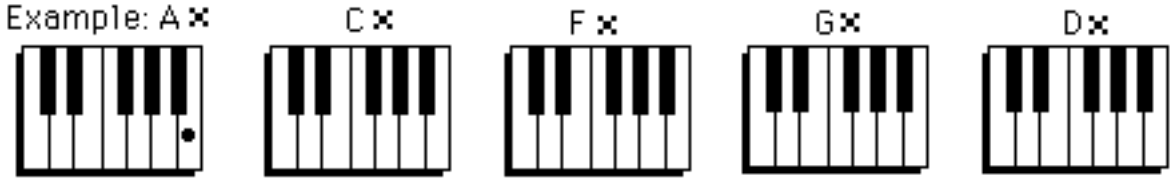
7.1 Identify notes with double sharps



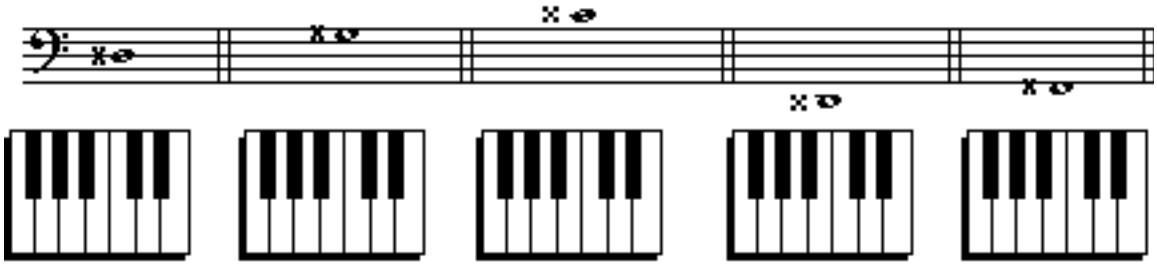
- A double sharp, 𝄪 , raises a note two half steps.

---

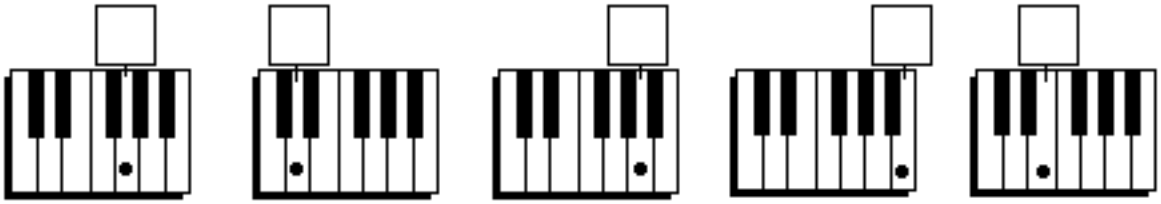
1. DRAW a dot on the keyboard which corresponds to the letter name.



2. DRAW a dot on the keyboard which corresponds to the note on the staff.
CAREFUL: These keyboards begin differently than those above.

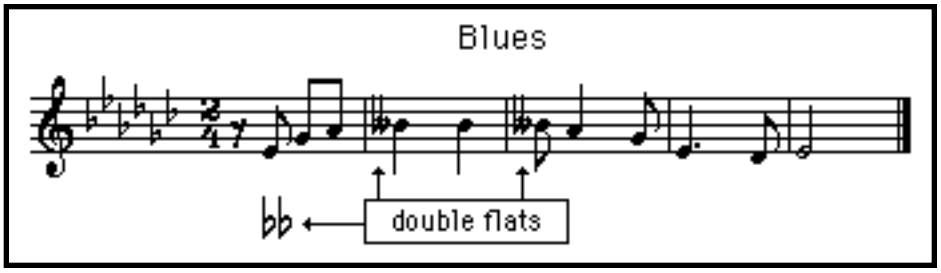


3. IDENTIFY the following notes by a letter with a double sharp.



Date:_____

7.2 Identify notes with double flats



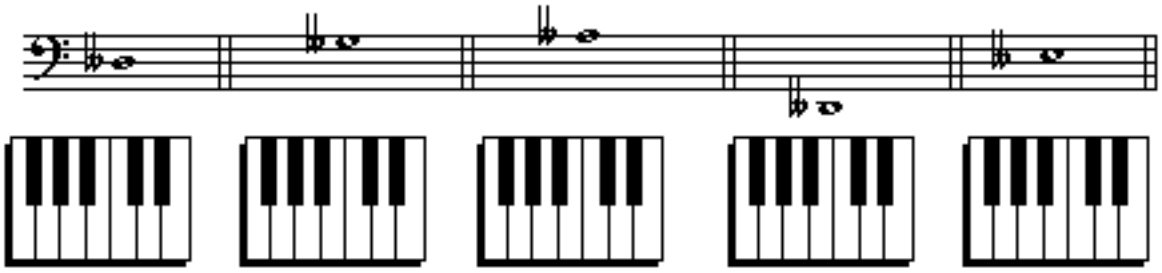
• A double flat, 𝄫 , lowers a note two half steps.

---

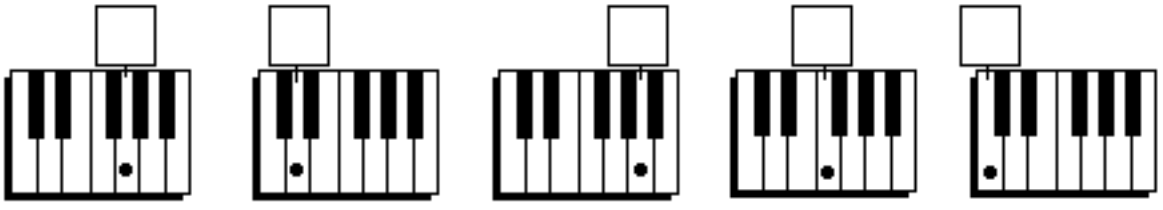
1. Draw a dot on the keyboard which corresponds to the letter name.

Example: A𝄫 E𝄫 B𝄫 G𝄫 D𝄫

2. Draw a dot on the keyboard which corresponds to the note on the staff.

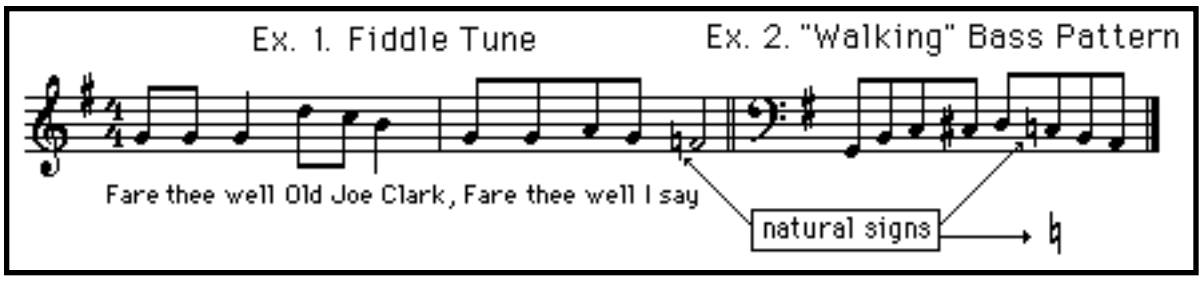


3. Identify the following notes by a letter with a double flat.



Date:_____

7.3 Identify notes with natural signs



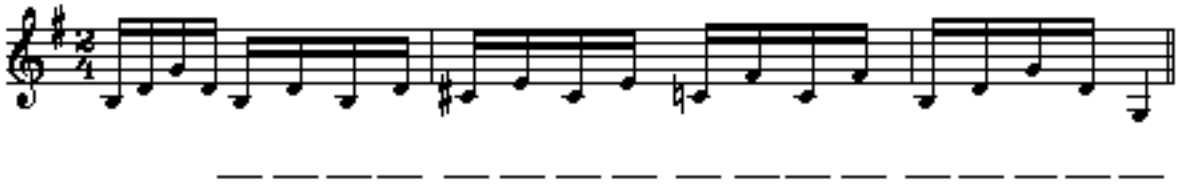
• Recall that a note with a sharp or flat next to it remains sharp or flat if it is repeated in the same measure (worksheet 4.3).

• Recall that key signatures show which notes are to be played sharp or flat in the music. These sharps and flats do not normally appear next to the notes themselves (worksheet 5.1).

• Natural signs, ♮ , cancel sharps, flats double sharps and double flats which appear in the key signature (Example 1 above), or which appear earlier in the measure (Example 2). A note marked with a natural sign is always a white key on the keyboard.

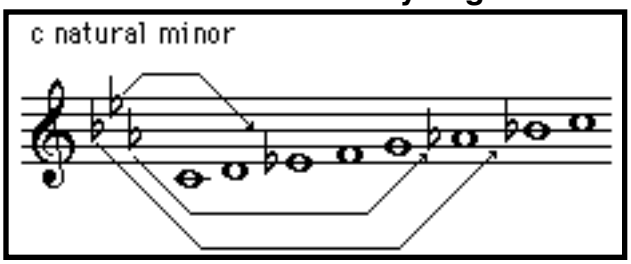
•The natural sign affects repeated notes for the remainder of the measure.

IDENTIFY the notes which have blanks underneath in the folowing phrase.



Date:_____

7.4 Write natural minor scales with key signatures

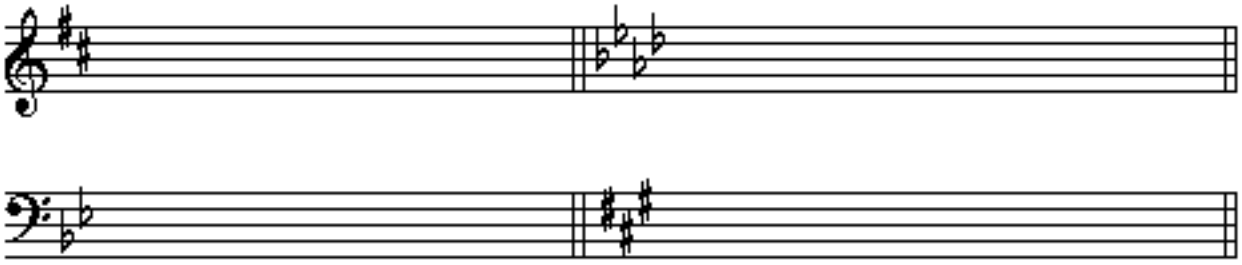


•It is faster to write minor scales by using their key signatures, once they are known, than by using half steps and whole steps between notes.

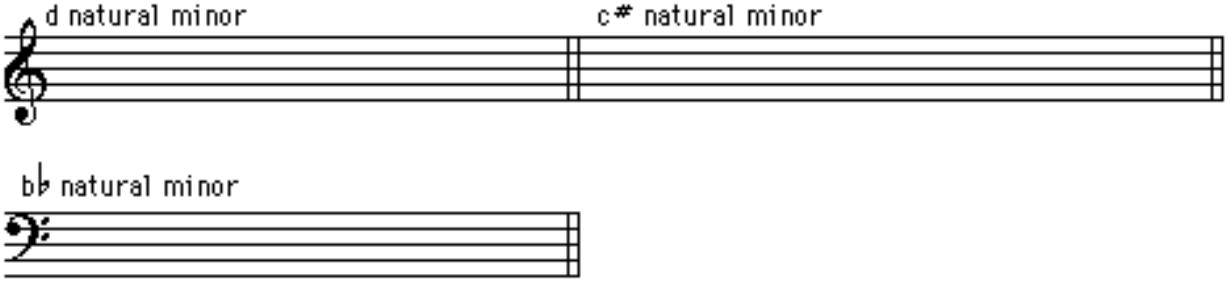
• The natural minor scale conforms to its key signature note for note. The key signature is in fact derived from the natural minor scale. See worksheet 6.5.

---

1. WRITE the natural minor scales for these key signatures.
   a. FIND the minor key note by:
      first finding the relative major key, and then
      count down three half steps and skip over a letter name.
   b. DRAW eight note heads beginning with the minor key note.
   c. INSERT flats or sharps from the key signature between note heads

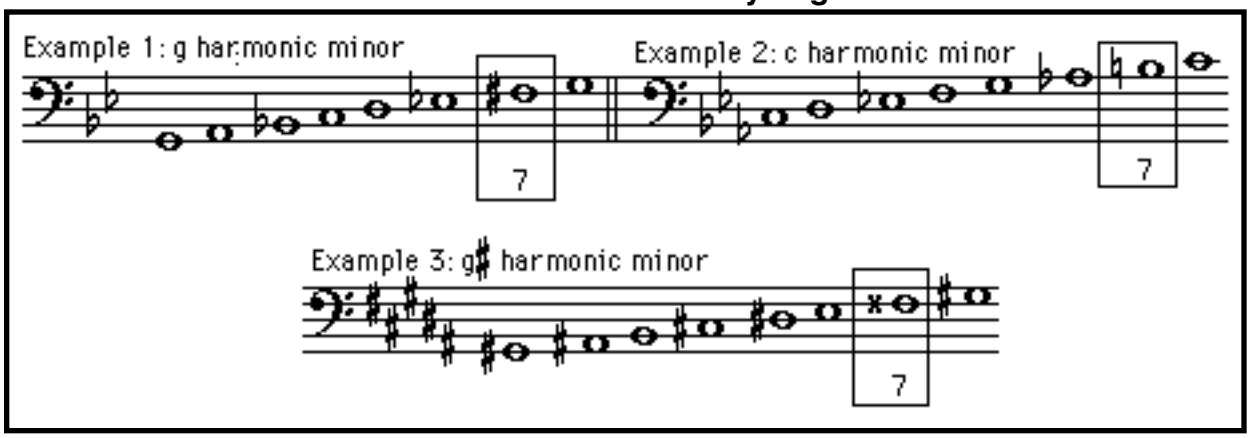


2. WRITE the natural minor scales for these key notes.
   a. FIND the relative major key by going up 3 half steps and skipping a letter.
   b. WRITE the key signature for these relative major and minor keys
   c. PROCEED as in b. and c. above



Date:_____

7.5 Write harmonic minor scales with key signatures



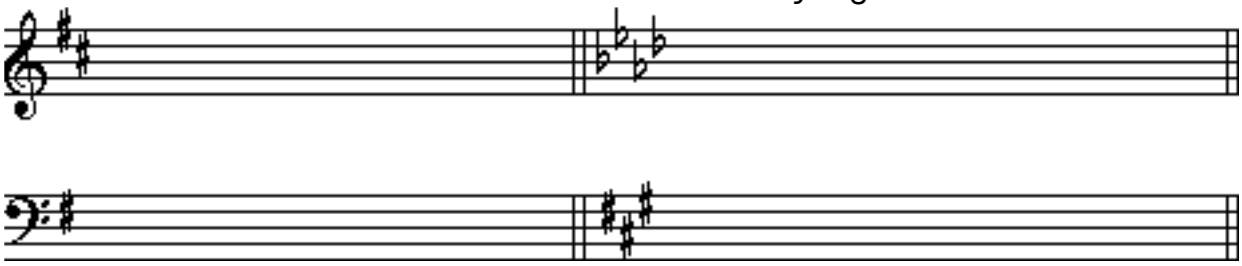
• In the harmonic minor scale, <u>scale degree 7 is a half step higher</u> than indicated in the key signature.

When scale degree 7 is not in the key signature add a sharp (example 1 above).
When scale degree 7 is flatted by the key signature add a natural (example 2).
When scale degree 7 is sharped by the key signature add a double sharp (example 3).

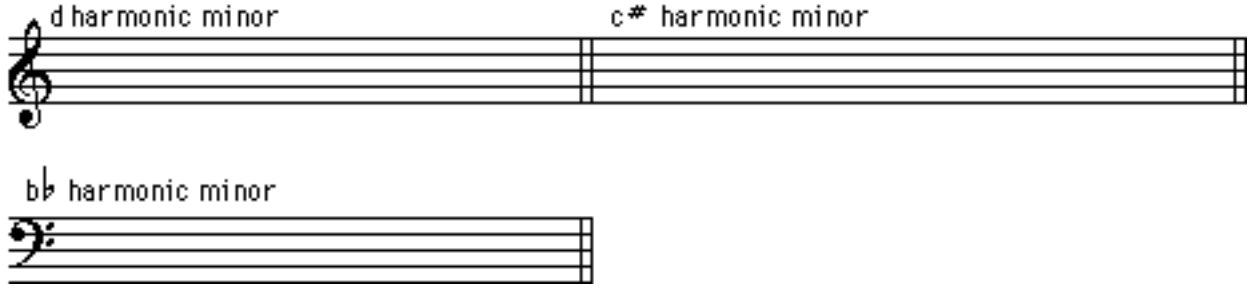
• Raising scale degree 7 creates a whole step plus a half step between degrees 6 and 7. This part of the scale sounds particularly exotic.

---

1. WRITE the harmonic minor scales for these key signatures.

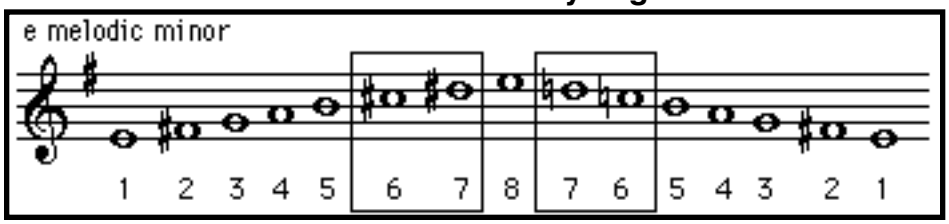


2. WRITE the harmonic minor scales for these key notes.



Date: _____

7.6 Write melodic minor scales with key signatures



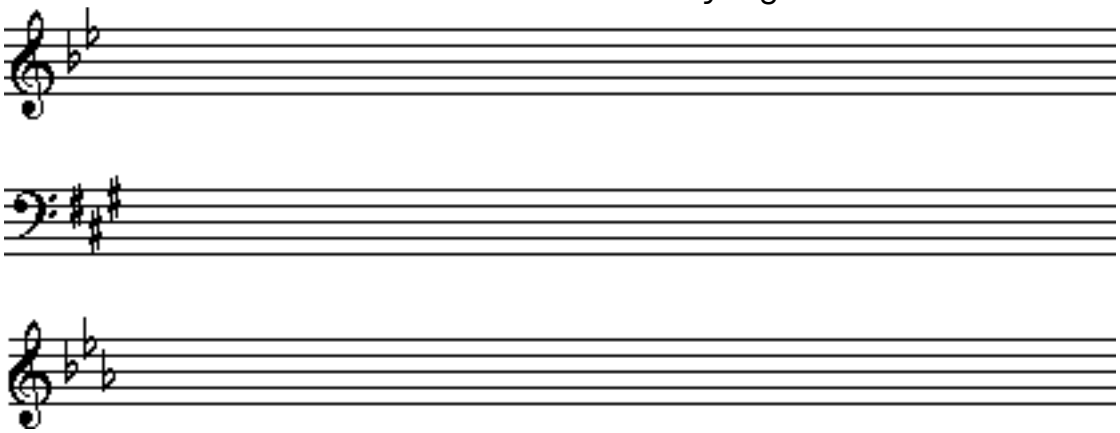
- The melodic minor scale goes both up and down.
- On the way up, scale degrees 6 and 7 are a half step higher than indicated in the key signature. These notes always require a natural, a sharp or a double sharp. See the above illustration.
- On the way down this scale conforms to the key signature exactly.

For clarity, sharps, flats and naturals should be written on scale degrees 6 and 7 when the scale goes down as well as up. See the above illustration.

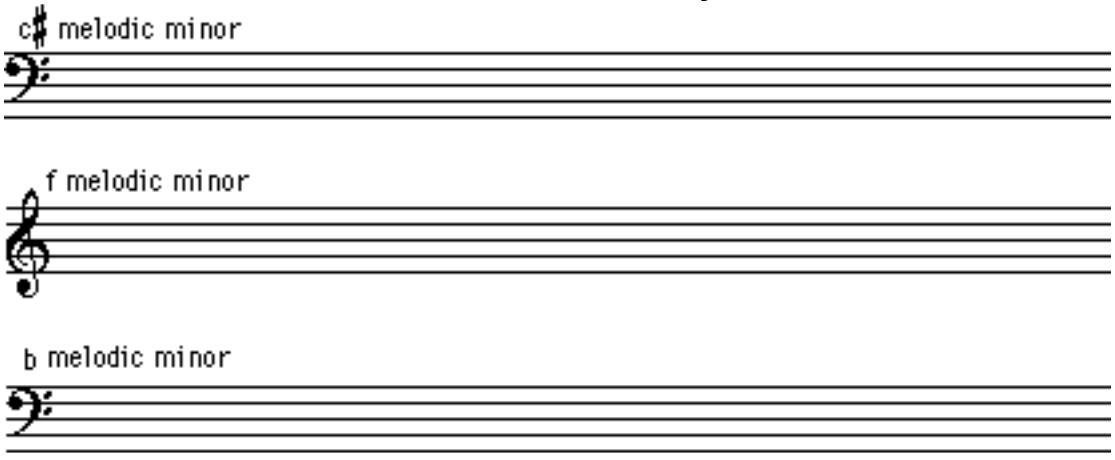
- Raising scale degrees 6 and 7 on the way up in the melodic minor scale makes those notes "lead" to scale degree 1. That is, raising these notes makes listeners anticipate that scale degree 1 will follow.

---

1. WRITE melodic minor scales for these key signatures.



2. WRITE melodic minor scales for these key notes.

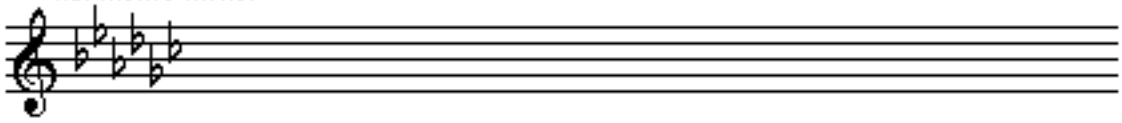


Date:_____

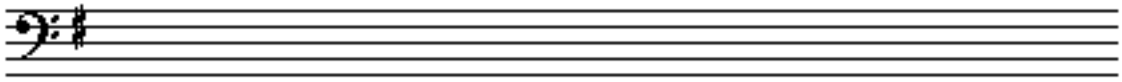
7.7 Review writing all minor scales

1. WRITE the following scales.

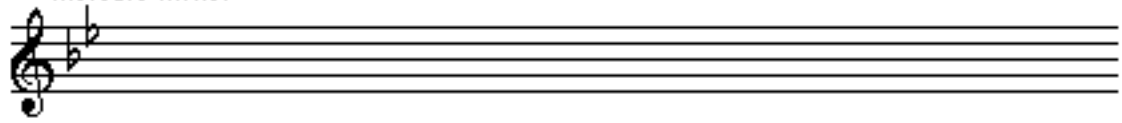
harmonic minor



natural minor

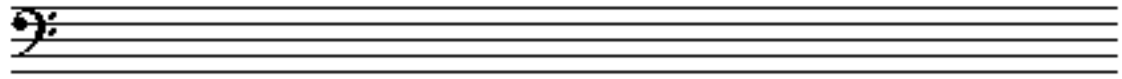


melodic minor

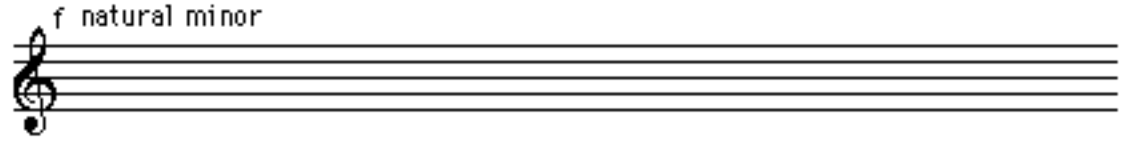


2. WRITE the following scales. INCLUDE the key signatures.

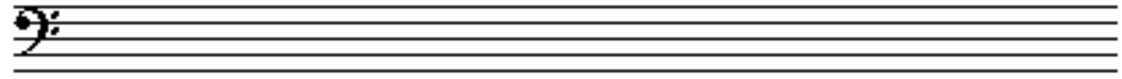
d♯ melodic minor



f natural minor



c♯ harmonic minor



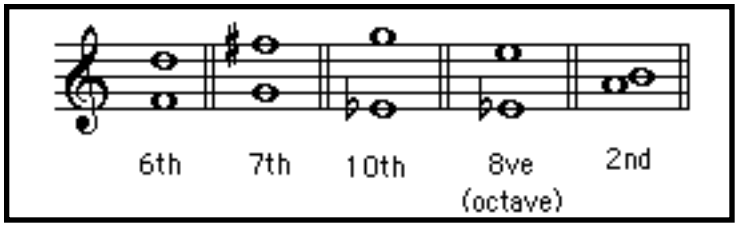
Chapter 8 Intervals

In this chapter you will:

1. Identify intervals by general names
2. Review key signatures in bass clef
3. Review key signatures in treble clef
4. Identify major intervals by writing scales
5. Write major intervals by remembering key signatures
6. Identify 2nds, 3rds, 6ths and 7ths
7. Write 2nds, 3rds, 6ths and 7ths
8. Identify 4ths, 5ths and 8ves
9. Write the top notes of intervals
10. Identify intervals whose bottom notes are not key notes
11. Identify intervals in musical phrases

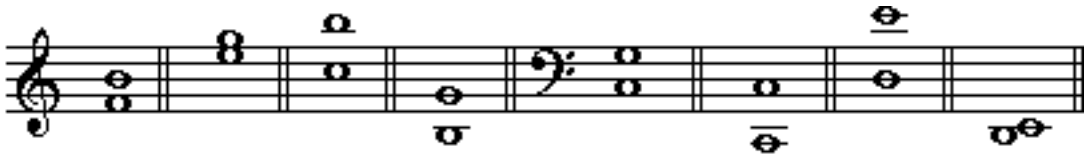
Date:_____

8.1 Identify intervals by general names



- An interval is the relationship between two notes.
- Intervals have two names, a general name and a specific name.
- The general name is usually an ordinal number (2nd, 3rd, 4th and so on).
- To find the general name of an interval, call the bottom note "one" and count the lines and spaces to the top note. Remember to count both the bottom and the top notes.
- A distance of 8 notes counted in this way is called an octave (8ve).
- The notes of a 2nd are written beside each other, not on top of each other.

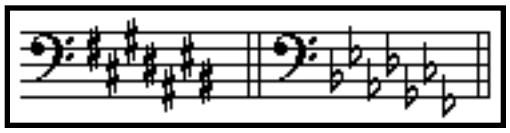
WRITE letter names for the top and bottom notes. Then write the interval's general name.



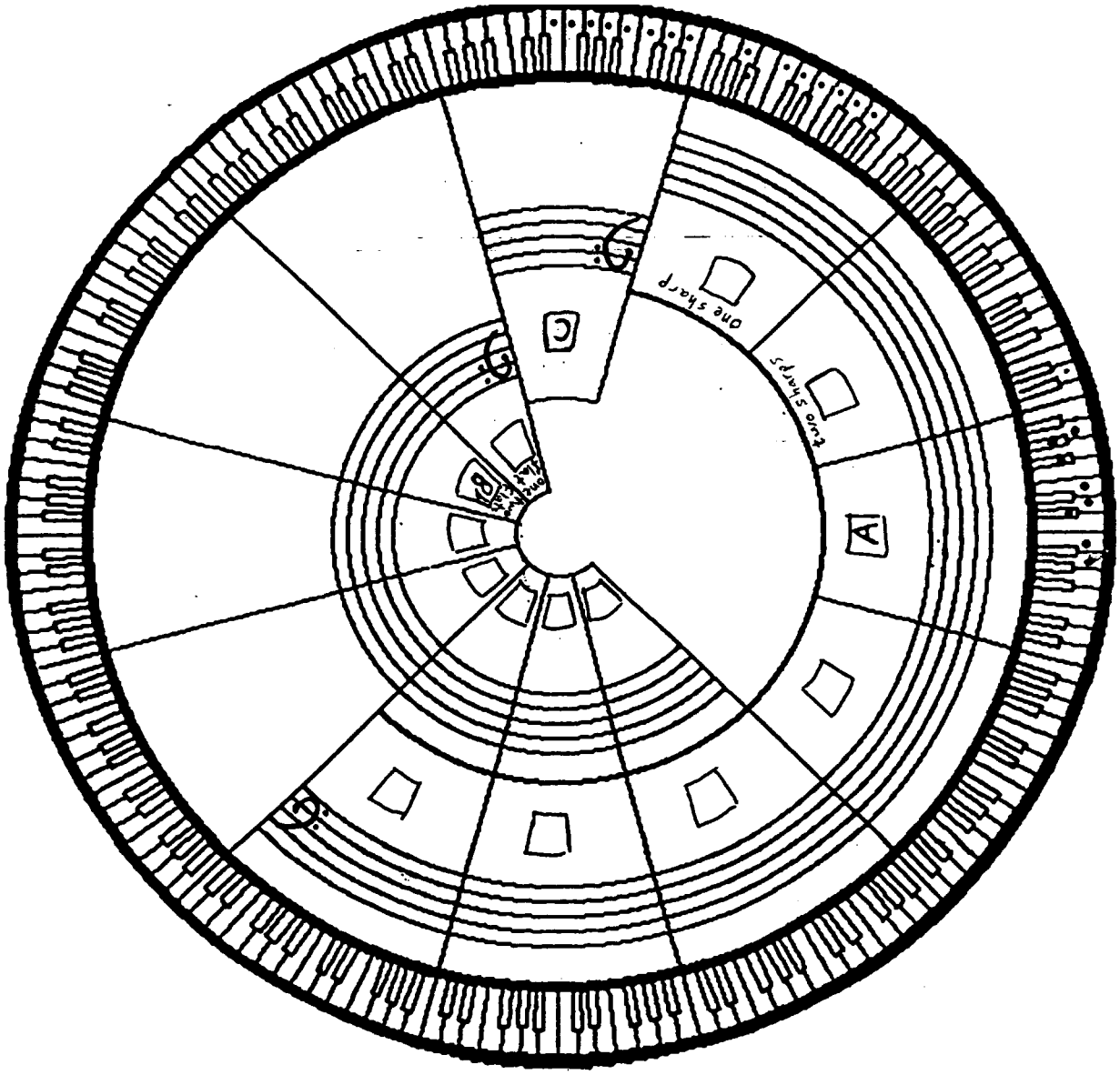
top note	____	____	____	____	____	____	____	____
bottom note	____	____	____	____	____	____	____	____
interval general name	____	____	____	____	____	____	____	____

Date:_____

8.2 Review key signatures in bass clef

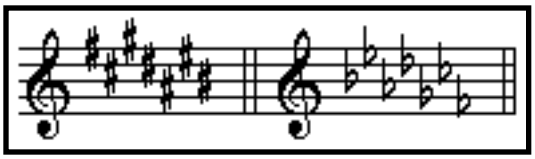


1. NAME the major keys in the boxes according to the circle of fifths.
2. WRITE the key signatures for all major keys on the staffs.
   Use the key signatures for C sharp and C flat as a guide (see above).

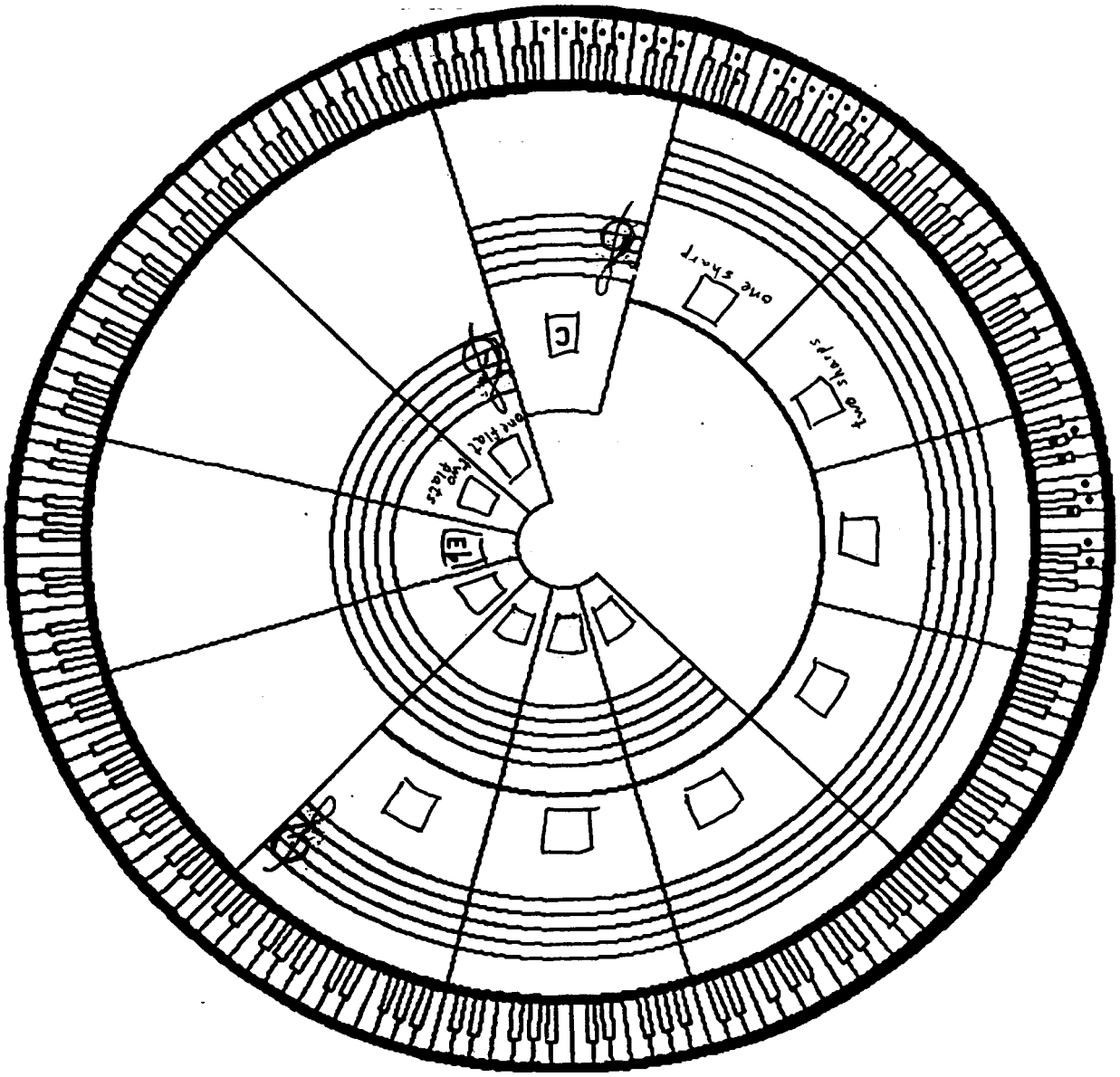


Date: _____

8.3 Review key signatures in treble clef

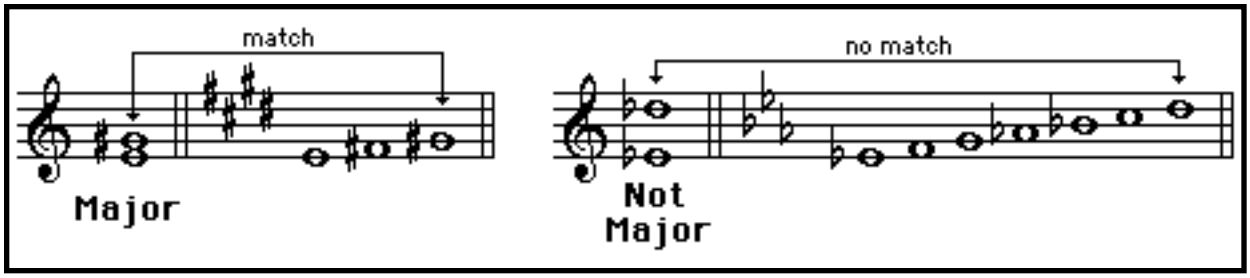


FOLLOW directions for the previous page except write the key signatures in treble clef.



Date:_____

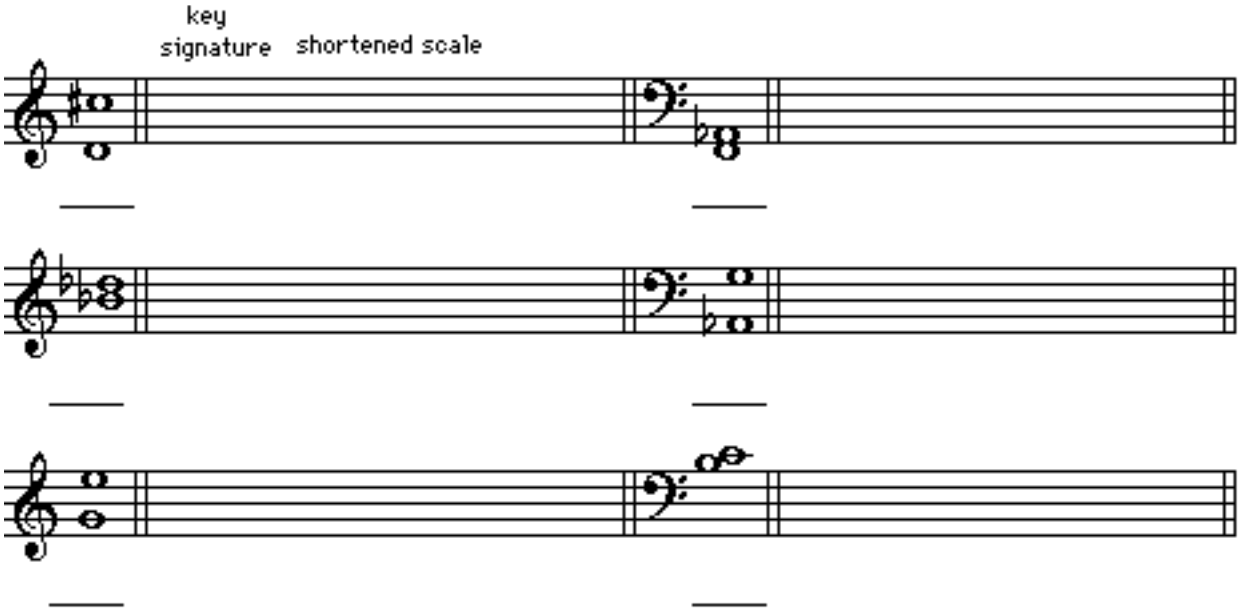
8.4 Identify major intervals by writing scales



• A major interval is an interval of a 2nd, 3rd, 6th or 7th in which the top note is in the scale (or key) of the bottom note.
In the illustration above E to G# is a major interval because G# occurs in the E scale. E♭ to D♭ is not a major interval because D♭ does not occur in the E♭ scale. D natural occurs in that scale instead.

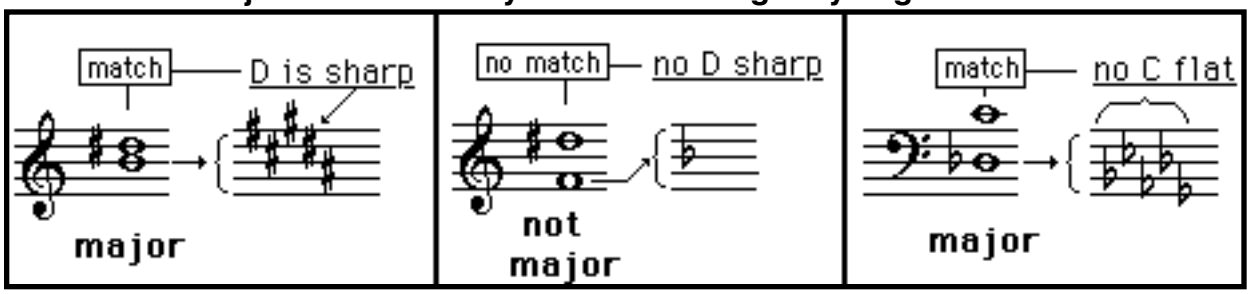
---

1. WRITE the key signature for the bottom note of each interval.
2. WRITE a shortened major scale for the bottom note. Write the scale only up to the letter name of the top note of the interval.
3. Under the interval, WRITE "M", for major, if the top note of the shortened scale matches the top note of the interval, OR WRITE "NM", for not major, if the top note of the shortened scale does not match the top note of the interval.



Date: _____

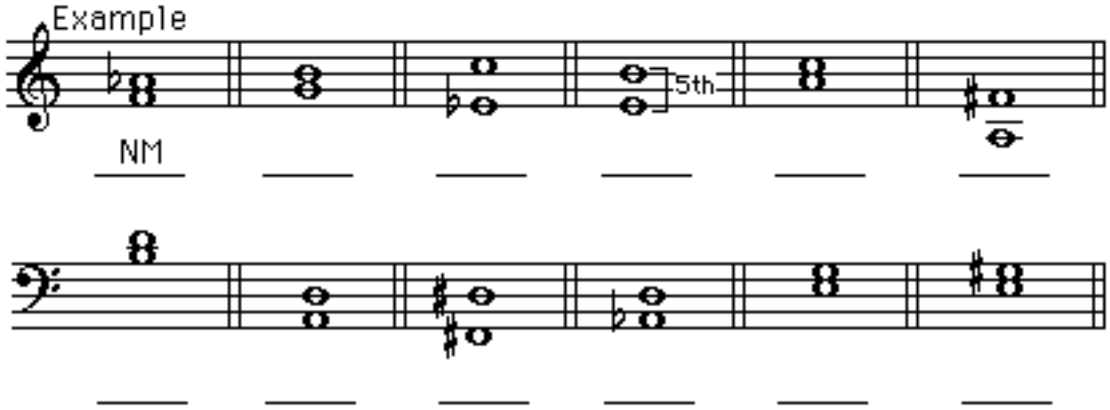
8.5 Write major intervals by remembering key signatures



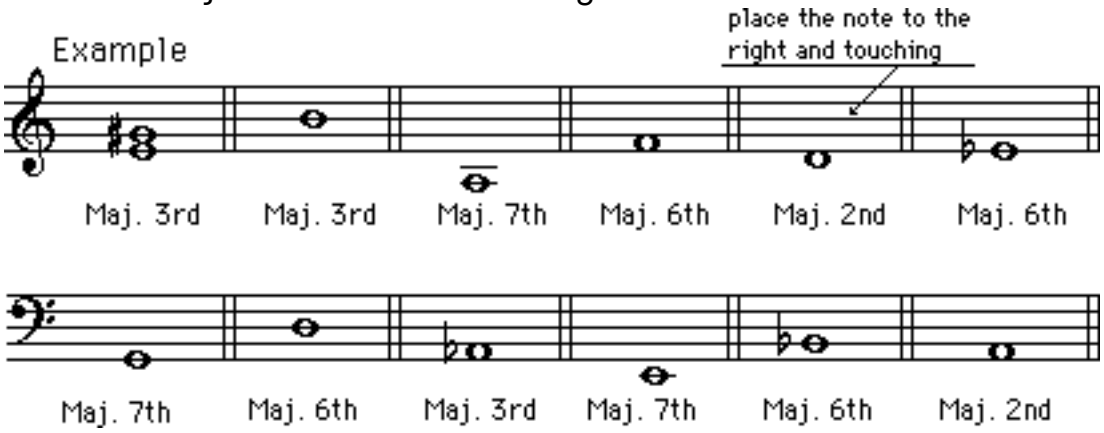
- To quickly find if an interval is major, remember the sharps and flats in the key signature of the bottom note. Then decide if the top note of the interval occurs in that scale.
- Only 2nds, 3rds, 6ths and 7ths can be major.
  Fourths, 5ths and octaves are never major.

---

1. IDENTIFY these intervals as major (M) or not major (NM).

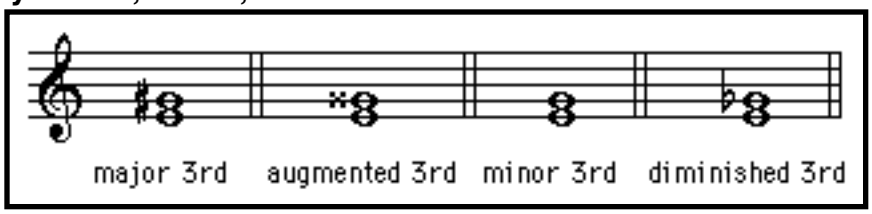


2. WRITE major intervals above the given note.



Date:_____

8.6 Identify 2nds, 3rds, 6ths and 7ths



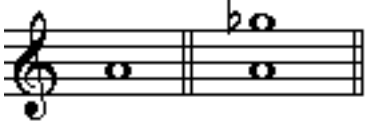
Compared to a major interval with the same letter names...

- an augmented interval is a half-step larger
- a minor interval is a half-step smaller, and
- a diminished interval is two half-steps smaller.

IDENTIFY the interval on the right side of each problem:

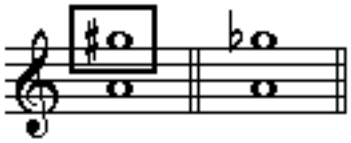
1. WRITE a major interval above the note on the left.
2. COMPARE the interval on the right to the major one you just wrote.

Sample Problem



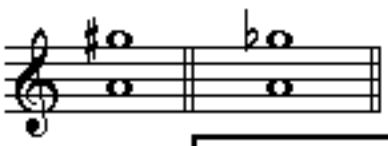
Maj. 7th _____

STEP 1.

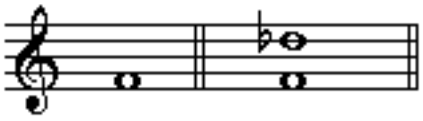


Maj. 7th _____

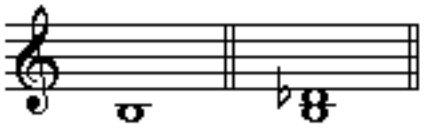
STEP 2.



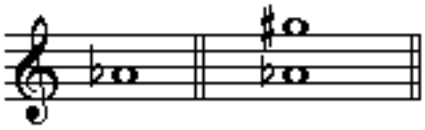
Maj. 7th *dim. 7th*



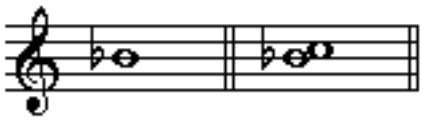
Maj. 6th _____



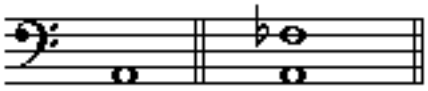
Maj. 3rd _____



Maj. 7th _____



Maj. 2nd _____

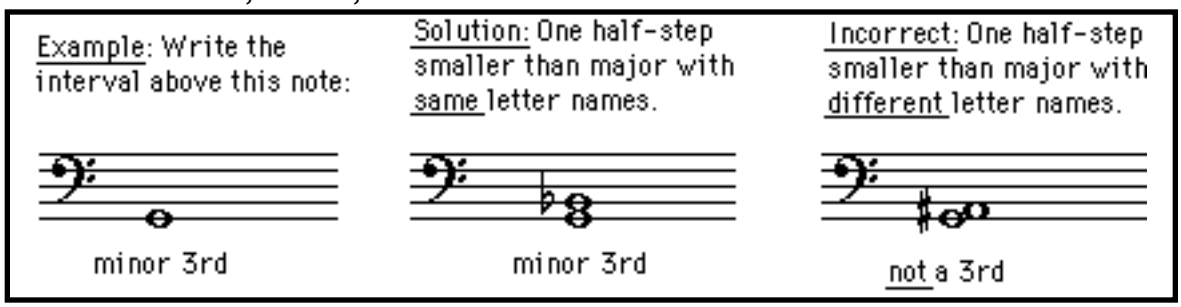


Maj. 6th _____

Maj. 3rd _____

Date: _____

8.7 Write 2nds, 3rds, 6ths and 7ths



- To write an augmented, minor or diminished interval above a 2nd, 3rd, 6th or 7th:
  1. find the major interval above the note
  2. adjust the top note, without changing the letter name, to make the interval larger or smaller.

---

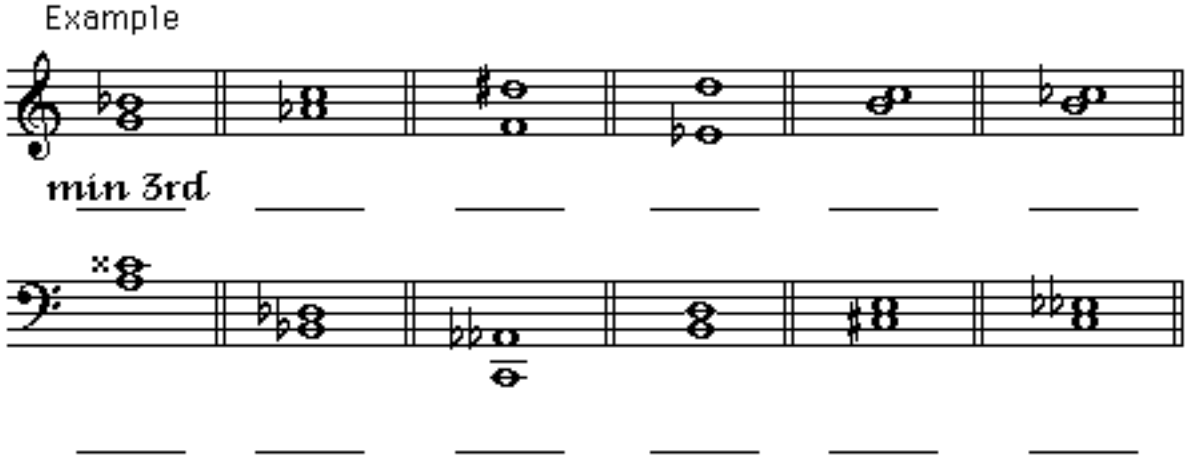
1. REVIEW this vocabulary:

a. An interval one half-step larger than major is _____

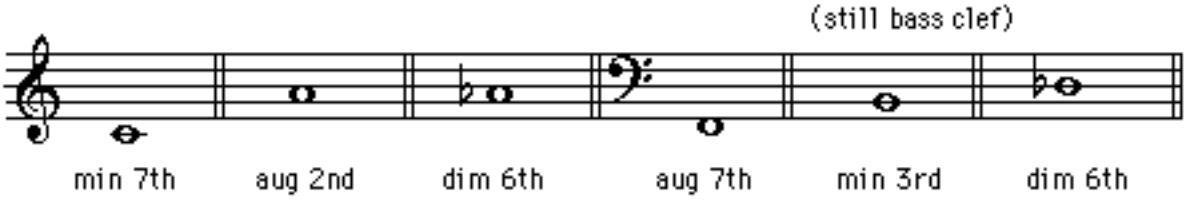
b. An interval one half step smaller than major is _____

c. An interval two half-steps smaller than major is _____

2. REVIEW IDENTIFYING intervals:



2. WRITE the top note of these intervals.



Date:_____

8.8 Identify 4ths, 5ths and 8ves

REVIEW	2nds 3rds 6ths & 7ths	Description	4ths, 5ths and 8ves	NEW
	augmented	one half-step larger than major or perfect	augmented	
	major	the top note is in the scale of the bottom note	perfect	
	minor	one half step smaller than major or perfect	diminished	
	diminished	two half-steps smaller than major or perfect		

• A perfect interval is a 4th, 5th or 8ve in which the top note is in the scale (or key) of the bottom note.

Compared to a perfect interval with the same letter names...

• an augmented interval is a half-step larger than the perfect interval

• a diminished interval is a half-steps smaller than the perfect interval

Notice from the above chart that:

"diminished" means one half step smaller than perfect, BUT

"diminished" means two half steps smaller than major.

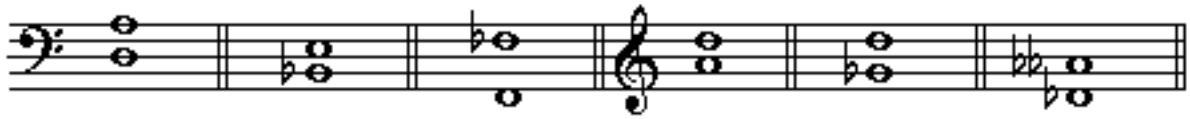
"perfect" is never used for 2nds 3rds 6ths and 7ths AND

"major" and "minor" are never used for primes, 4ths, 5ths and 8ves.

"perfect" means the same as "major" except "perfect" is only used for 4ths, 5ths and 8ves.

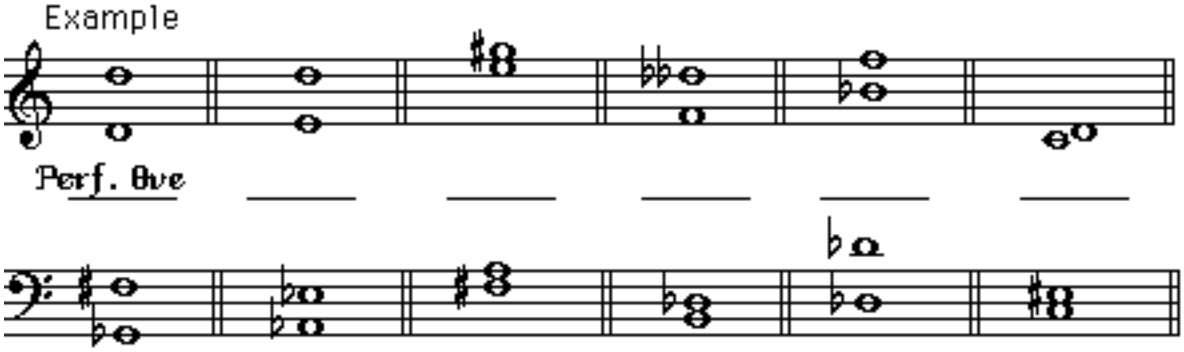
---

1. IDENTIFY these 4ths 5ths and 8ves:



_____ _____ _____ _____ _____ _____

2. IDENTIFY these intervals:



_____ _____ _____ _____ _____ _____

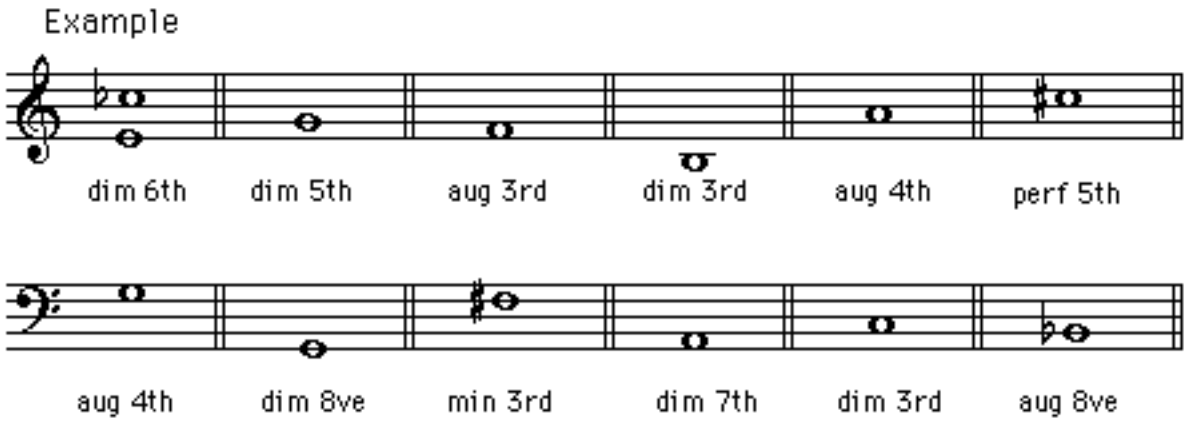
Date: _____

8.9 Write the top notes of intervals

1. FILL IN the blanks in this interval chart.

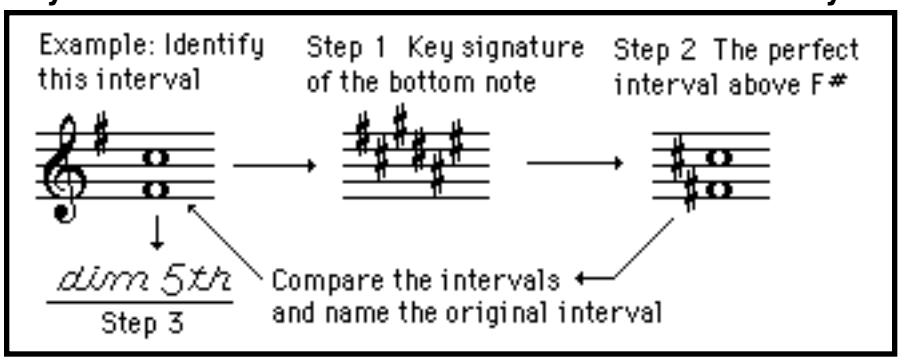
2nds 3rds 6ths & 7ths	Description	Primes, 4ths 5ths & 8ves
	one half-step larger than major or perfect	
	the top note is in the scale of the bottom note	
	one half step smaller than major or perfect	
	two half-steps smaller than major or perfect	

2. WRITE the top notes of these intervals:



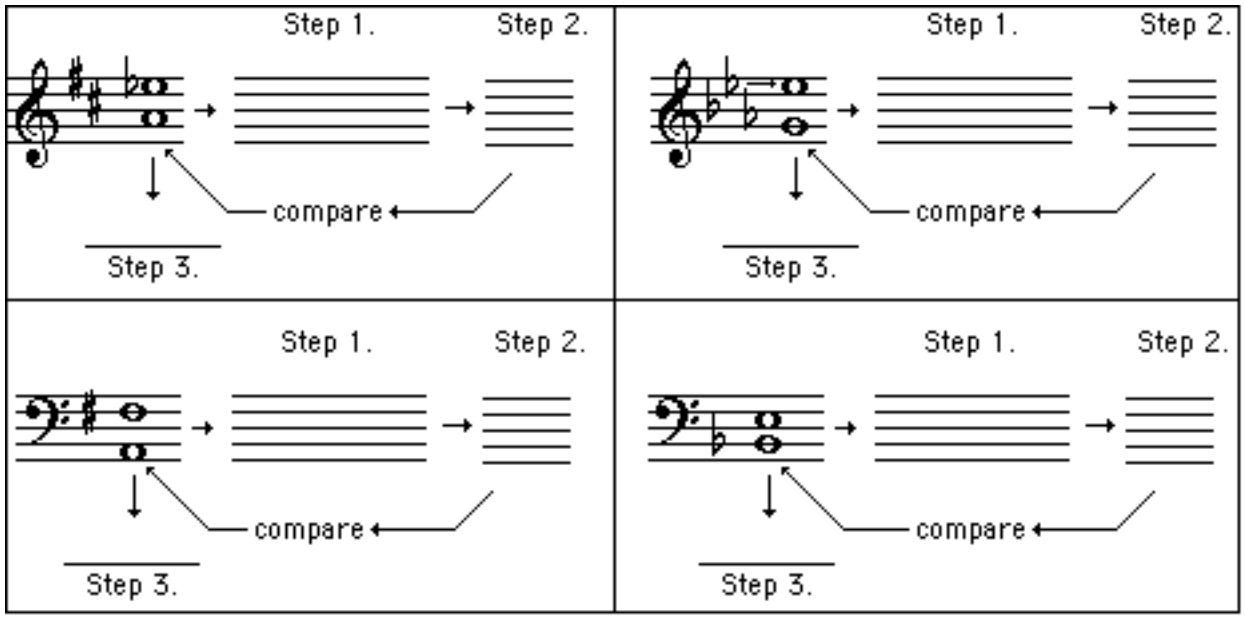
Date:_____

8.10 Identify intervals whose bottom notes are not key notes



- When intervals occur in music, they do not usually have bottom notes which are the key notes of the piece. That is, the key signature of the piece is not usually the key signature of the bottom note.
- To identify an interval whose bottom note is not a key note:
    1. Write a new key signature--the key signature of the bottom note. Remember that notes may be sharp or flat as a result of the key signature.
    2. Find the major or perfect interval above the bottom note.
    3. Compare the intervals and name the original interval.

IDENTIFY these intervals:



Date: _____

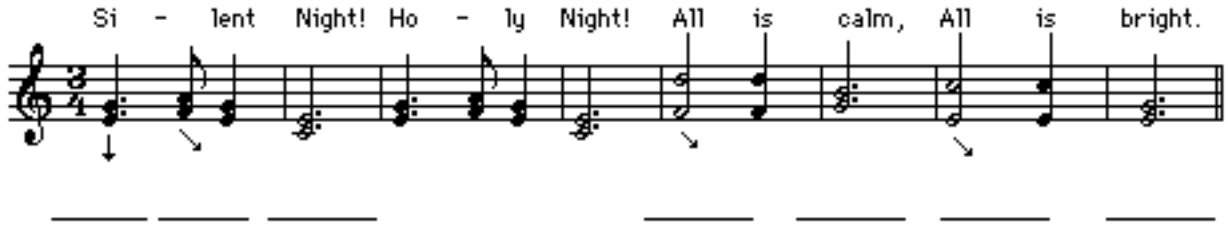
8.11 Identify intervals in musical phrases

- When intervals appear in a piece of music, identify the intervals by using the key of the bottom note, not the key of the piece.
- Specific names of intervals may be abbreviated as follows:

A = augmented	M = major
P = perfect	m = minor
d = diminished	

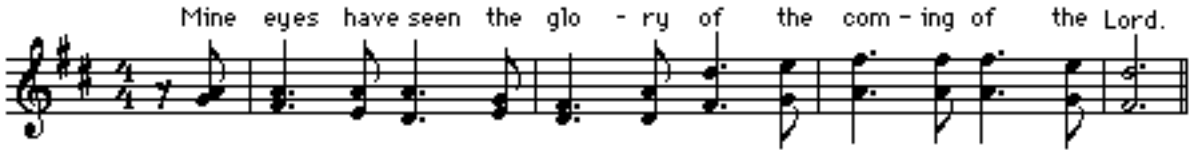
---

1. IDENTIFY the intervals in this version of "Silent Night."



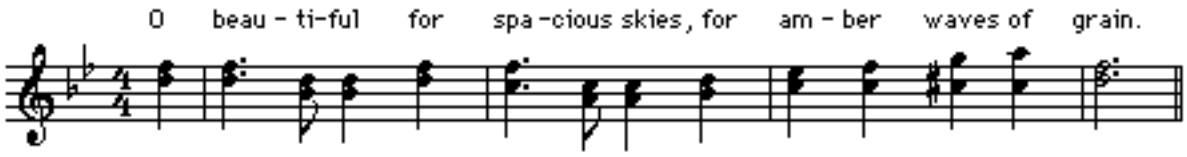
_____ _____ _____ _____ _____ _____ _____

2. IDENTIFY the intervals in this version of "The Battle Hymn of the Republic."



___ ___ ___ ___ ___ ___ ___ ___ ___ ___

3. IDENTIFY the intervals in this version of "America the Beautiful."

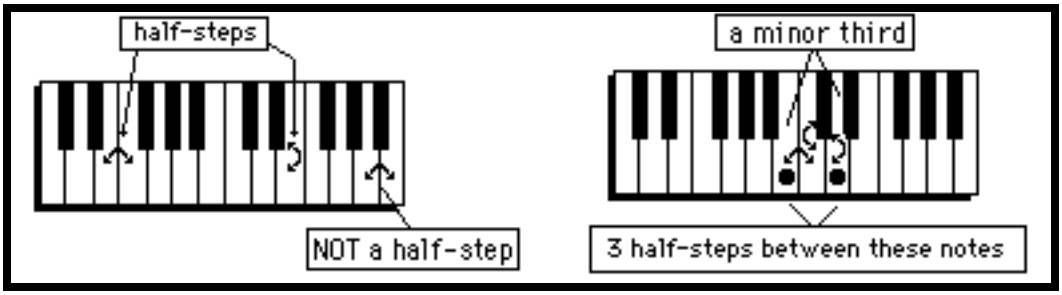


____ _____ _____ _____ _____ _____

Chapter 9 More about thirds and minor keys

In this chapter you will:

1. Count the half-steps in major and minor thirds
2. Write major and minor thirds
3. Identify and write 3rds with key signatures
4. Write relative major and minor key signatures
5. Write minor scales
6. Write minor key signatures and scales
7. Write minor keys on the circle of fifths



9.1 Count the half-steps in major and minor thirds

- Recall from Book 1 that a half-step is the distance between two notes which have no notes in between on the keyboard, whether black or white (worksheet 4.1).
- A major third always has a distance of 4 half steps
- A minor third always has a distance of 3 half-steps.

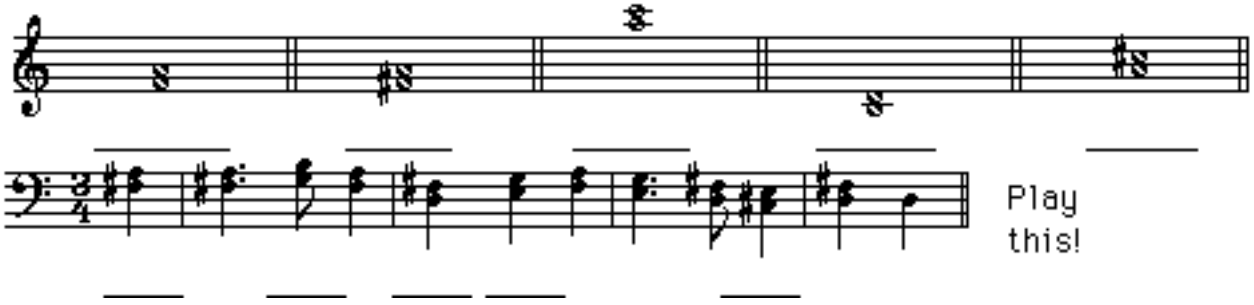
---

1. WRITE the number of half-steps between the notes marked with dots.

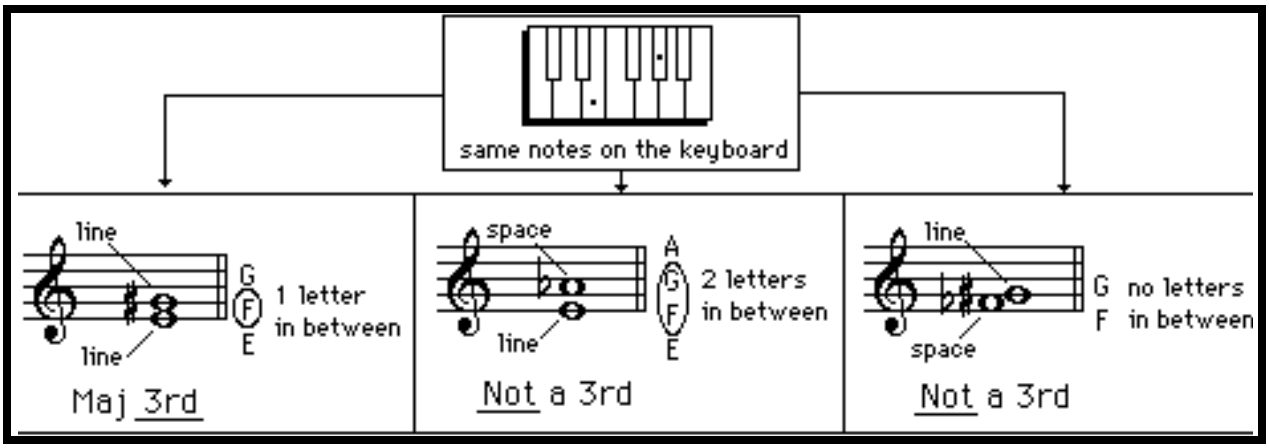
How many? _____ _____ _____

2. WRITE letter names on the white keys of this keyboard.

3. IDENTIFY these thirds as major or minor by counting half steps on the above keyboard.



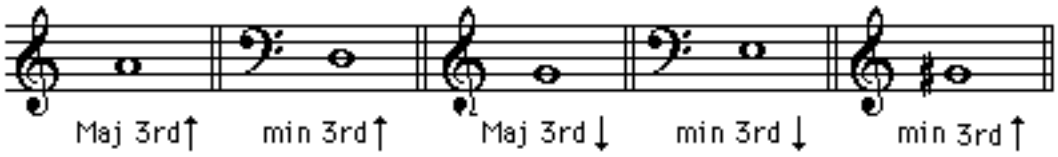
9.2 Write major and minor thirds



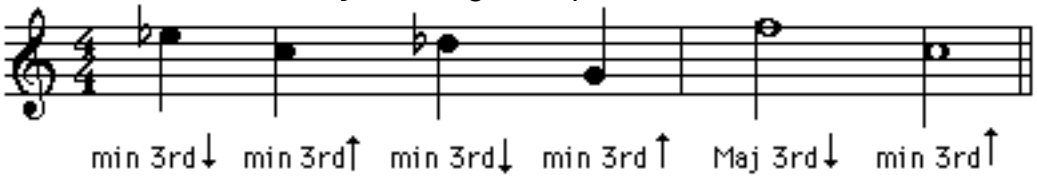
- The distance of a third on the staff is always line to line or space to space.
- There is one and only one letter between the two letter names in a third.
  All three intervals in the above example are played the same and sound the same. Yet only the first interval is written as a third.
- When writing thirds by figuring out half steps,
  first write the noteheads as thirds
  then add sharps or flats

---

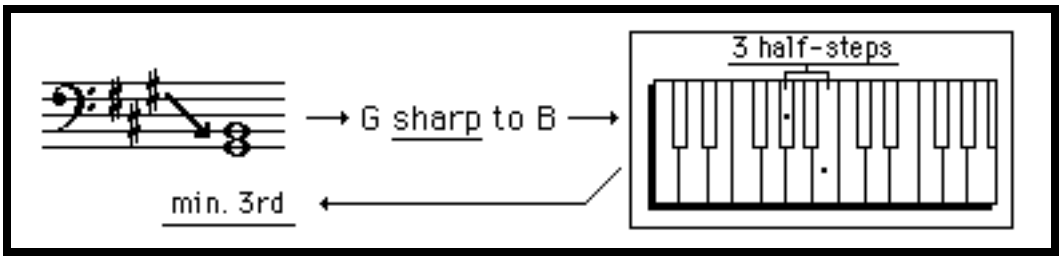
1. WRITE the missing notes for each third. Find them by counting half-steps on the keyboard on the previous page.
   A down arrow means write a note below the given note.
   An up arrow means write a note above the given note.



2. WRITE the noteheads next to the stems in this tune.
   FILL THEM IN if you are given quarter notes.



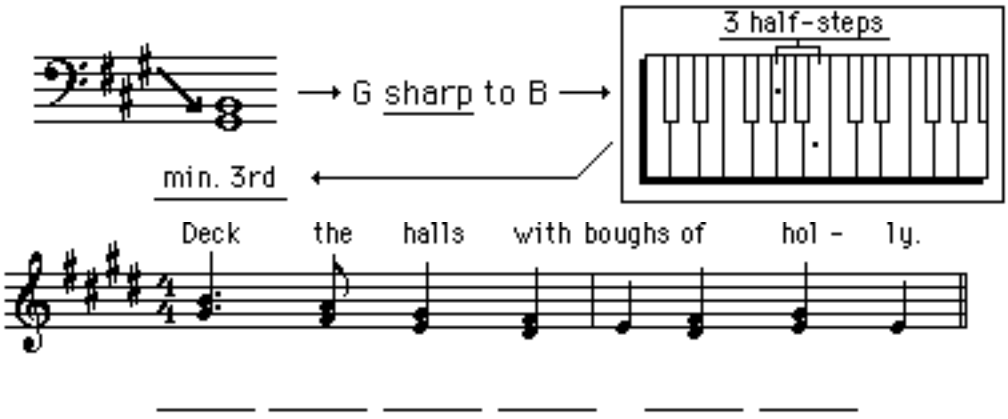
9.3 Identify and write 3rds with key signatures



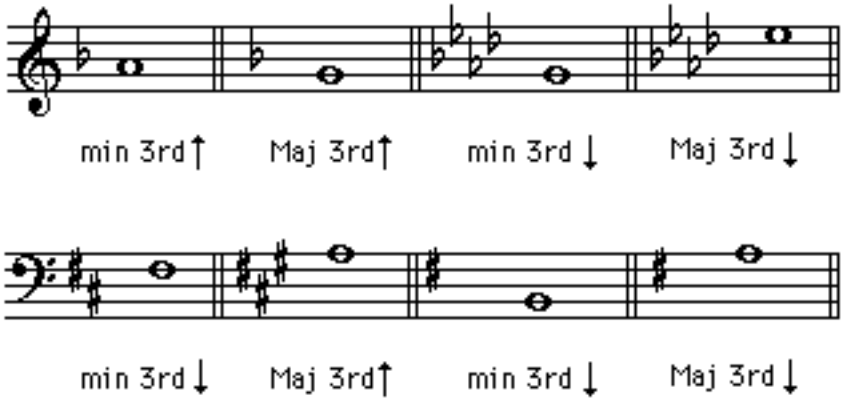
- Recall that the sharps and flats in a key signature alter the notes on the staff.
- To cancel a sharp or flat which appears in the key signature, use a natural sign, , next to the note.

---

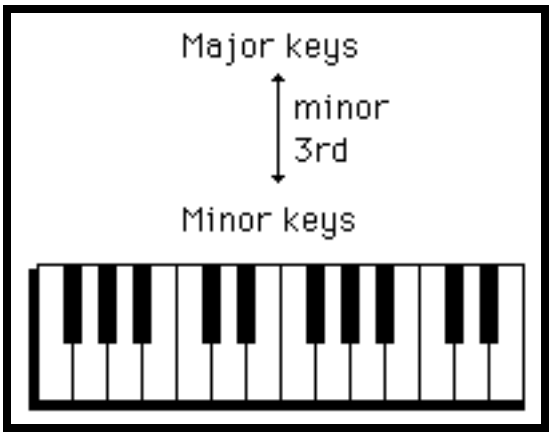
1. IDENTIFY these thirds as major or minor. Use the keyboard above.



2. WRITE these thirds.



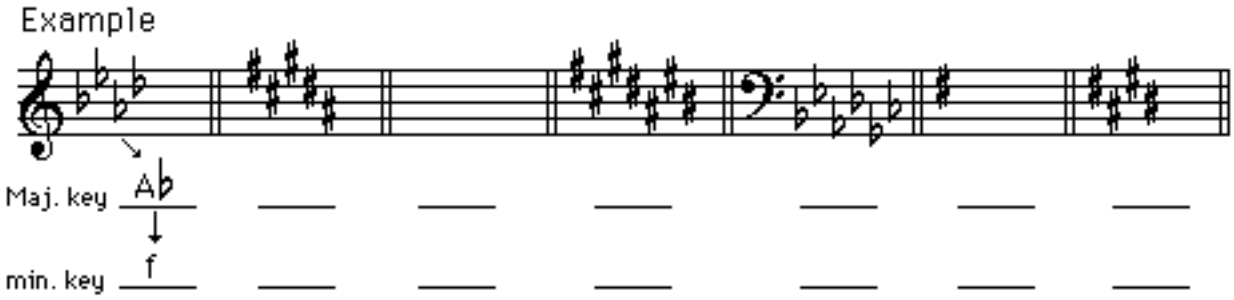
9.4 Write relative major and minor keys



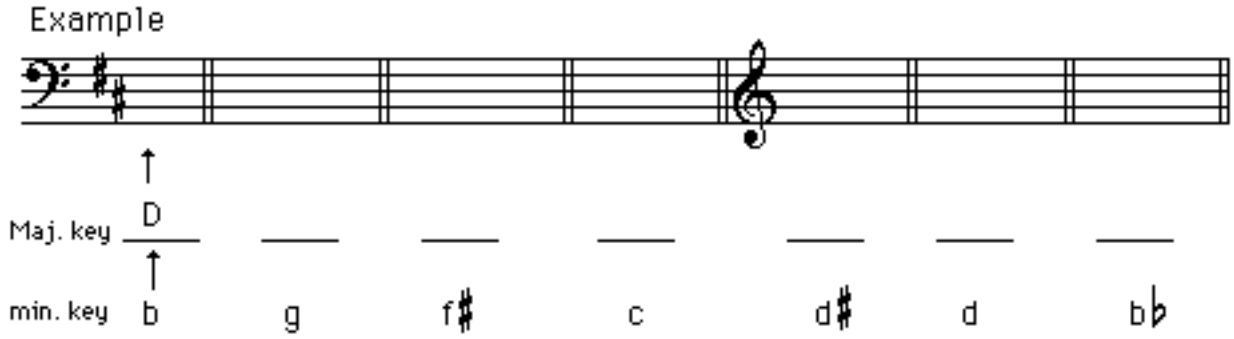
• Minor keys are a minor third below their relative major keys.
Recall from Book 1 (Worksheet 6.8) that minor keys are three half-steps and three letter names below their relative major keys. In this chapter this distance has been named a minor third.

---

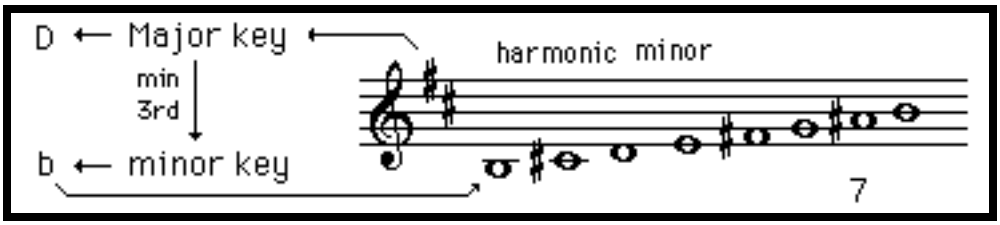
1. WRITE the major and minor keys for each key signature. Write the major keys with capital letters and the minor keys lower case.



2. WRITE the major key and the key signature for each minor key.



9.5 Write minor scales



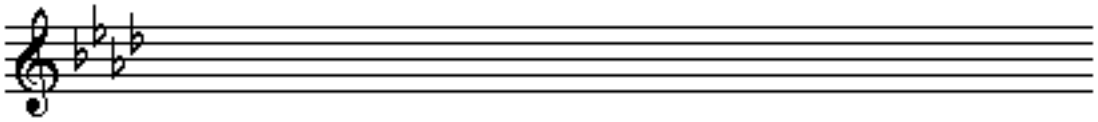
- To write a minor scale given the key signature:
    1. find the major key
    2. go down a minor third to find the relative minor key (and key note)
- Recall from Book 1 that:

in natural minor scales, the notes conform to the key signature
in harmonic minor scales, scale degree 7 is raised a half-step
in melodic minor scales, scale degrees 6 and 7 are raised a half-step
when the scale goes up, and they are lowered to match the key signature when the scale comes down

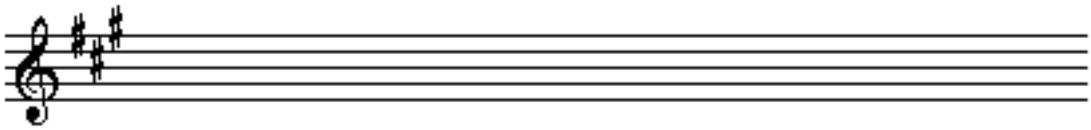
---

WRITE these minor scales.

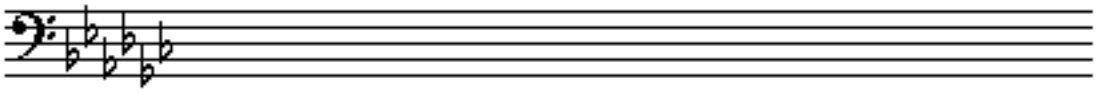
natural minor



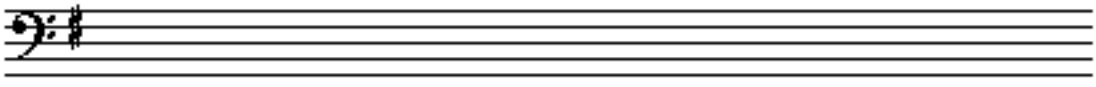
melodic minor



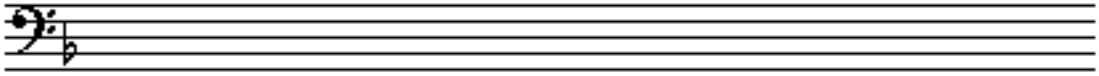
harmonic minor



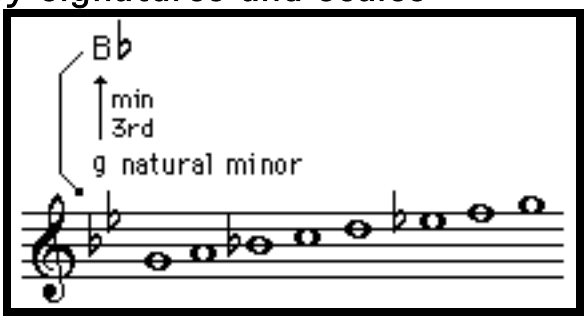
natural minor



melodic minor



9.6 Write minor key signatures and scales

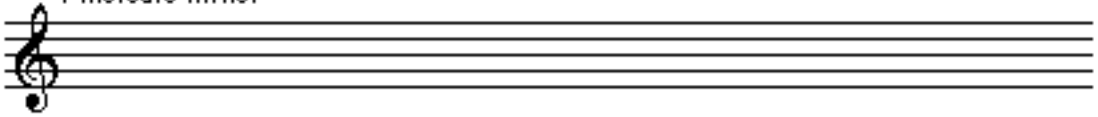


- To write a minor scale given the minor key:
    1. find the relative major key by going up a minor third
    2. write the key signature and scale beginning on the minor key note

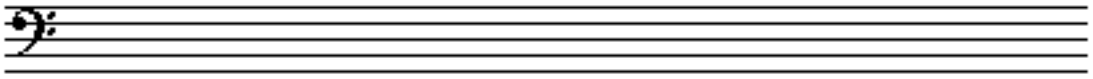
---

WRITE these minor scales

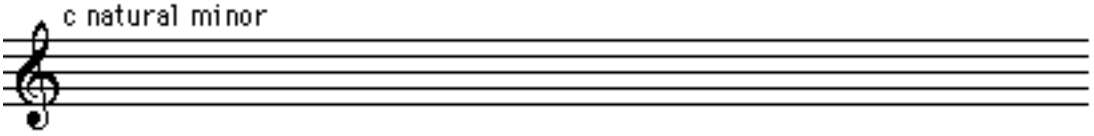
f melodic minor



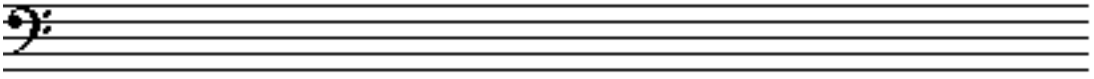
f♯ harmonic minor



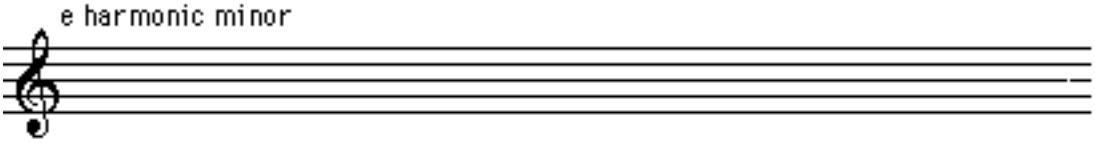
c natural minor



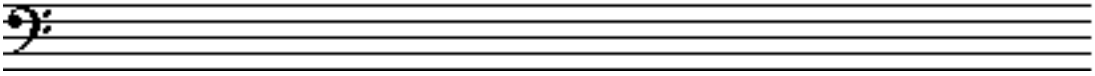
g♯ melodic minor



e harmonic minor

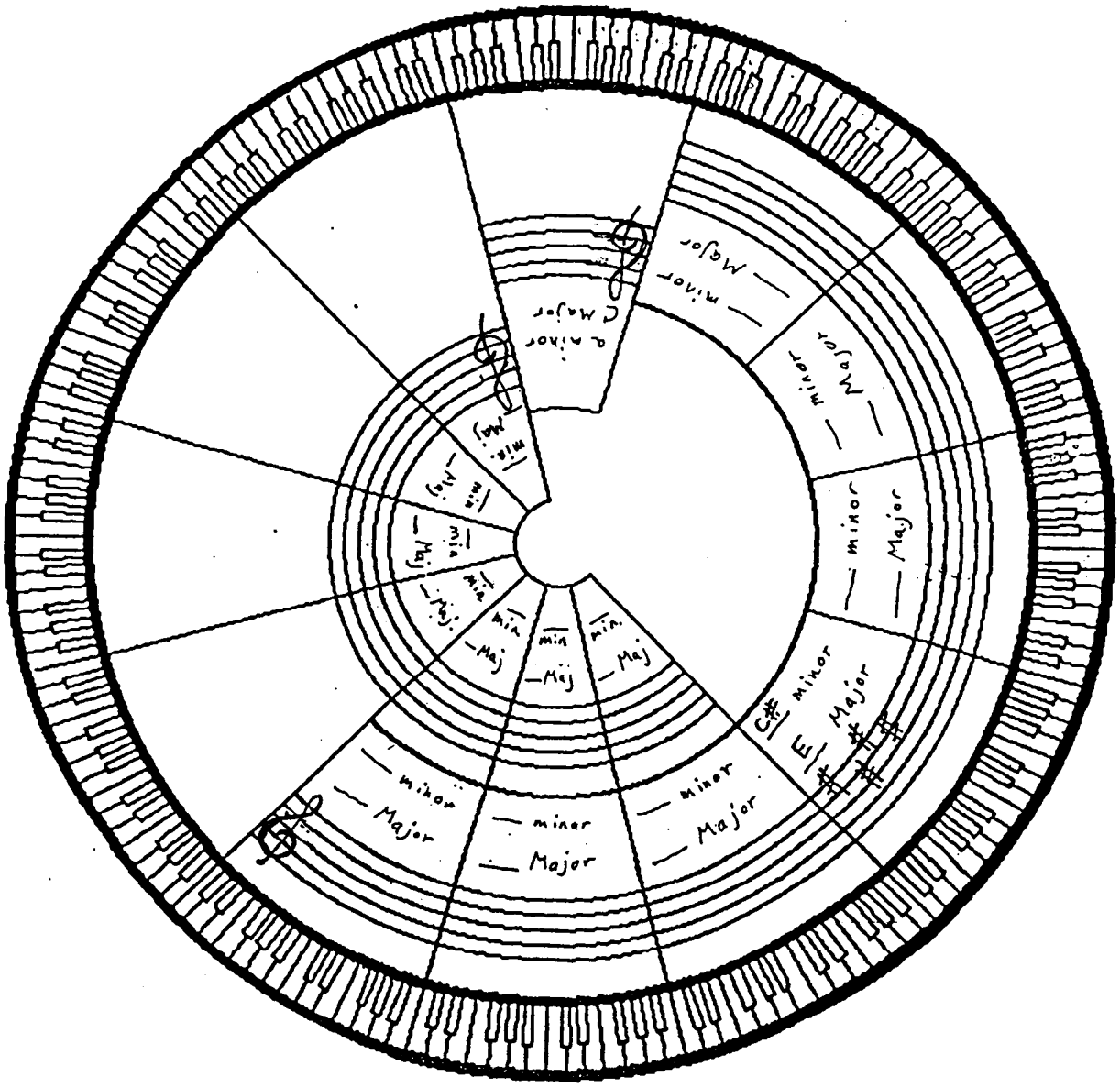


e♭ natural minor



9.7 Write minor keys in the circle of fifths

WRITE the major keys, minor keys and key signatures on this circle of fifths.

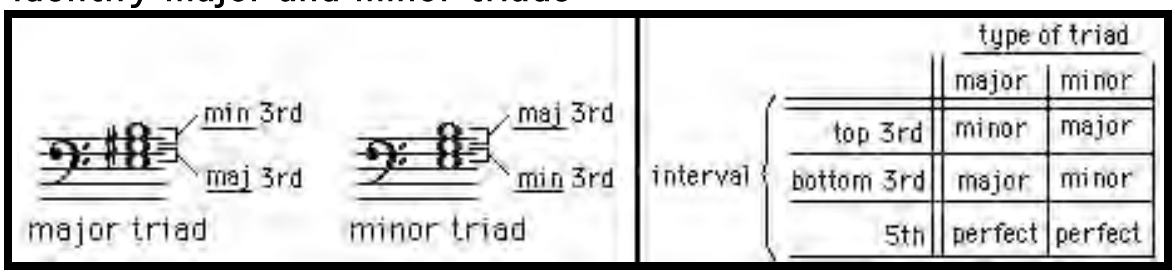


Chapter 10 Triads

In this chapter you will:

1. Identify major and minor triads
2. Write major and minor triads
3. Identify all four types of triads
4. Identify triads by sound and write triads given the root
5. Identify triads with key signatures
6. Write triads given the third or fifth
7. Review the four triads

10.1 Identify major and minor triads



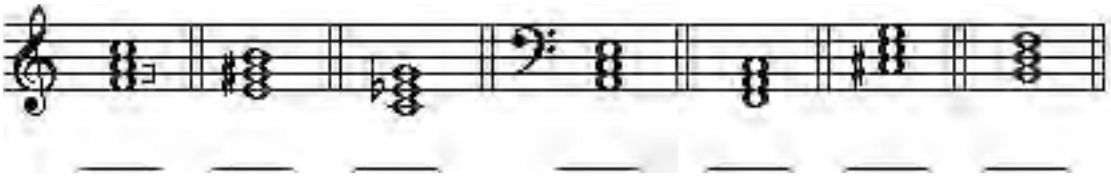
interval	type of triad: major	type of triad: minor
top 3rd	minor	major
bottom 3rd	major	minor
5th	perfect	perfect

- A chord is three or more notes played together.
- A triad is a three note chord which is written in thirds.
- There are four types of triads. This worksheet presents two of these:
- A major triad has a major third on the bottom and a minor third on top.
- A minor triad has a minor third on the bottom and a major third on top.

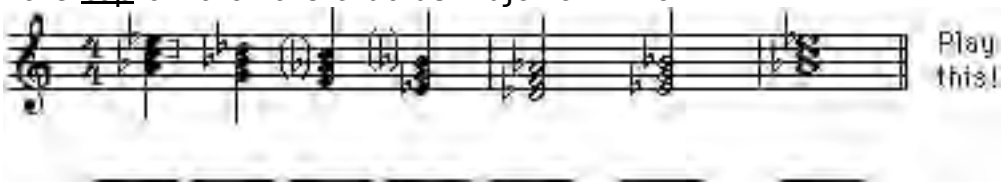
The 5ths, from the bottom notes to the top notes, in both triads are perfect, so 5ths cannot be used to distinguish these two triads.
"Major" and "minor" are used to describe both intervals and triads.
Major and minor triads are named after their bottom thirds.

---

1. IDENTIFY the bottom third of the triad as major or minor.

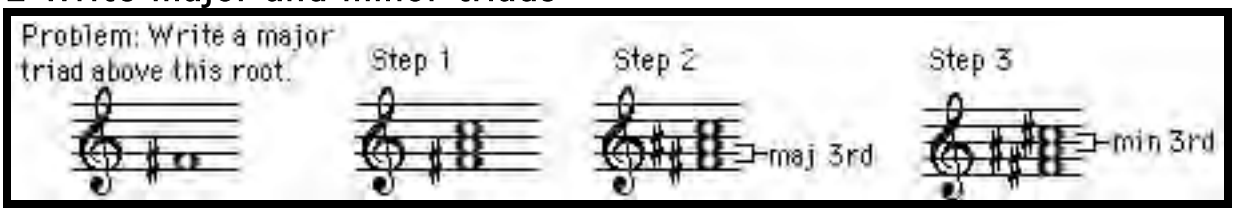


2. IDENTIFY the top third of the triad as major or minor.



3. IDENTIFY the triad as major or minor.

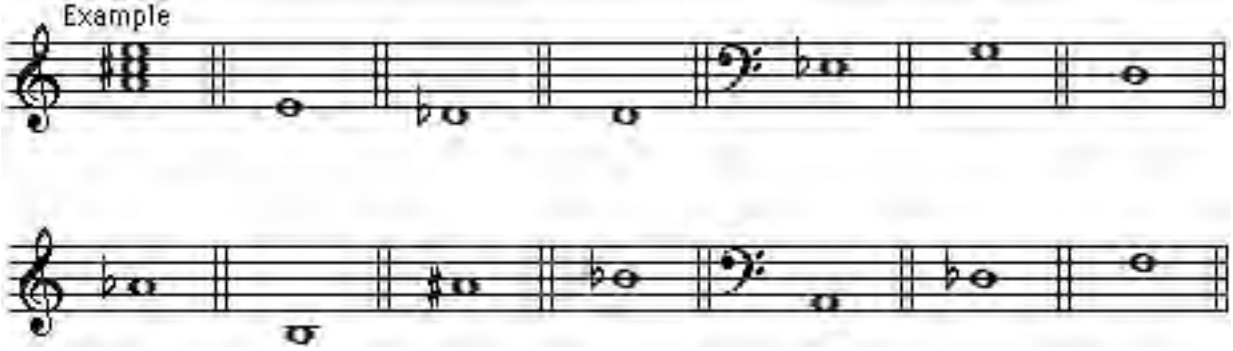
10.2 Write major and minor triads



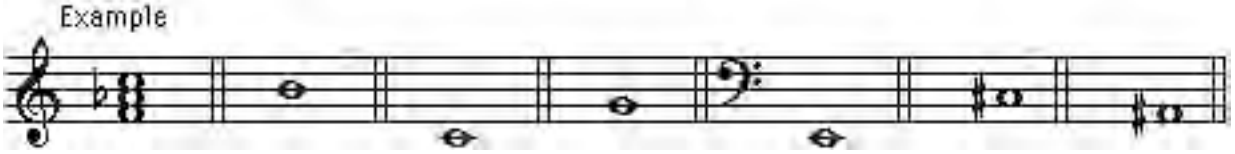
- The bottom note of a triad is called the root.
- To write major and minor triads given the root:
  1. First write two noteheads above the root in thirds.
  2. Alter the middle note if necessary to make the bottom third major (for a major triad), or minor (for a minor triad).
  3. Alter the top note if necessary to make the top third minor (for a major triad), or major (for a minor triad).

---

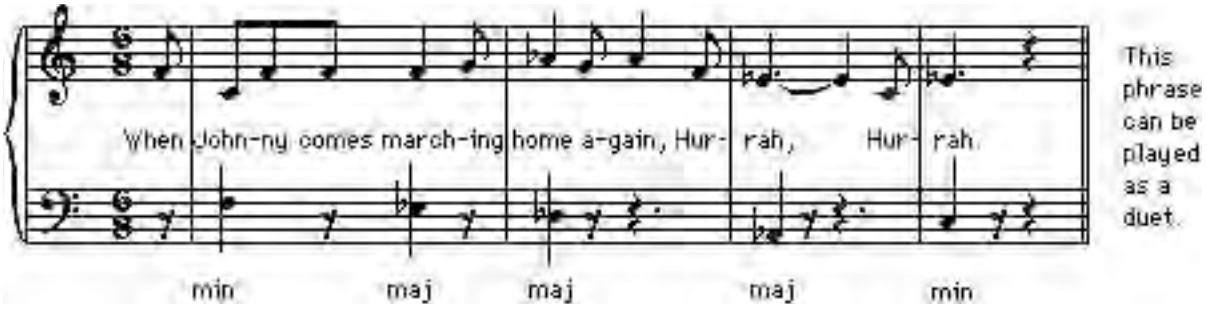
1. WRITE major triads above these roots.



2. WRITE minor triads above these roots.



3. WRITE triads on the bottom staff as indicated.



10.3 Identify all four types of triads

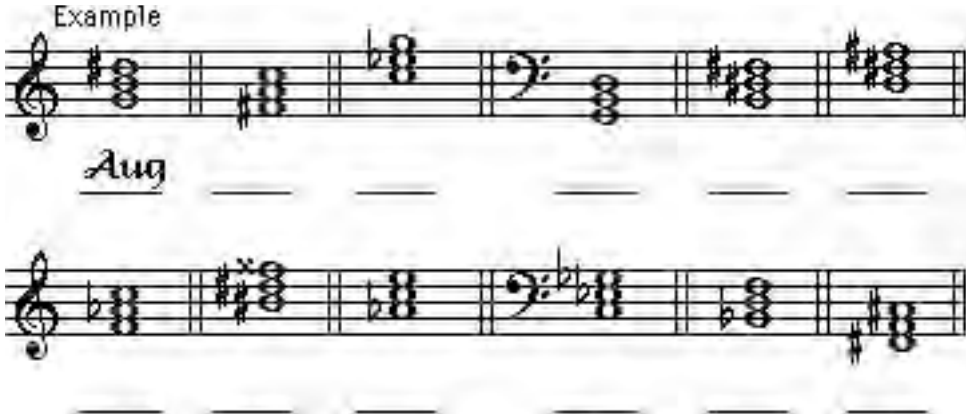
		TYPE OF TRIAD (with distances in half-steps)			
		Major	Minor	Diminished	Augmented
Interval:	Top 3rd	minor (3)	major (4)	minor (3)	major (4)
	Bottom 3rd	major (4)	minor (3)	minor (3)	major (4)
	5th	perfect	perfect	diminished	augmented

- Diminished triads have two minor thirds and a diminished fifth.
- Augmented triads have two major thirds and an augmented fifth.
- Diminished and augmented triads are named after their fifth. (Recall that major and minor triads are named after their bottom third.)
- All four types of triads can be distinguished by their thirds alone. Recall that minor thirds are 3 half-steps and major thirds are 4 half-steps.

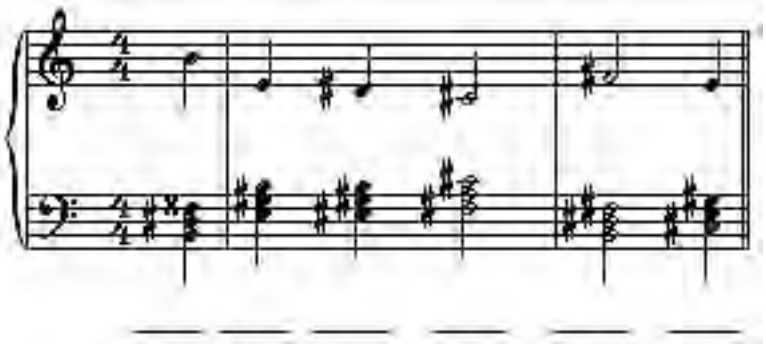
---

1. MEMORIZE the chart above.

2. IDENTIFY these triads BY COUNTING half-steps on the keyboard below.



3. IDENTIFY the triads on the bottom staff.



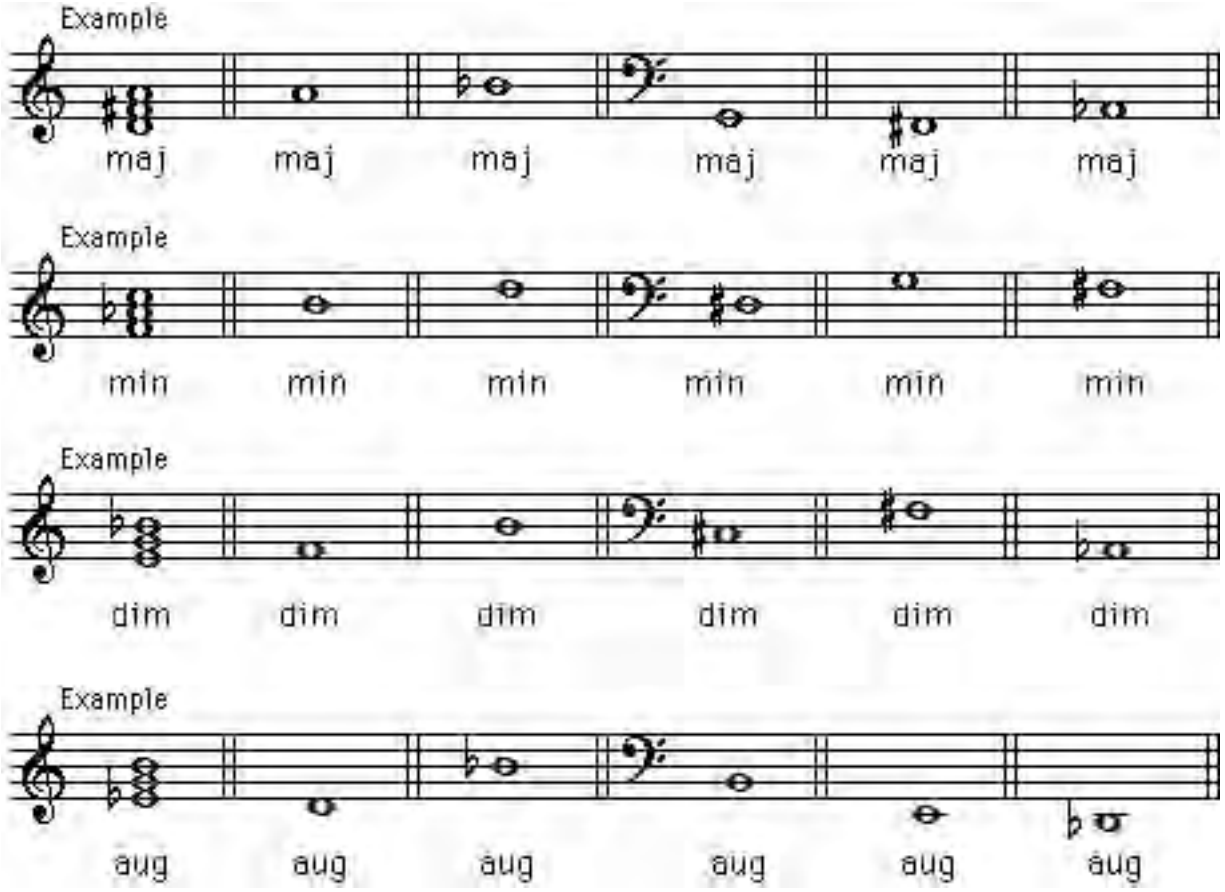
10.4 Identify triads by sound and write triads given the root

- To identify triad types by their sound, these associations might be helpful:
  - Major: Birthday party
  - Minor: Funeral
  - Diminished: Halloween
  - Augmented: Science Fiction Film
- Recall from worksheet 10.2 to write the noteheads in thirds <u>before</u> altering notes.

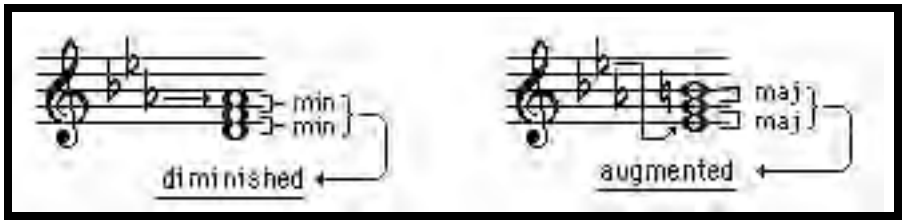
---

1. IDENTIFY triad types played by your teacher or friend.

2. WRITE triads above these roots.

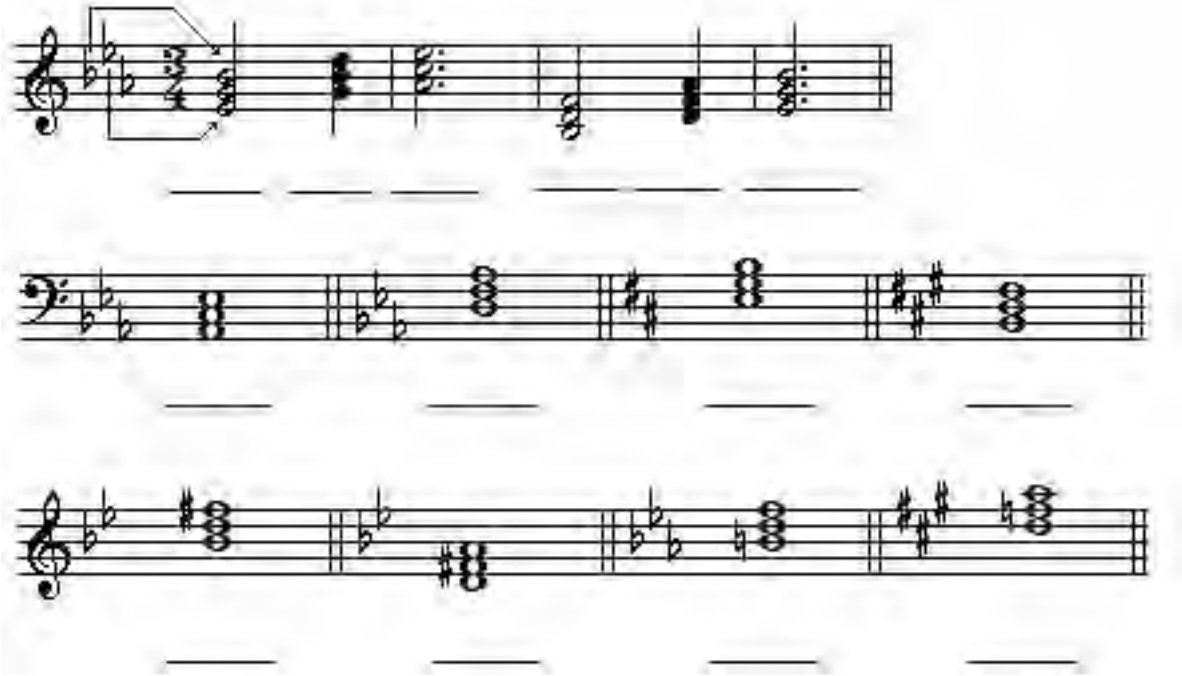


10.5 Identify types of triads with key signatures

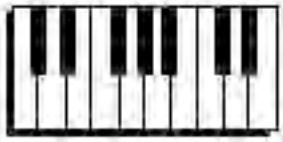


- Recall that the key signature will affect some notes on the staff.

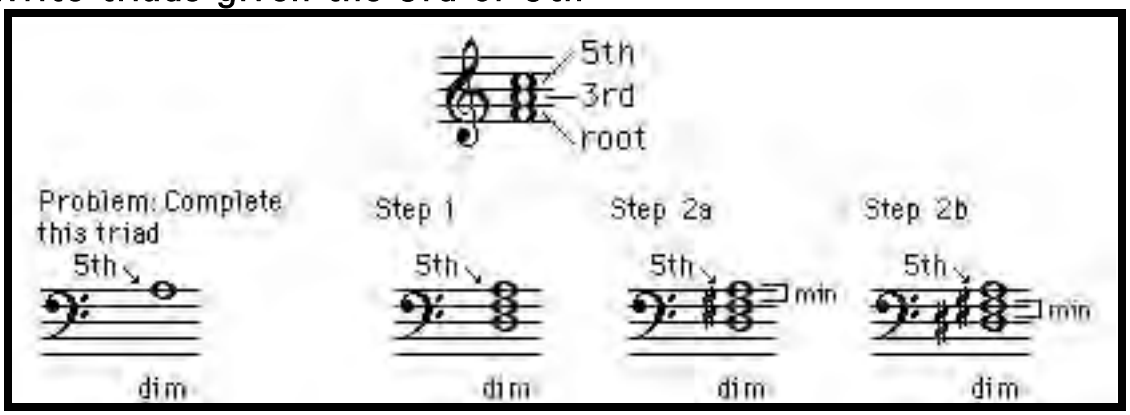
IDENTIFY these triads.



This keyboard is not the same as that on page 23.



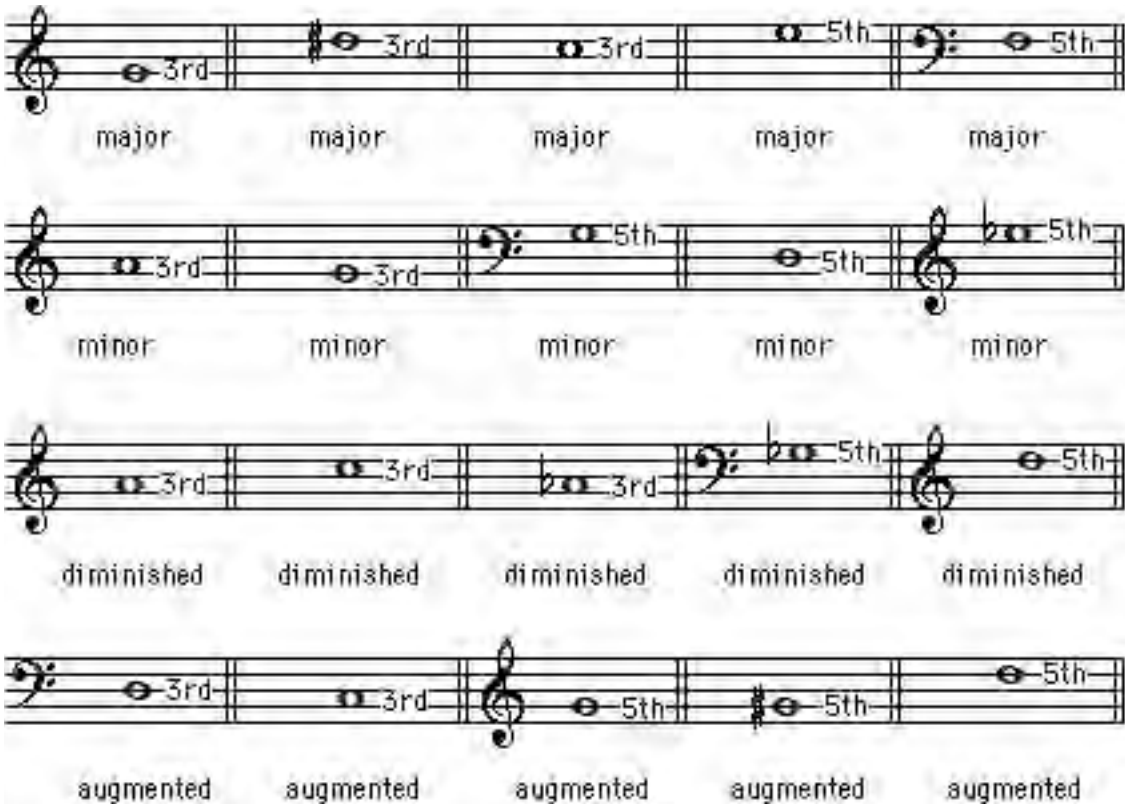
10.6 Write triads given the 3rd or 5th



- The middle note of a triad is called the 3rd. It is a 3rd above the root.
- The top note of a triad is called the 5th. It is a 5th above the root.
- To write a triad given the 3rd or 5th:

  1. Write the noteheads in 3rds. At least one notehead will be below the given note.
  2. Figure out major and minor thirds starting from the given note, not the root. Do not change the given note.

COMPLETE these triads. The given notes are either 3rds and 5ths.

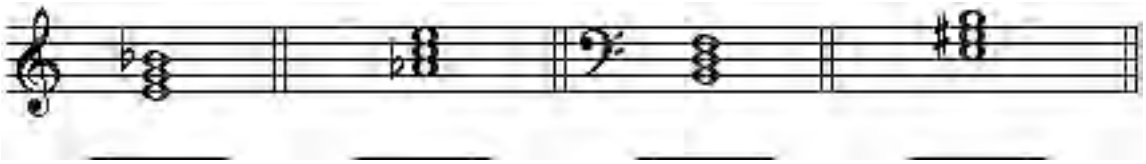


10.7 Review triad types

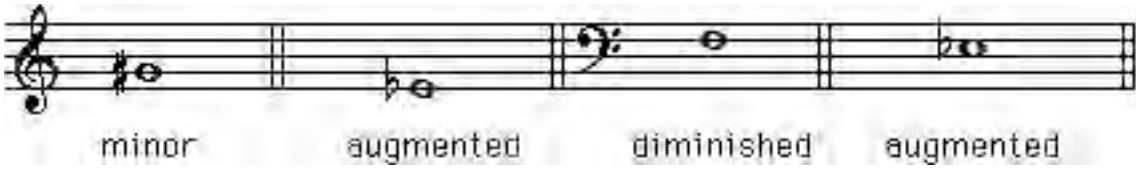
1. COMPLETE this chart.

		type of triad: major	minor	diminished	augmented
interval	top 3rd			minor	
	bottom 3rd				
	5th				

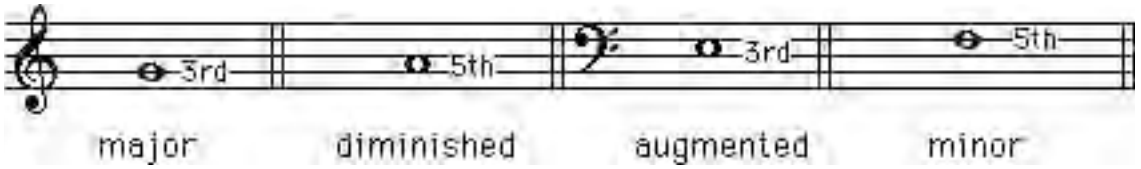
2. IDENTIFY these triads.



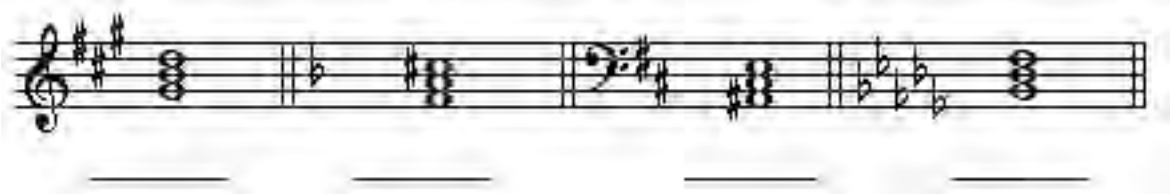
3. WRITE triads above these roots.



4. WRITE these triads given the 3rd or 5th.



5. IDENTIFY these triads.

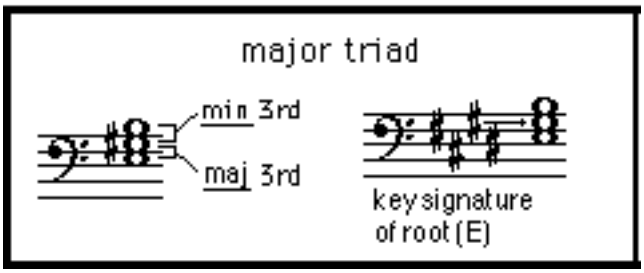


Chapter 10B Triads: Comparing Non-major Triads to Major Ones

In this chapter you will:

1. Review major triads	4. Write major triads quickly
2. Write major triads on the circle of fifths	5. Compare non-major triads to major ones
3. Group triads and relate the groups to each other	6. Review relationships between triads and their thirds

10B.1 Review major triads



• Once major triads are recognized quickly, other triads can be identified and written by comparing them to the major ones.

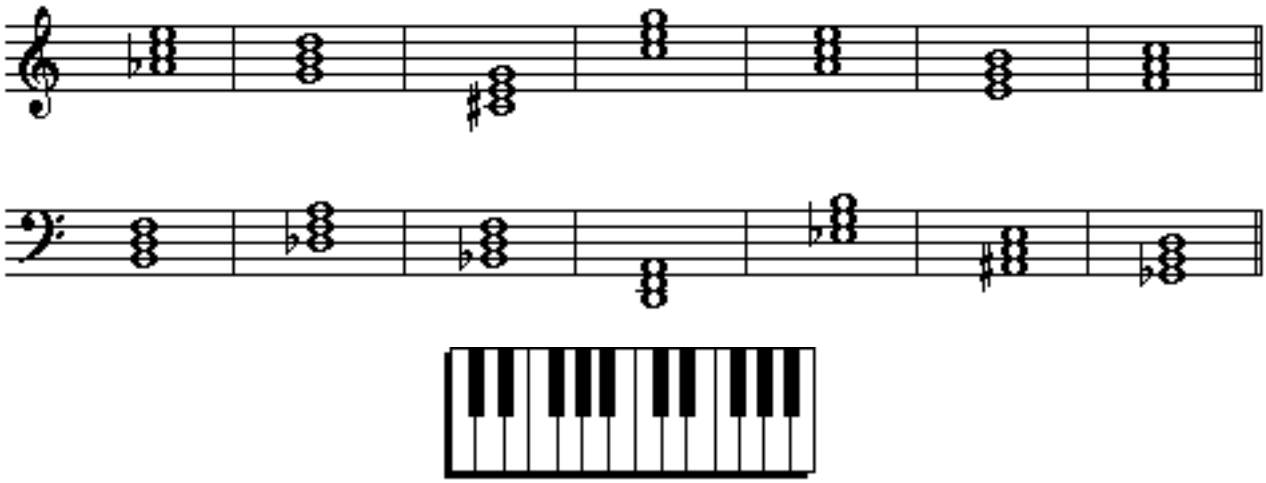
• Major triads:

1. have a major third on the bottom and a minor third on top (see Chapter 10) AND
2. have top notes that are in the major scale (or key) of the bottom note

These two definitions are equivalent.

ADD A SHARP OR FLAT TO THE THIRD OR FIFTH, where necessary, to make each triad MAJOR.

CIRCLE the triads that need no sharps or flats.

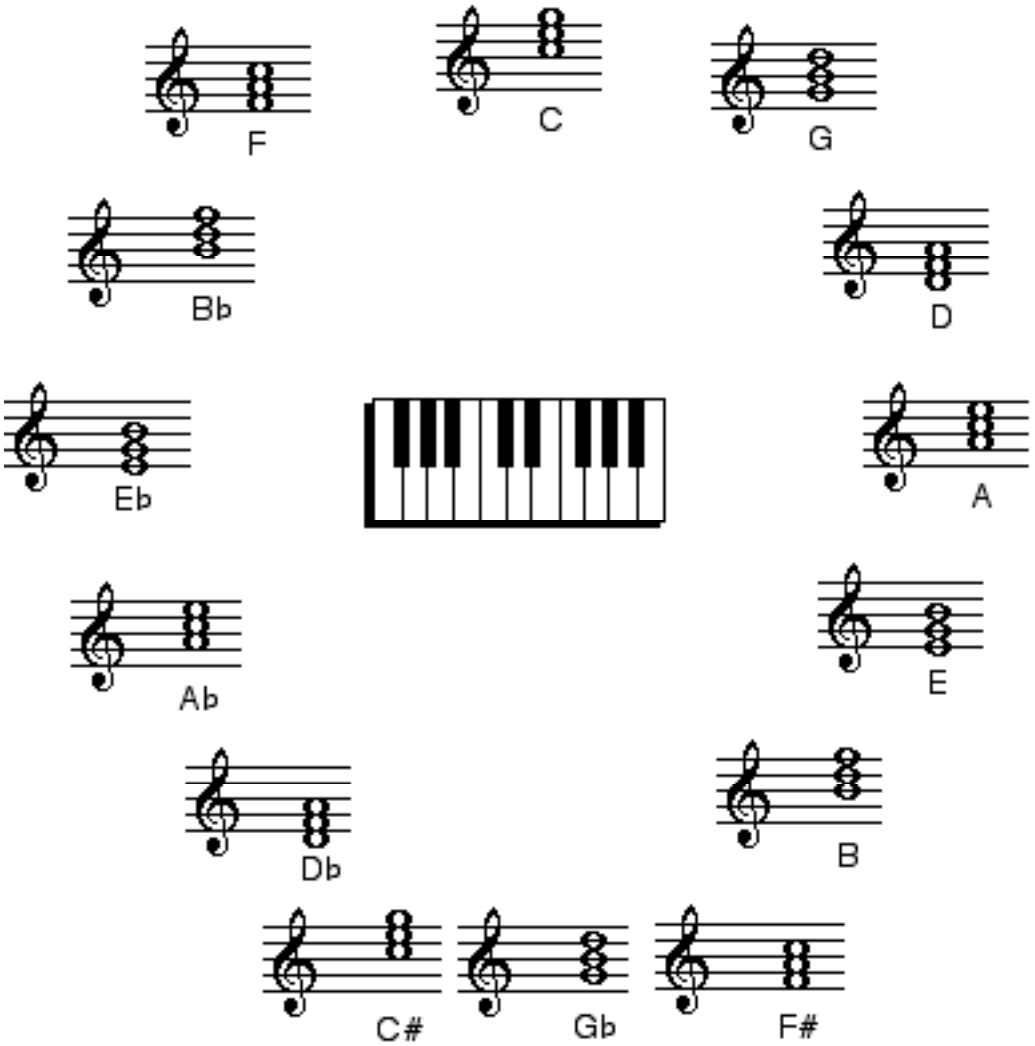


10B.2 Write major triads on the circle of fifths

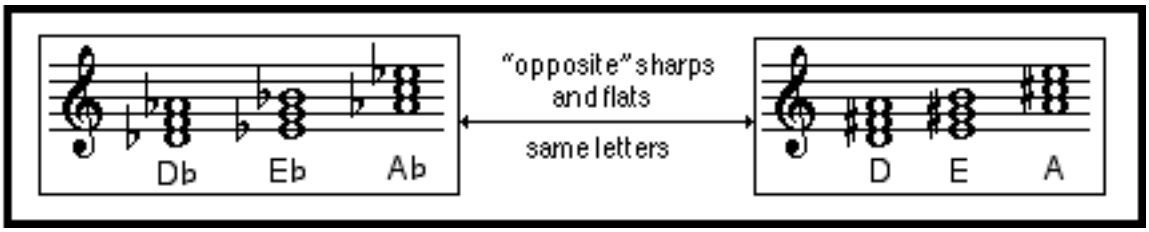
• Patterns of sharps and flats emerge if major triads are arranged around the circle of fifths.

---

1. ADD sharps and flats to these triads to make them all MAJOR. Roots are written below the chords and are arranged according to the circle of fifths. Remember to ADD accidentals to roots if needed.
2. NOTICE patterns in the accidentals used.



10B.3 Group triads and relate the groups to each other



• Triads with the same patterns of sharps and flats are arranged together on the circle of fifths. Those with no sharps and flats are on top, those with a sharp on the third of the chord are on the right, and so on.*

• Groups with the same letter names have "opposite" sharps and flats. For example:
Db, Eb and Ab have flats "on the outside," while D, E and A have sharps "in the middle."
F, C, and G have no flats or sharps at all, while F#, C# and Gb have a flat or sharp on every note.

ON THE PREVIOUS PAGE...

1. DRAW LARGE CIRCLES all the way around these GROUPS of triads:
    a. those with no accidentals
    b. those in which the third is sharp only
    c. those in which all notes have a sharp or flat
    d. those whose root and fifth, only, are flat

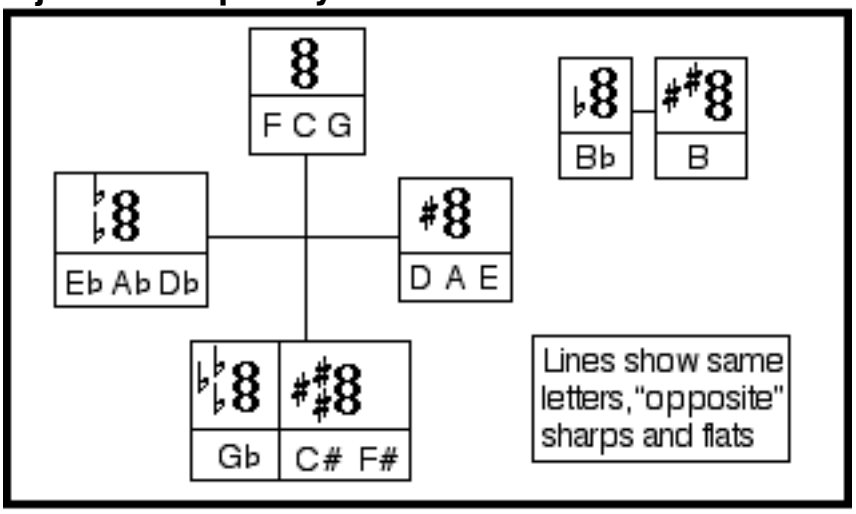
2. DRAW A CIRCLE around each of the two odd triads, B and Bb.

3. DRAW LINES between groups which have the same letter names, disregarding flats and sharps. NOTICE that the sharps and flats in each group are in some way "opposite" each other. DRAW these lines THROUGH the keyboard:
    a. between the F, C, G group and the C#, Gb, F# group
    b. between the D, A, E group and the Db, Ab, Eb group
    c. between the two odd triads, B and Bb.

———————————

* These patterns also apply to a triad's black and white keys on the piano, except for the C# triad. Unlike Gb and F#, the third of C# is a white key (E#).

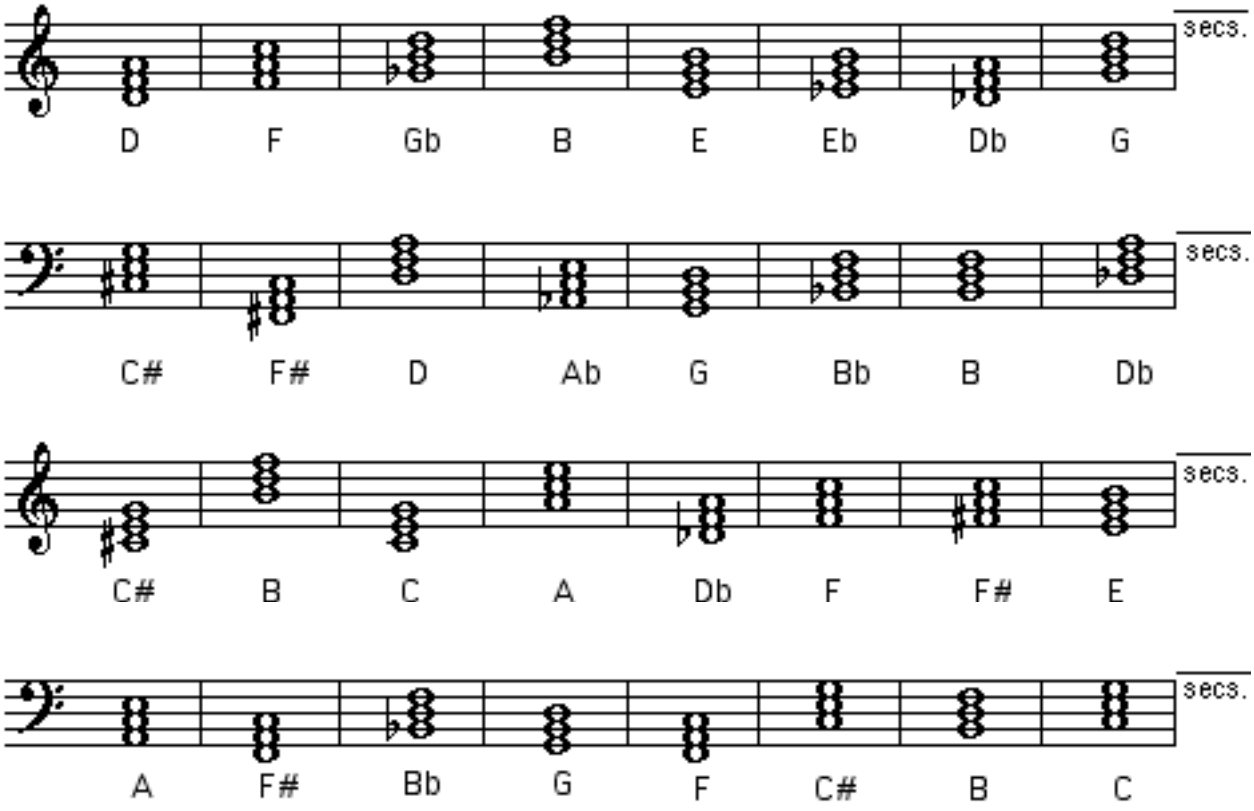
10B.4 Write major triads quickly



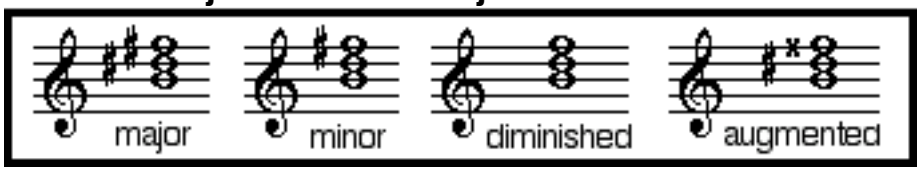
- The above chart summarizes the material on the previous pages.
- <u>The clef does not affect the patterns of sharp and flats</u> in major triads.

---

1. TIME YOURSELF as you ADD sharps or flats to these triads to make them major. CIRCLE the triads with no sharps or flats.
2. WRITE YOUR TIME at the end of each line. 15 seconds per line is a very fast time.



10B.5 Compare non-major triads to major ones

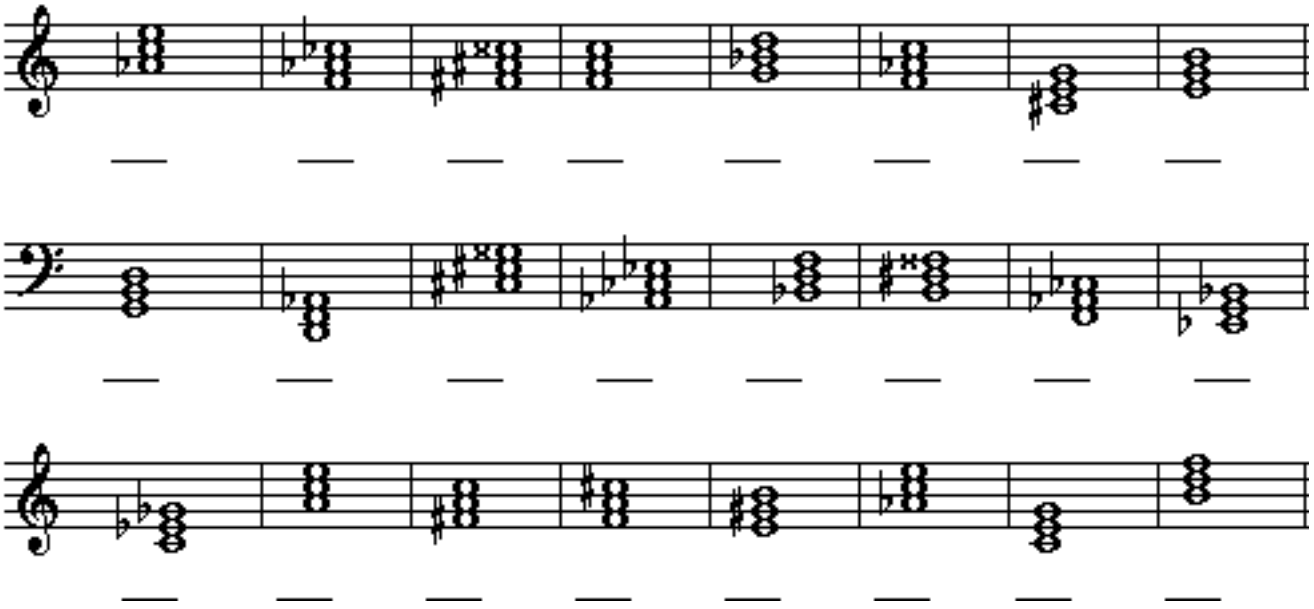


Compared to major triads:

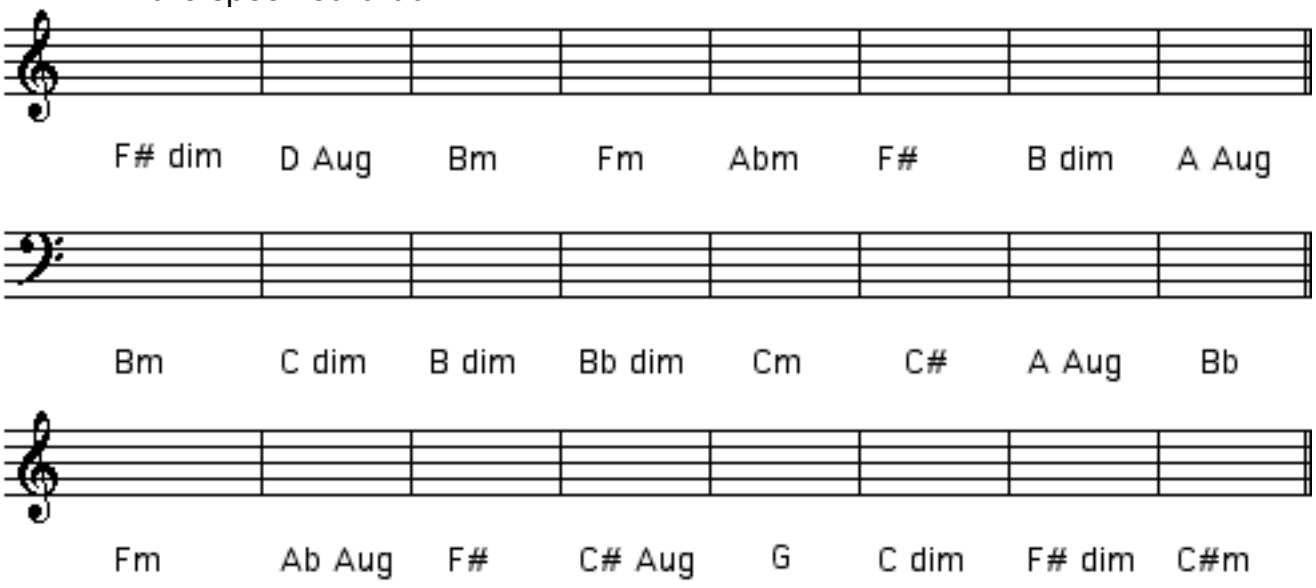
- minor triads have a third a half-step lower
- diminished triads have a third and fifth a half-step lower
- augmented triads have a fifth a half-step higher
- letter names must remain the same; triads must be built in thirds.

---

1. IDENTIFY the following triads as major, minor, diminished or augmented.



2. WRITE the specified triad.

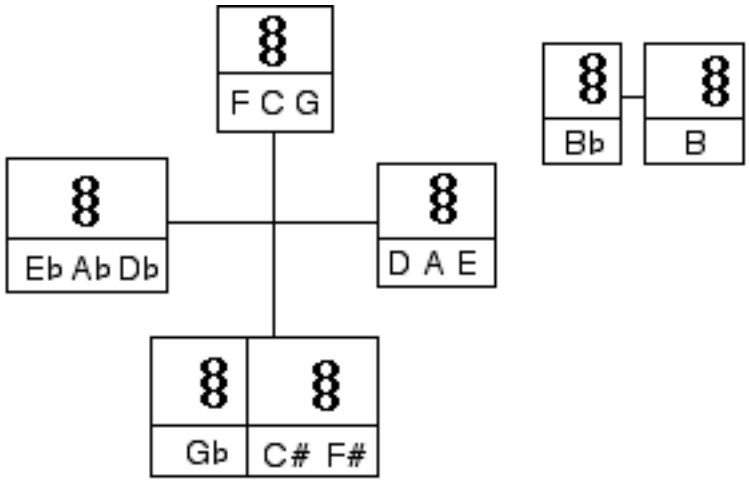


10B.6 Review relationships between triads and their thirds

• Some unusual major triads such as those built on A#, G# or Fb are not on the circle of fifths as given on 10B.2. To write triads with these roots, use the method described in chapter 10 involving the top and bottom thirds.

---

1. WRITE sharps and flats next to the appropriate notes in this chart.



2. Compared to major triads

   a. augmented triads have _____

   b. diminished triads have _____

   c. minor triads have _____

3. IDENTIFY the thirds in each kind of triad as described in Chapter 10.

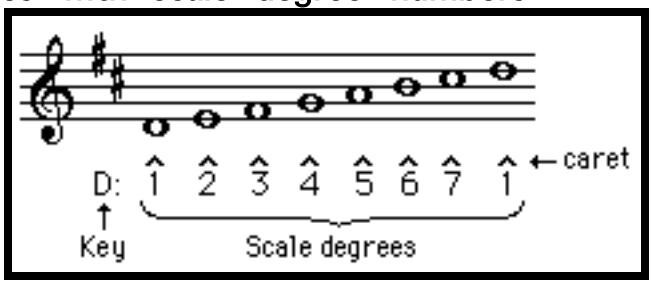
	type of triad			
	major	minor	diminished	augmented
top 3rd			minor	
bottom 3rd				

Chapter 11 Scale Degrees and Roman Numerals

In this chapter you will:

1. Identify notes with scale degree numbers
2. Draw notes given their scale degree numbers
3. Identify notes by scale degree names
4. Identify triads by scale degree of the root
5. Identify triads in order by Roman numerals: major keys
6. Identify triads in order by Roman numerals: minor keys
7. Identify triads, on random roots, by Roman numerals
8. Review and write triads given the key and Roman numeral

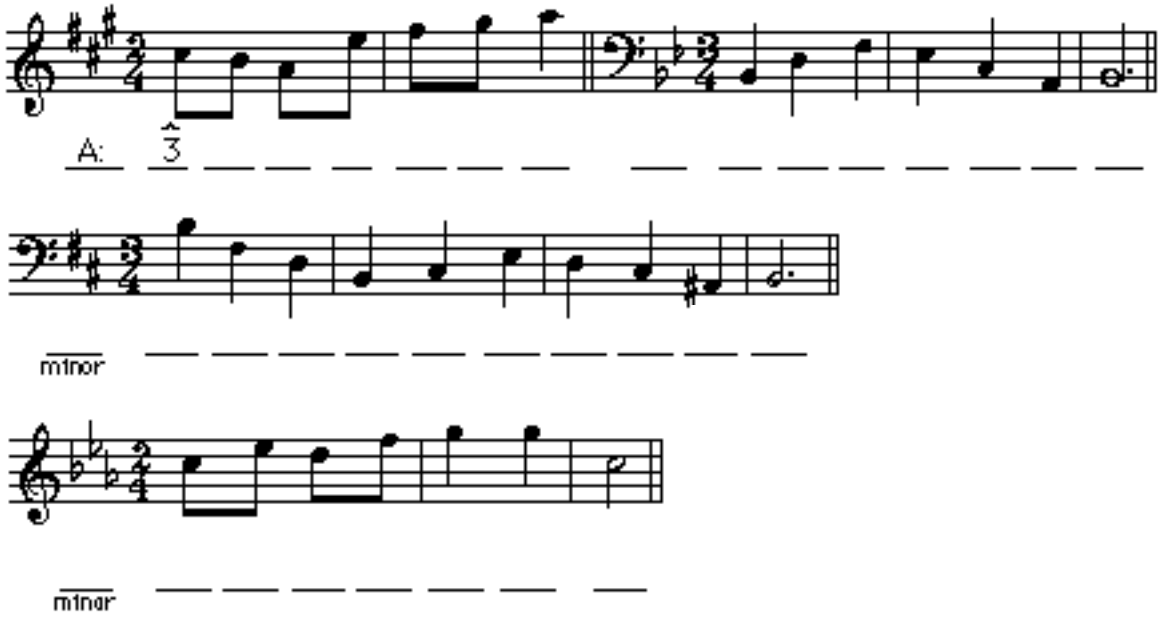
11.1 Identify notes with scale degree numbers



- A scale degree is a number or name of a note in a scale.
- Scale degree numbers are written with carets (^) on top.
- To identify notes as scale degrees in a certain key:
  1. Write the key under the key signature followed by a colon.
  2. Count the key note as 1.
  3. Then EITHER
     a. Count lines and spaces up to the note to be identified. OR
     b. count down the staff and backwards, "$\hat{1}, \hat{7}, \hat{6}$..."
  4. Under the note, write the number with a caret on top.

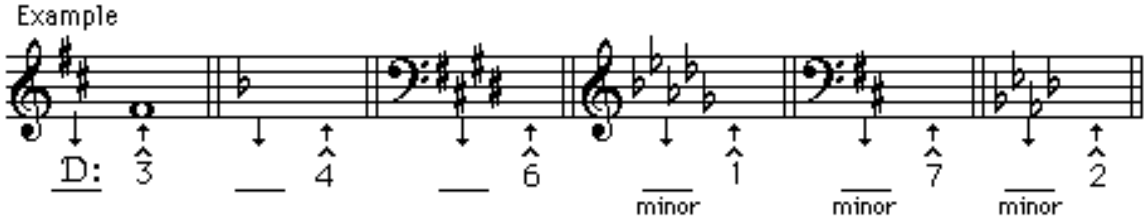
---

1. IDENTIFY the keys and scale degrees.

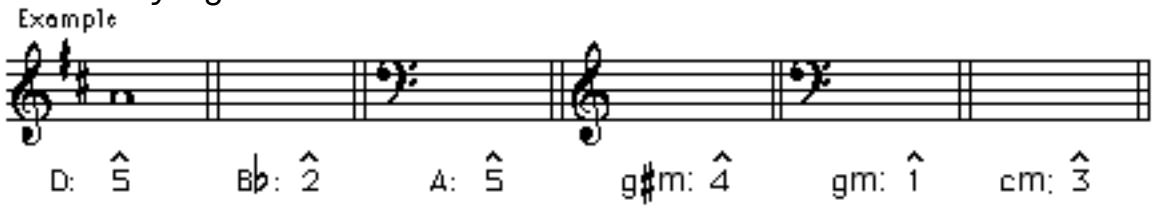


11.2 Draw notes given their scale degree numbers

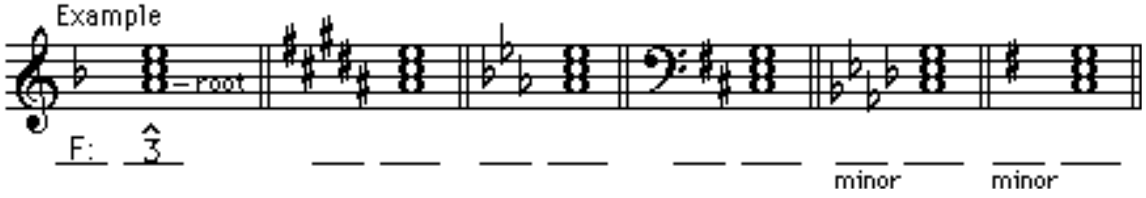
1. WRITE the key in the space, WITH A COLON, and DRAW the note on the staff.



2. WRITE the key signatures and notes on the staff.



3. IDENTIFY the key and the scale degree of the root of these triads.

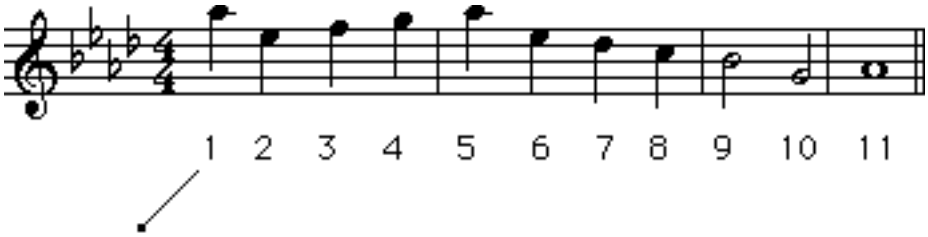


11.3 Identify notes by scale degree names

$\hat{1}$	tonic
$\hat{2}$	supertonic
$\hat{3}$	mediant
$\hat{4}$	subdominant
$\hat{5}$	dominant
$\hat{6}$	submediant
$\hat{7}$ in major and when raised in minor	leading tone

• Each scale degree has a name as well as a number. Refer to the above chart to identify scale degrees by name.

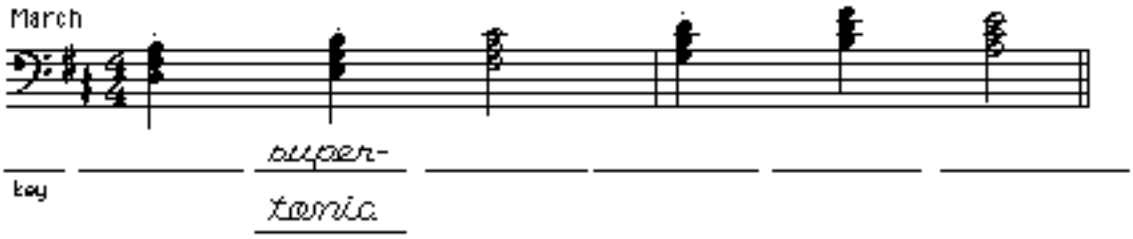
IDENTIFY the notes in the following phrase by their scale degree names.



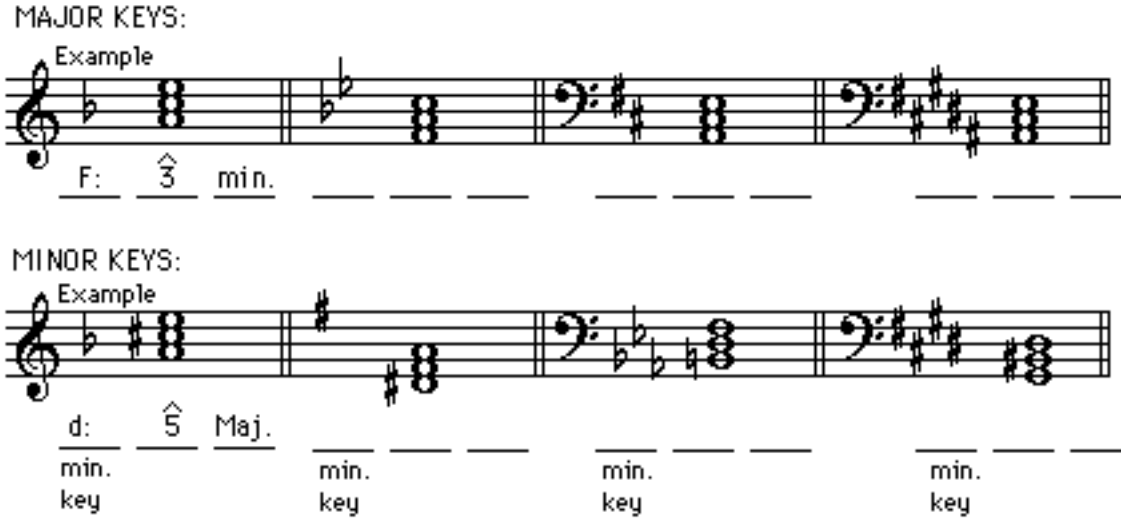
1. Tonic _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____

11.4 Identify triads by scale degree of the root

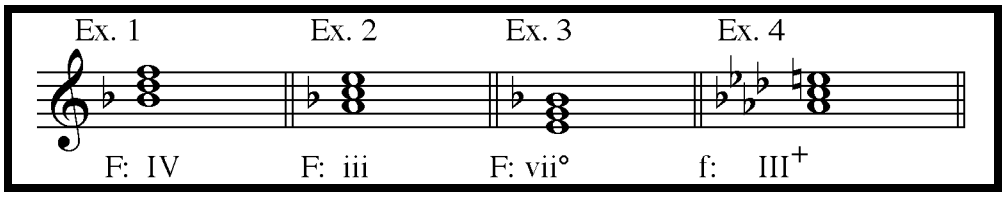
1. IDENTIFY the key and the scale degree <u>name</u> of the root of each triad.



2. IDENTIFY the key, the scale degree <u>number</u> of the root, and the <u>type</u> of triad (major, minor, diminished or augmented). Abbreviate the triad type.



11.5 Identify triads in order by their Roman numerals: major keys



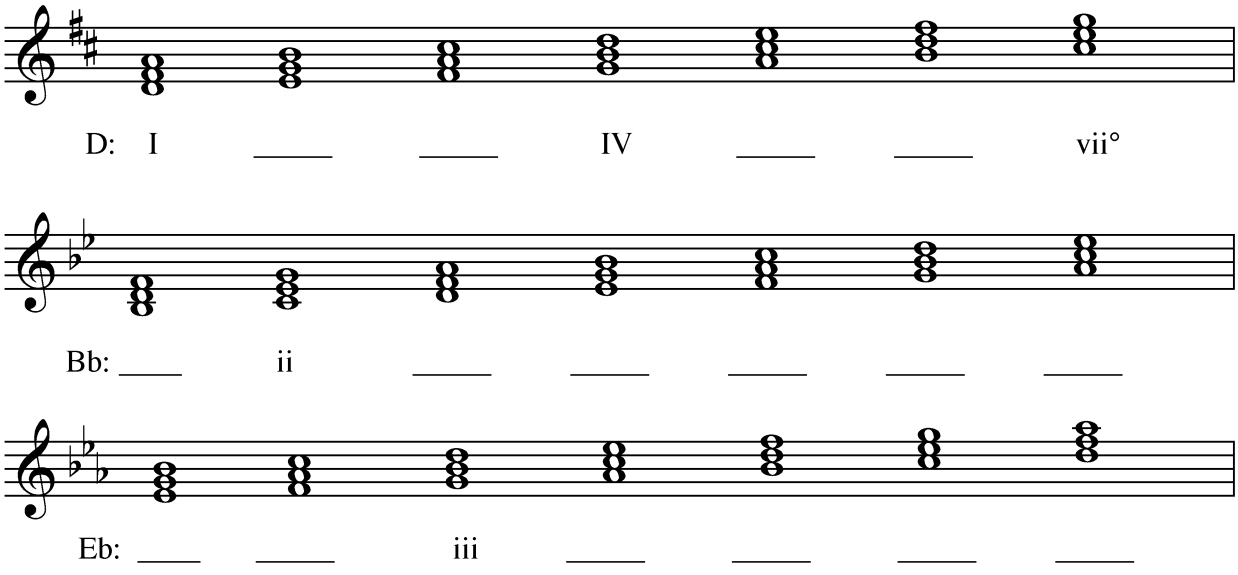
- A triad's Roman numeral shows both the scale degree of the root and the type of triad (major, minor, diminished or augmented).

- The scale degree of the root is shown by the Roman numeral itself. The numbers 1 – 7 in capital Roman numerals are:
  I II III IV V VI VII

- The type of triad is shown by how the Roman numeral is written and by symbols which sometimes follow:
  Major triads are written capital (Example 1 at the top of the page).
  Minor triads are written lower case (Example 2)
  Diminished triads are written lower case with a circle (Example 3).
  Augmented triads are written upper case with a plus sign (Example 4).

---

1. IDENTFY the triads with Roman numerals according to the chord type. The key signature applies to the whole line.
2. Then COMPARE how each numeral is written for the three keys.

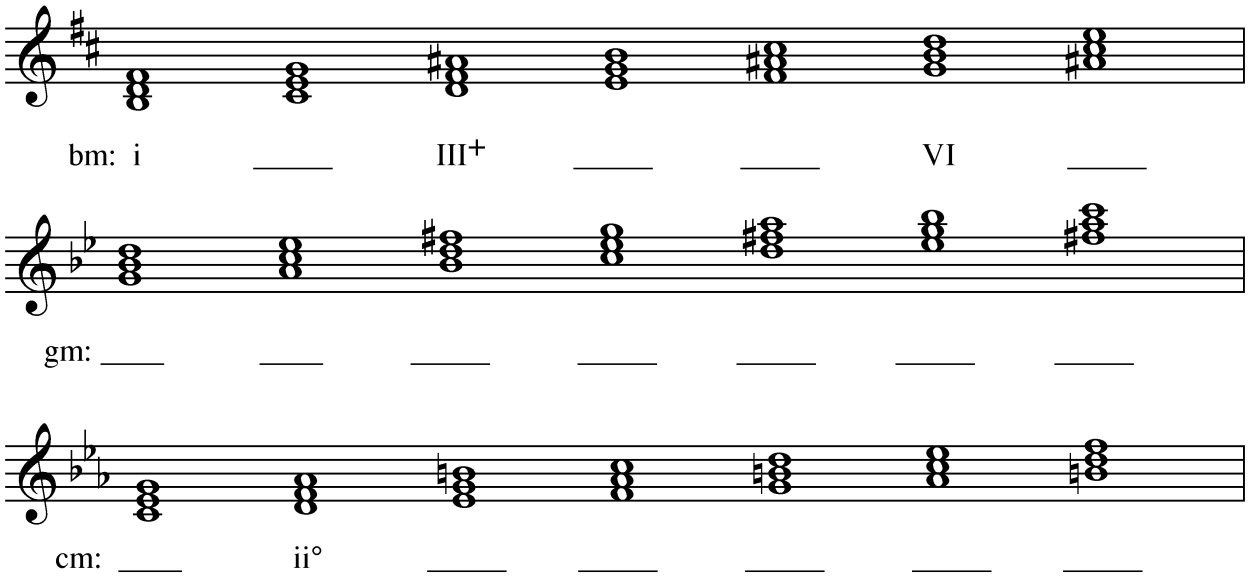


11.6 Identify triads in order by their Roman numerals: minor keys

- This book uses the harmonic minor scale when triads are in minor keys.
- Recall that in harmonic minor $\hat{7}$ is raised a half step.

---

1. IDENTIFY the triads below with Roman numerals according to chord type, as in the previous page. NOTICE the minor keys and the raised $\hat{7}$.



11.7 Identify triads on random roots by Roman numerals

Major Keys: I ii iii IV V vi vii°
Harmonic Minor: i ii° III+ iv V VI vii°

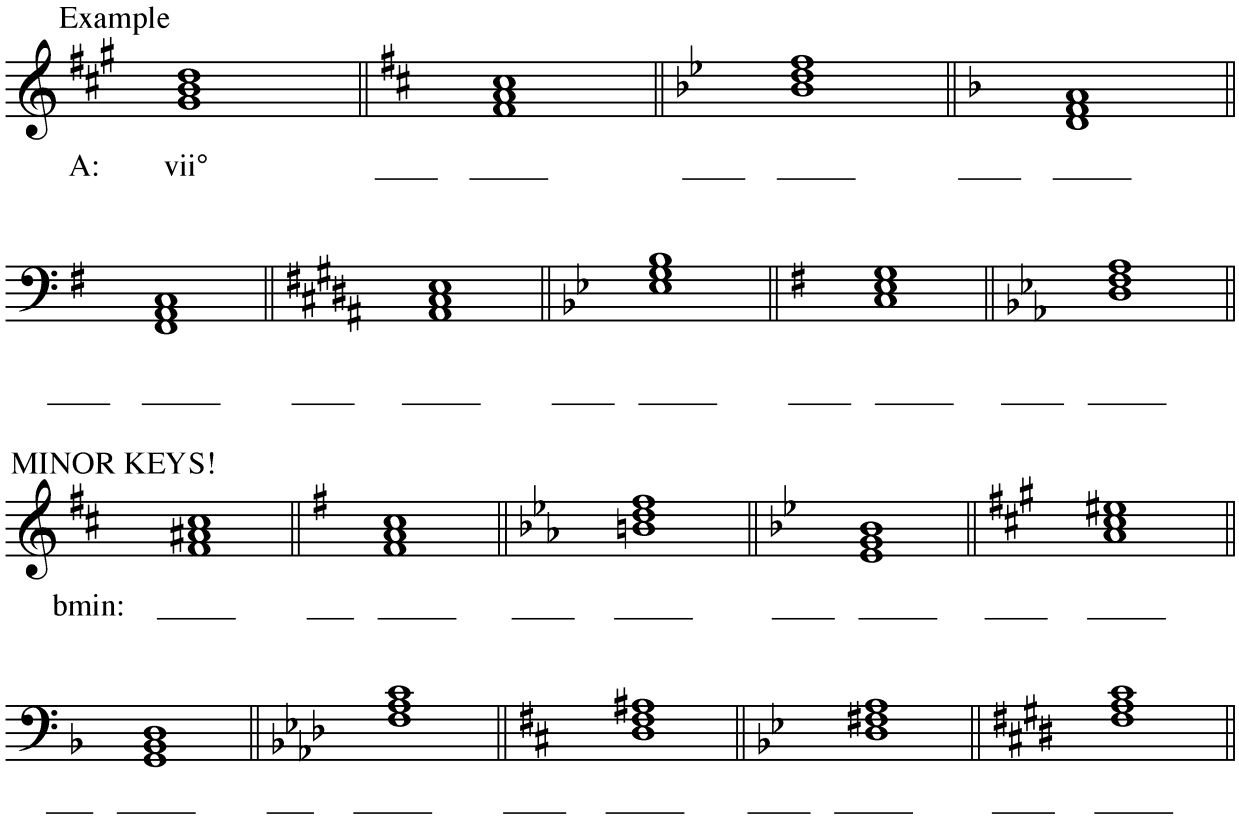
The previous two worksheets demonstrate that:

- The order of triad types on successive scale degrees is the same for all major keys, and
- Another order holds for all minor keys using the harmonic minor scale.
- The chart at the top of the page shows the sequences with Roman numerals.

In major the order is:
1.major, 2.minor, 3.minor, 4.major, 5.major, 6.minor, 7.diminished
In harmonic minor the order is:
1.minor, 2.diminished, 3.augmented, 4.minor, 5.major 6.major, 7.diminished

---

1. MEMORIZE the order of triad types in major and harmonic minor.
2. IDENTIFY the keys and Roman numerals for the following triads.



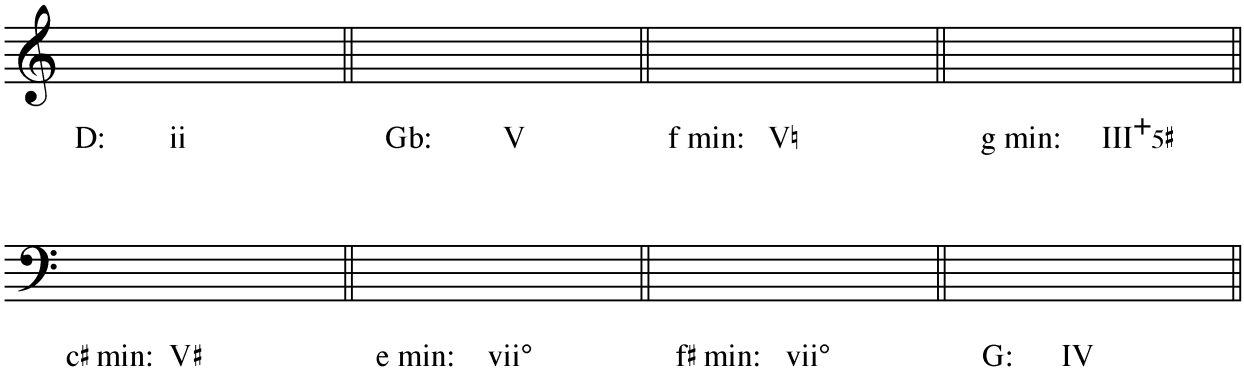
11.8 Review and write triads given the key and Roman numeral

• Sometimes <u>accidentals</u> are written <u>beside Roman numerals</u> to remind you that a chord tone is raised in harmonic minor.

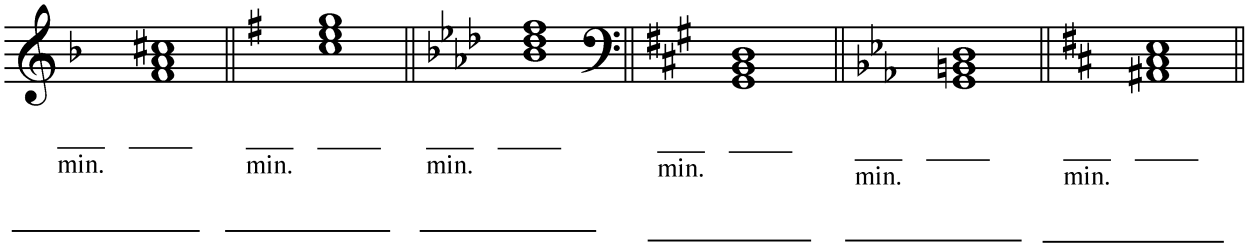
However, there is no way to show that the root of vii° is raised.
An accidental by itself means raise the third.

---

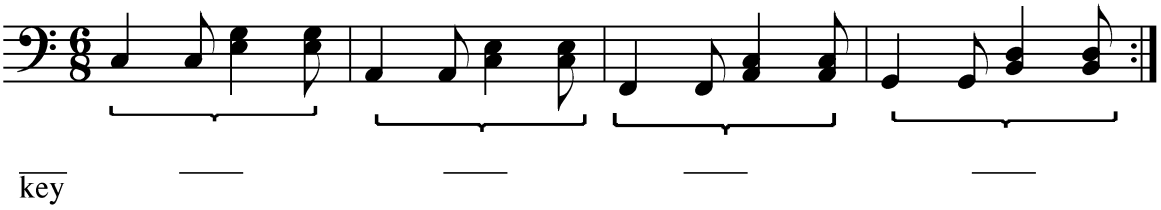
1. WRITE the key signature and triad according to the Roman numeral.
RAISE $\hat{7}$ in minor keys. Accidentals do not appear next to vii° as reminders.



2. IDENTIFY the key, Roman numeral, and scale degree <u>name</u> of the root.
All keys are MINOR.



3. IDENTIFY the key and the Roman numerals for this music. Combine the notes above each brace to complete a triad. WHAT IS THIS ACCOMPANIMENT?

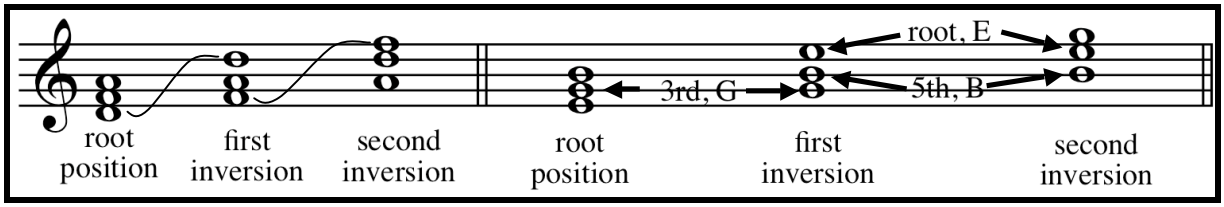


Chapter 12 Triad Inversions, 1: Letters for Roots

In this chapter you will:

1. Invert triads
2. Identify inversions with Arabic numerals
3. Identify roots of inverted triads
4. Complete a chart about triad inversions
5. Review inversions and write abbreviated Arabic numerals
6. Notate inverted triads
7. Review inversions and Roman numerals

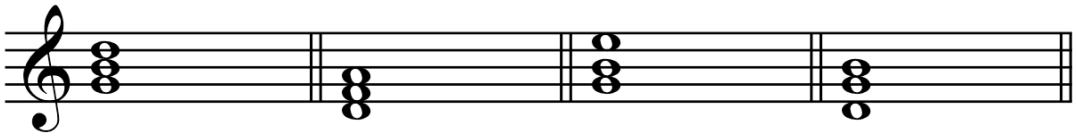
12.1 Invert Triads



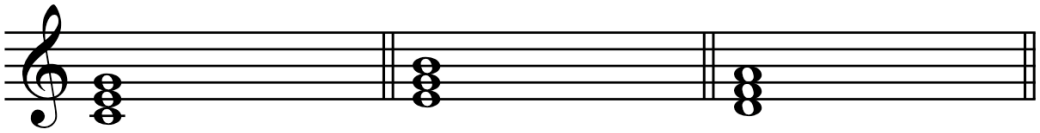
- To invert a chord, raise the bottom note to a higher octave.
- A root position chord is stacked in thirds, as in previous chapters. See the first chord above.
- A first inversion chord is a root position chord which has been inverted once. See the second chord above.
- A second inversion chord is a root position chord which has been inverted twice. See the third chord above.
- Letter names for the root, third and fifth remain the same after inversion. Therefore an E chord (a chord whose root is E) remains an E chord after inversion. See the three E chords above and on the right.

---

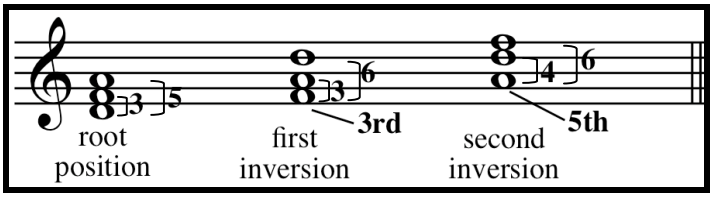
1. INVERT these triads.



2. a. CIRCLE the root of these triads.
   b. INVERT the triads.
   c. CIRCLE the root of the inversion.



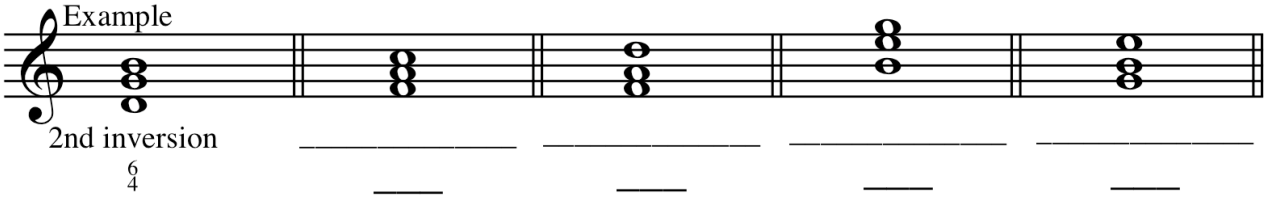
12.2 Identify inversions with Arabic numerals



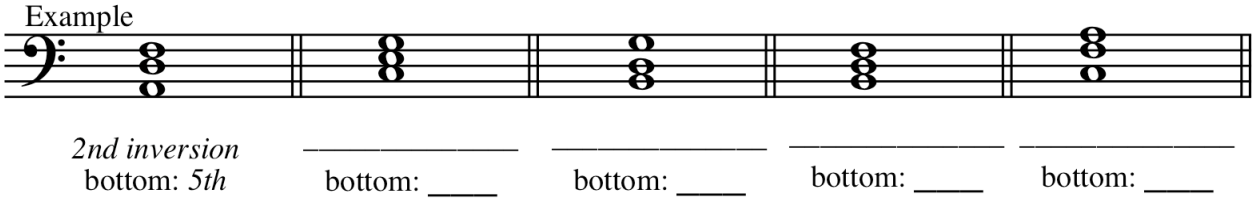
- Root position triads are given the numbers $\frac{5}{3}$. These numbers are often omitted.
- First inversion triads are given the numbers $^{6}/_{3}$, usually abbreviated 6.
- Second inversion triads are given the numbers $\frac{6}{4}$. They are never abbreviated.
- These numbers are called Arabic numerals (as distinguished from *Roman* numerals).
- Arabic numerals are intervals between the bottom note and the other two notes of the triad. See the bracketed intervals in the above illustration.
- The third is always on the bottom of a first inversion triad and the fifth is always on the bottom of a second inversion triad.

---

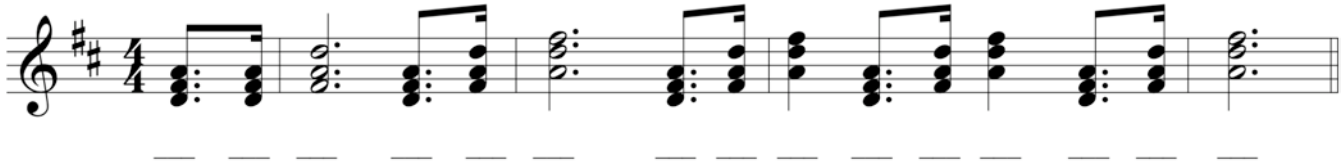
1. a. IDENTIFY as root position, 1st or 2nd inversion.
   b. WRITE the full Arabic numerals (both numbers).



2. a. IDENTIFY the triad as root position, 1st or 2nd inversion.
   b. IDENTIFY the bottom note as the root, third or fifth of the chord.

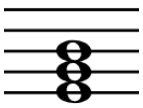
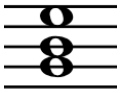
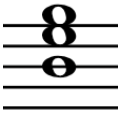


3. WRITE full Arabic numerals under each triad in this arrangement of "Taps."

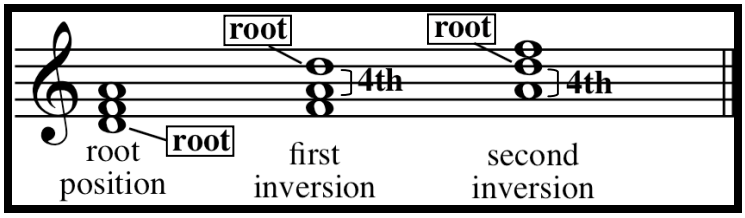


Reference Sheet

MEMORIZE the following chart.

On the staff			
Full Arabic numerals	$\begin{matrix}5\\3\end{matrix}$	$\begin{matrix}6\\3\end{matrix}$	$\begin{matrix}6\\4\end{matrix}$
Abbreviated Arabic numerals	(left blank)	6	$\begin{matrix}6\\4\end{matrix}$ (no abbreviation)
Name	Root position	First inversion	Second inversion
Bottom note	root	third	fifth

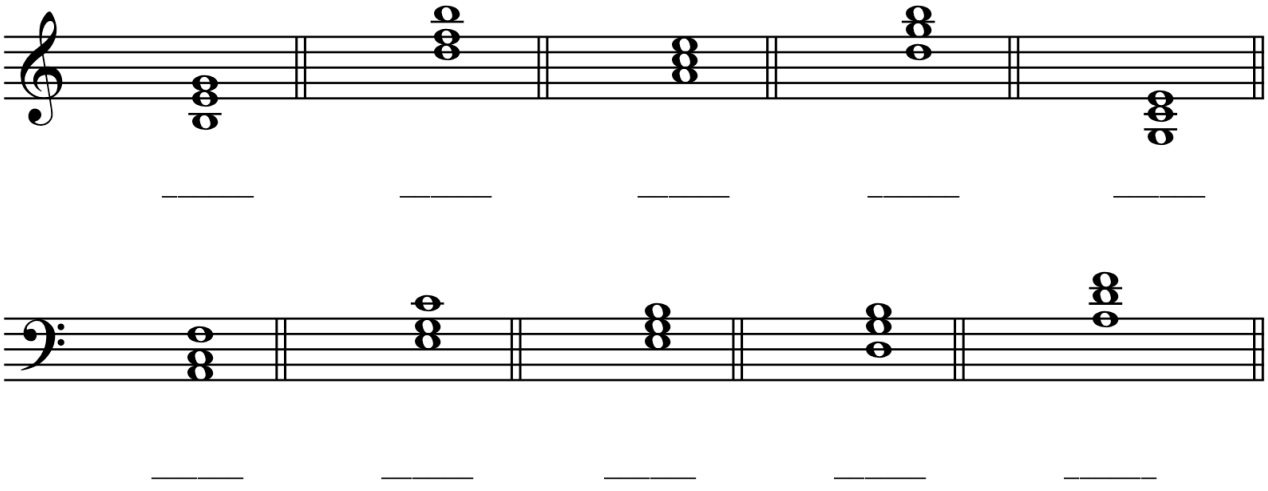
12.3 Identify roots of inverted triads



• Recall that the root is on the bottom of a root position triad.
• The root of an inverted triad is the top note of the interval of a fourth.
• The notes of a fourth are always one on a line and one in a space.

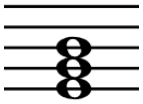
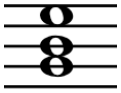
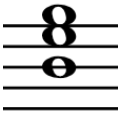
---

1. WRITE the letter of the root of these inverted and root position triads.
2. WRITE abbreviated Arabic numerals next to the letter (write no Arabic numerals for root position and recall that there is no abbreviation for second inversion).



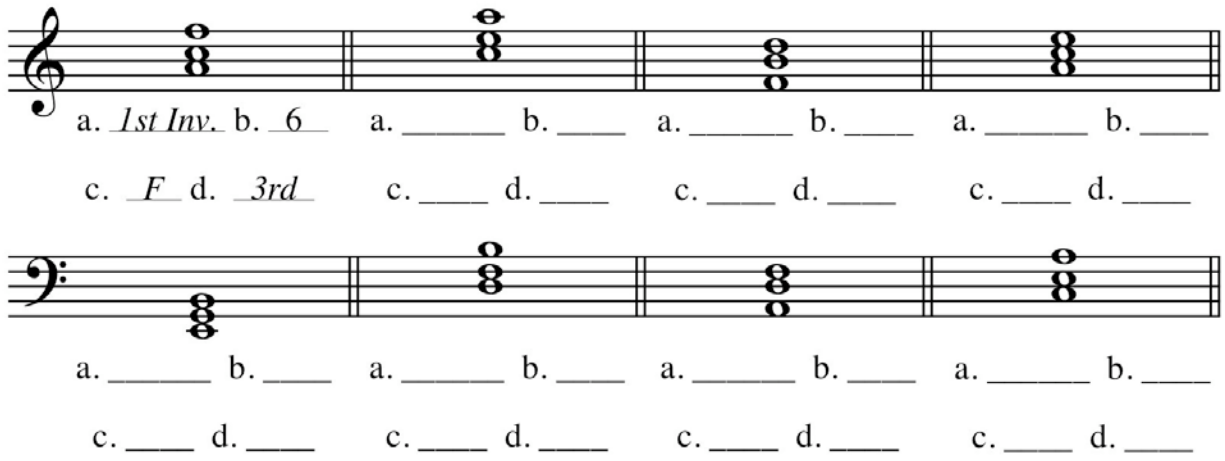
12.4 Complete a chart

COMPLETE this chart from memory.

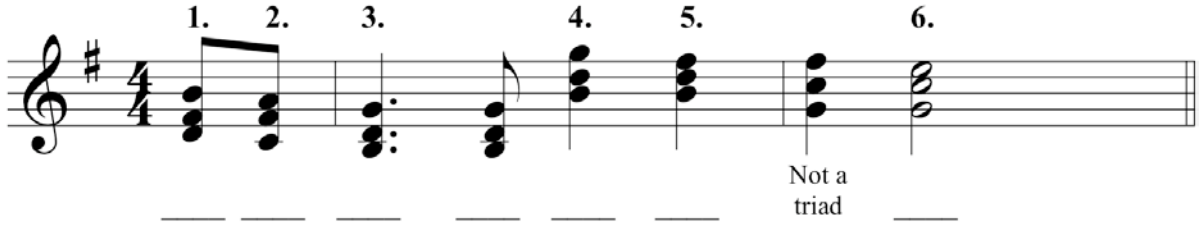
On the staff			
Full Arabic numerals			
Abbreviated Arabic numerals			$\frac{6}{4}$ (no abbreviation)
Name			
Bottom note	root		

12.5 Review inversions and write abbreviated Arabic numerals

1. ANALYZE the following triads.
   a. IDENTIFY the triad as root pos., 1st Inv. or 2nd Inv.
   b. WRITE **ABBREVIATED** Arabic numerals (LEAVE BLANK for root position triads).
   c. WRITE the letter of the root.
   d. IDENTIFY the bottom note as the root, third or fifth of the triad.



2. ANALYZE the chords in the following folk song.
   a. WRITE letter names of roots and abbreviated Arabic numerals both in the same space below each triad.

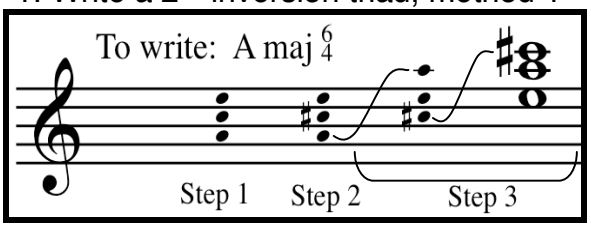


   b. WRITE, for the above music, the scale degree name (tonic, supertonic…) of the roots of the triads with numbers above them.

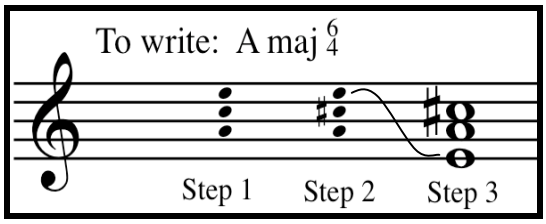
Triad	Scale Degree Name	Triad	Scale Degree Name
1.		4.	
2.		5.	
3.		6.	

12.6 Notate inverted triads

1. Write a 2nd inversion triad, method 1



2. Alternate method

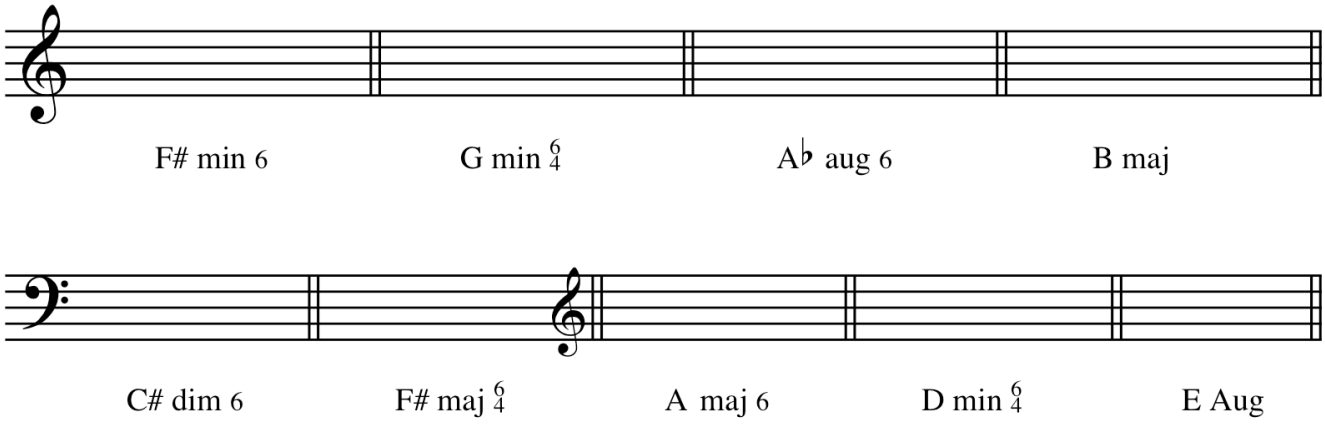


- A chord tone is a member of a chord with no specific octave.
  "Chord tone" is a general term, like "letter names" for notes.
- Dots on the staff represent chord tones.
- To write inverted triads follow these steps carefully*
  1. Write a root position triad with chord tone dots. See both illustrations above.
  2. Add sharps or flats for the given chord quality (major, minor, diminished or augmented).
  3. Invert the triad:
     For first inversion, invert once.
     For second inversion, EITHER invert twice (Illustration 1, above),
     OR bring the fifth below the root (Illustration 2).

_____

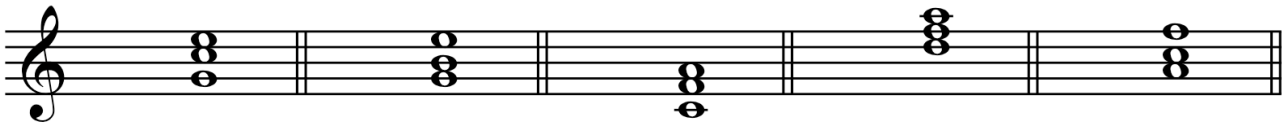
*Do not immediately write an inverted triad with the given root as the bottom note. Your triad will have the wrong root and you will not be able to alter notes to get the correct chord quality.

NOTATE these triads.



12.7 Review inversions and Roman numerals

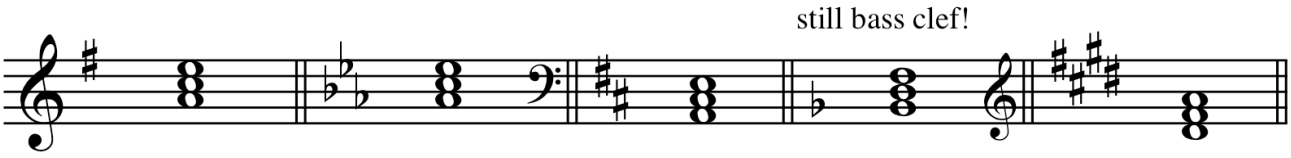
1. WRITE
   a. whether the triad is root position, 1st or 2nd inversion
   b. whether the root, 3rd or 5th is on the bottom
   c. the abbreviated Arabic numerals (if applicable)



a. ___ b. ___ c. ___ a. ___ b. ___ c. ___ a. ___ b. ___ c. ___ a. ___ b. ___ c. ___ a. ___ b. ___ c. ___

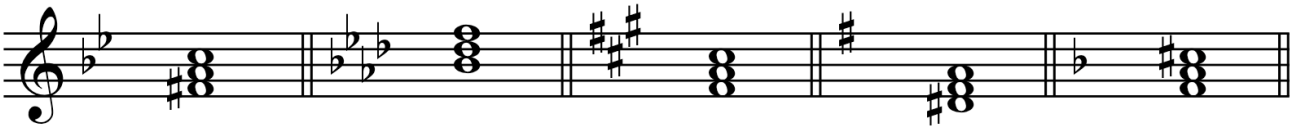
2. WRITE the key followed by a colon, and the Roman numeral.

   a. Major keys



___ ___ ___ ___ ___ ___ ___ ___ ___ ___

   b. Minor keys



___ ___ ___ ___ ___ ___ ___ ___ ___ ___

Chapter 13 Triad Inversions, 2: Roman Numerals for Roots

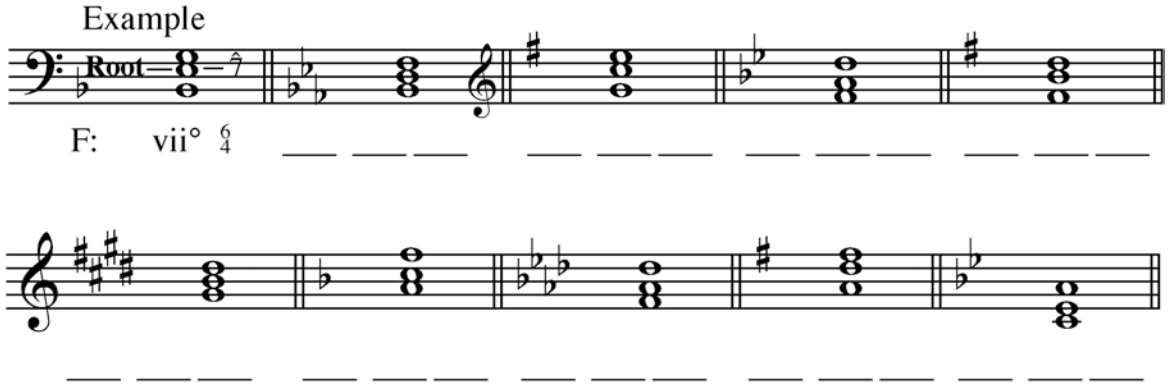
In this chapter you will:
1. Identify inverted triads with Roman numerals
2. Write Inverted triads given keys and Roman numerals
3. Identify inversions with wide spacings and doublings
4. Identify inverted triads in four parts
5. Review identifying and writing triad qualities and inversions

13.1 Identify inverted triads with Roman numerals

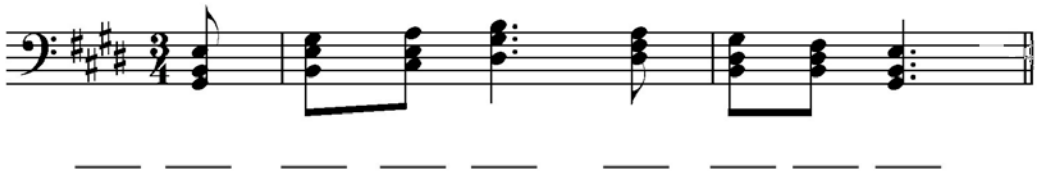
- To find the Roman numeral of a triad call the key note "one" and count up from the key to the root.
- The Roman numeral is named after the root of the triad, not the bottom note.

---

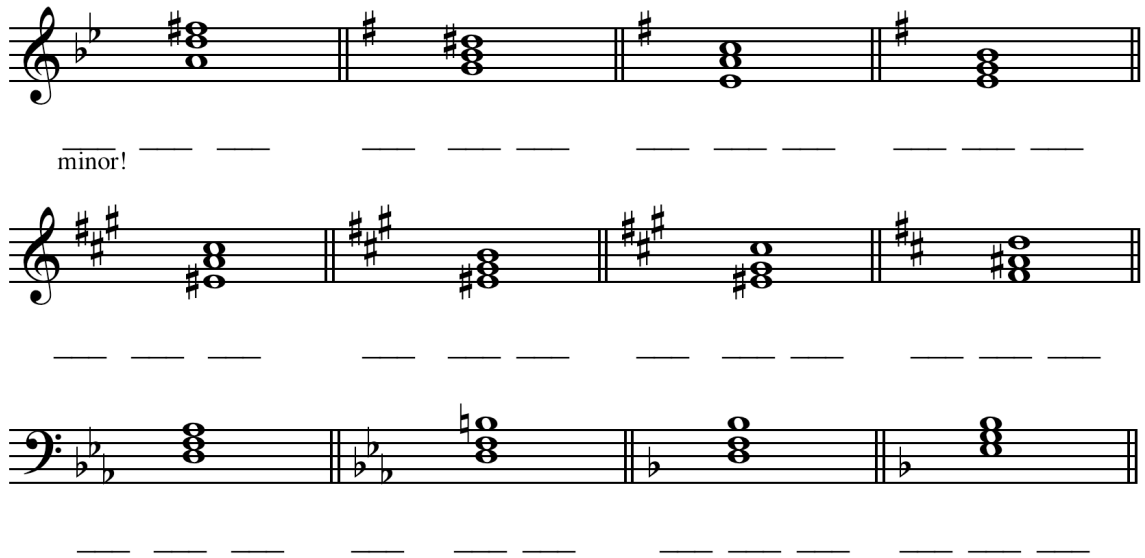
1. WRITE the major key, the Roman numeral, and the figures ($\frac{6}{4}$, 6 or blank) for these triads.



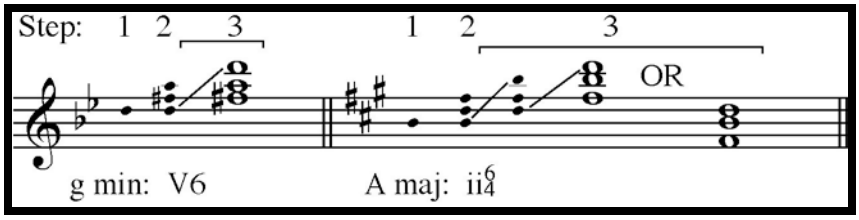
2. WRITE the key. PLACE the Roman numeral and the figures for each triad on the same line:



3. WRITE the MINOR key, the Roman numeral, and the figures ($\frac{6}{4}$, 6 or blank)



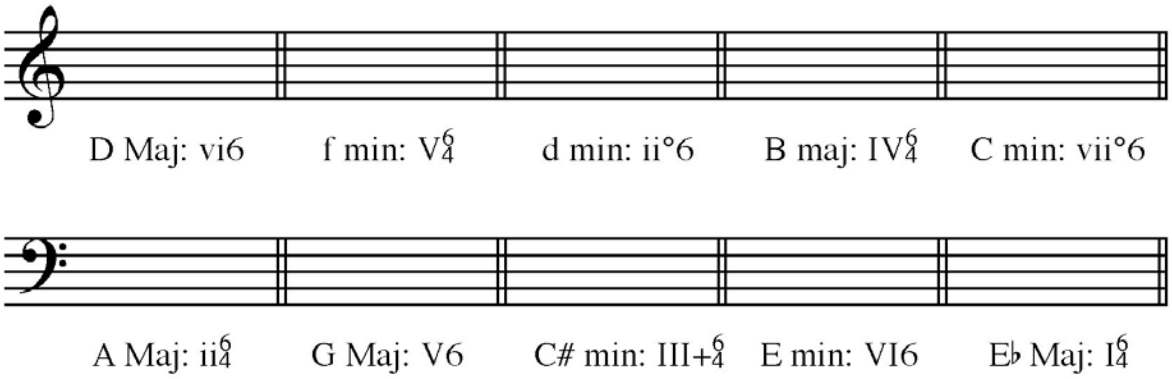
13.2 Write inverted triads given keys and Roman numerals



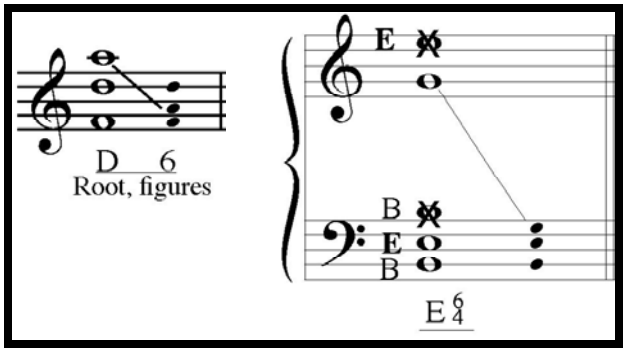
To write an inverted triad given a key, Roman numeral and figures:

1. Find the root by calling the key note "one" and counting up from the key to the note specified by the Roman numeral. Put a dot (a chord tone) on that note.
2. Draw dots for the third and fifth to form a root position triad. Raise any of the three notes a half-step if it is the seventh note of a minor key. Frequently these raised notes will not be reflected in the figures.
3. Invert the triad:
   - For first inversion (6) invert once by raising the root an octave.
   - For second inversion ($^6_4$) EITHER invert twice OR bring the fifth down an octave.

WRITE the indicated key signatures and inverted triads.
CAREFUL: the figures on this page will not indicate raised notes in minor.

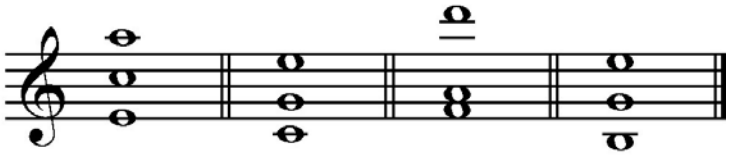


13.3 Identify inversions with wide spacings and doublings

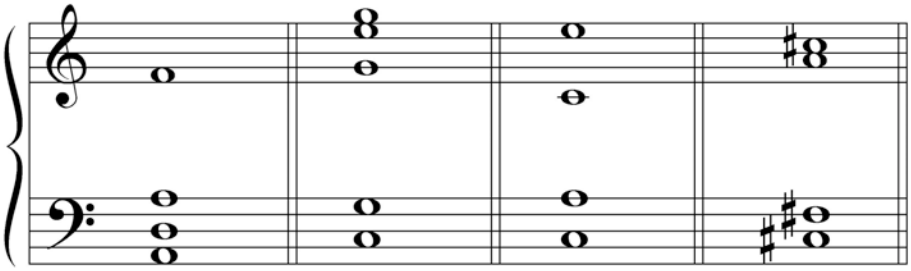


- The notes of a triad are not always as close as possible. The distance between notes in a chord is called the chord's spacing.
  - To identify inversions of triads whose notes' spacing is spread out, bring high notes down as many octaves as needed to be close to the lowest note, but not below the lowest note. Then analyze the triad as in previous pages. See the first example above.
- While a triad has only three chord tones—three letter names—each chord tone may appear any number of times in different octaves in a chord. Chord tones which appear twice in the same triad are called doublings.
  - To identify inversions of triads whose notes are doubled, cross out higher octaves of doubled notes--never eliminate the lowest note. See the second example above.

WRITE the letter of the root and figures, if needed, for these triads.



___ __ ___ __ ___ __ ___ __



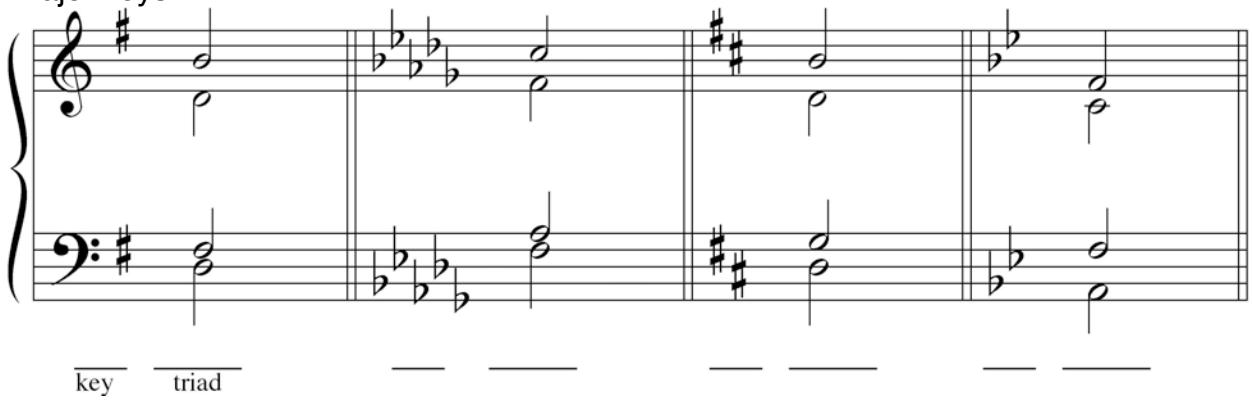
___ __ ___ __ ___ __ ___ __

13.4 Identify inverted triads in four parts

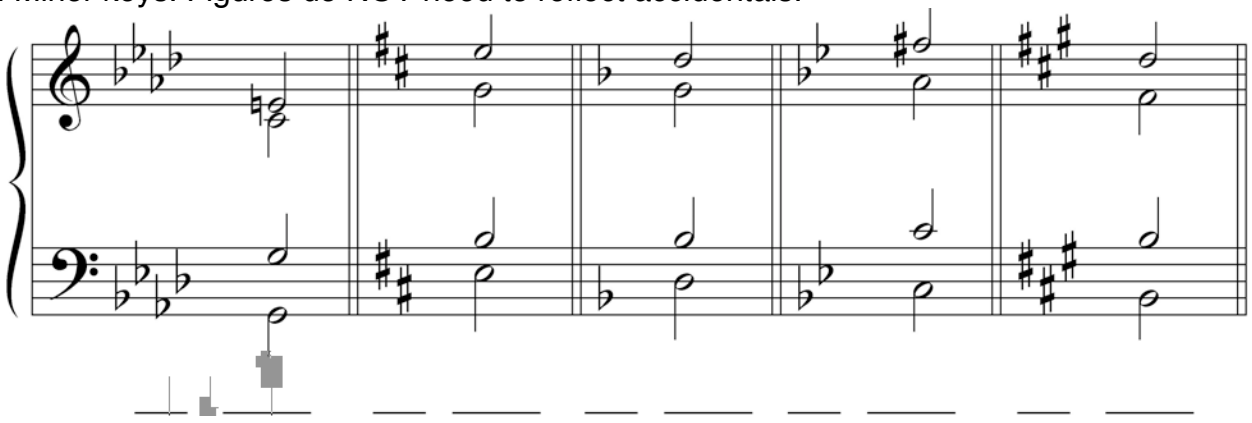
- When analyzing chords it is sometimes helpful to write the letter name of each note.

IDENTIFY the key, the Roman numeral and inversion figures. PLACE the Roman numerals and inversions on the same line.

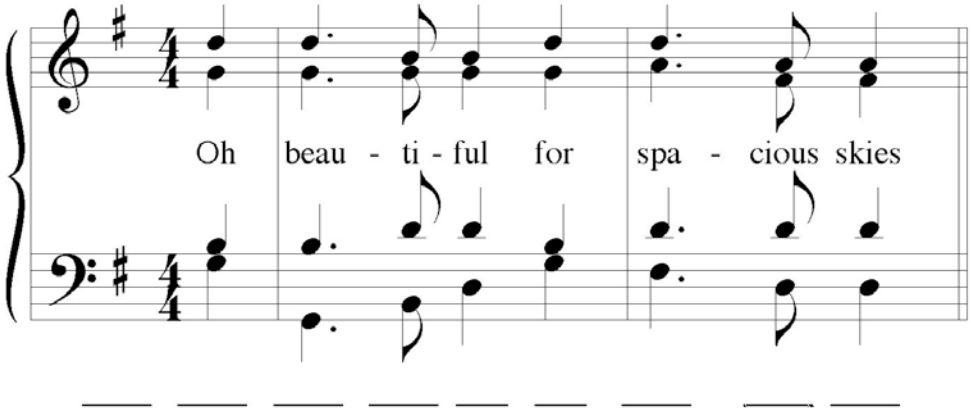
1. Major keys



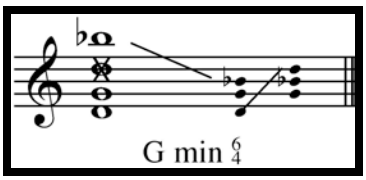
2. Minor keys. Figures do NOT need to reflect accidentals.

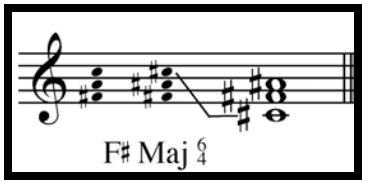


3. In a musical context



13.5 Review identifying and writing triad qualities and inversions





To identify a triad's root, inversion and quality (major, minor, diminished or augmented):

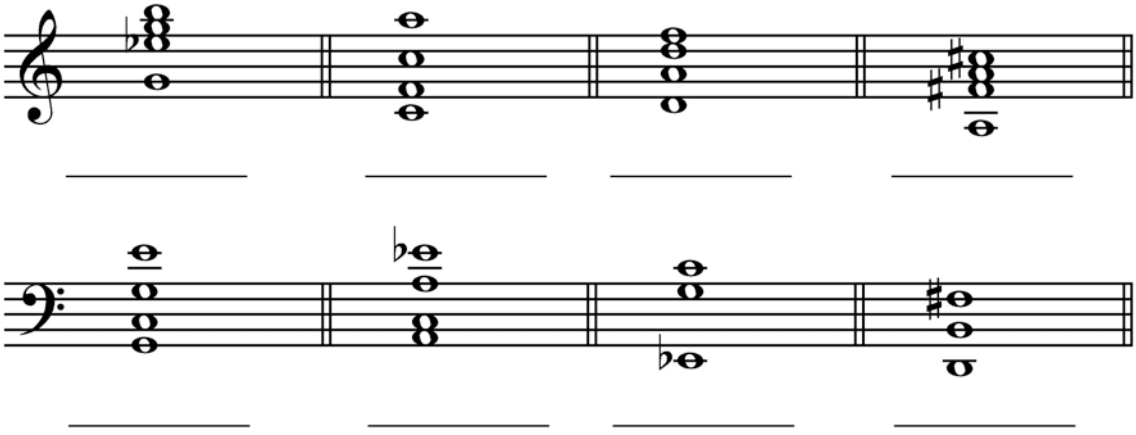
- cross out higher octaves of doubled chord tones,
- bring down chord tones so they are close to, but not below the lowest note,
- find the root: if in root position, the bottom note; if inverted, the top of the fourth,
- find the inversion by counting intervals above the bottom note
- put in root position if needed and analyze the quality as in Chapter 10.

To write a triad given its root, quality and inversion:

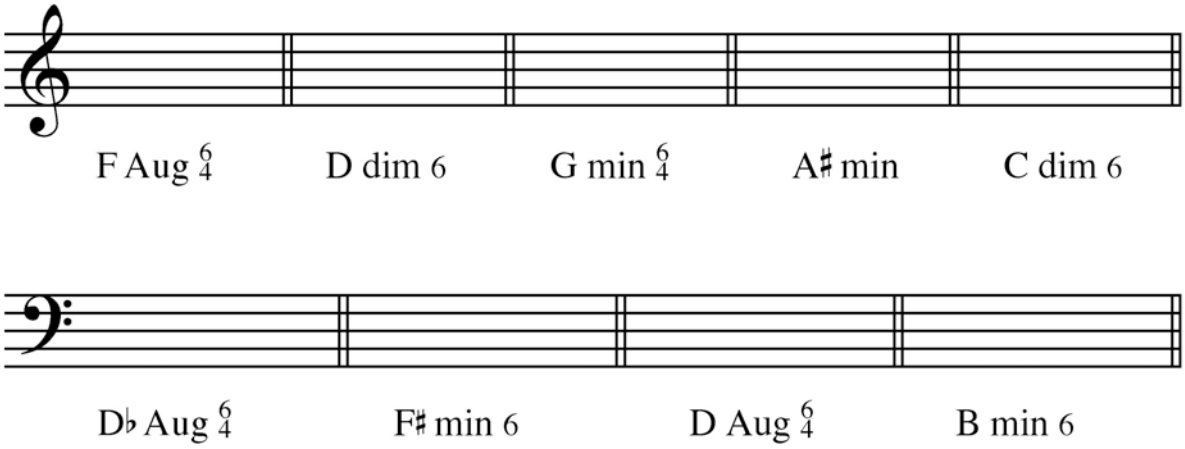
- draw dots for chord tones in root position, including the accidental, if needed, for the root.
  Hint: Do not immediately write an inverted triad.
- while still in root position place accidentals if needed according to the given chord quality,
- invert the triad as in Worksheet 13.2, step 3.

---

1. IDENTIFY the letter of the triad's root, its quality and its inversion.



2. WRITE the triad given its root, quality and inversion.

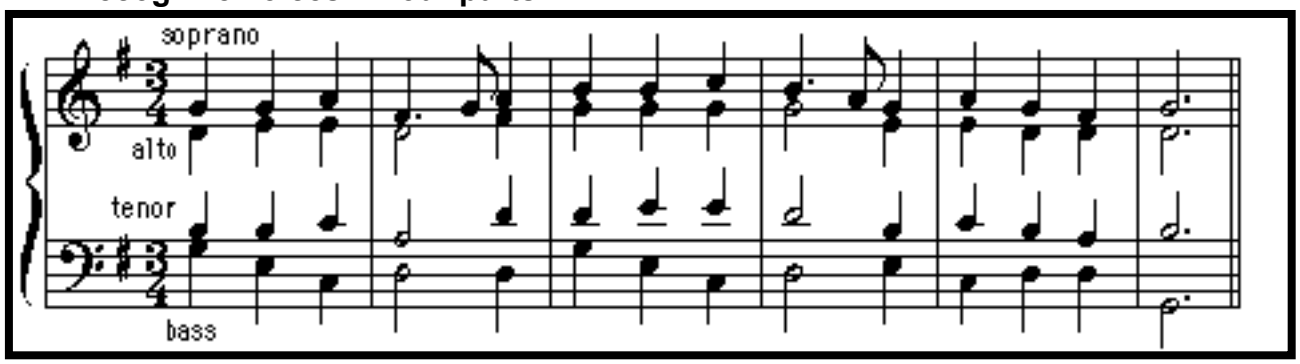


Chapter 14 Writing Triads in Four Parts

In this chapter you will:

1. Recognize voices in four parts
2. Distinguish voices by staff and stem
3. Find doubled notes and inversions
4. Learn about close and open spacing
5. Write triads in close spacing
6. Write triads in open spacing
7. Find common tones for two triads
8. Find common tones and relate them to voices

14.1 Recognize voices in four parts



This arrangement of "My Country 'Tis of Thee" is written in four parts. These parts are modeled after the vocal parts in a chorus:

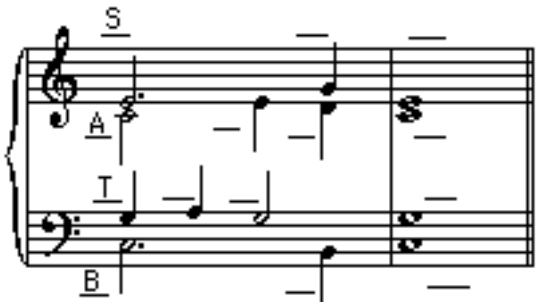
- The top voice is the soprano (high women's voice).
- The next lowest is the alto (low women's voice).
- Next is the tenor (high men's voice).
- The lowest is the bass (low men's voice).

- The terms "voice" and "part" are interchangeable.

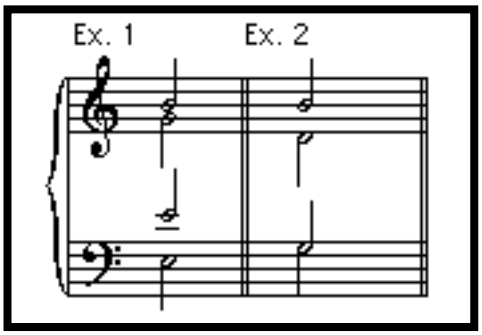
In Chapter 14 you will learn to write chords as they are written above:

- All the chords are triads so each one has three chord tones only. Since there are four notes per chord, one chord tone is always doubled.
- In root position triads the root is usually the doubled chord tone.

LABEL each of the following notes by voice. Use the letters S, A, T and B as abbreviations.



14.2 Distinguish voices by staff and stem



•Music in four voices will be written on grand staffs. A grand staff is two staffs joined together as in piano music.

To help distinguish the voices visually when four parts are written on a grand staff:
• The soprano and alto are written on the top staff, and
• The tenor and bass are written on the bottom staff. Sometimes this placement requires several ledger lines See tenor in Example 1.
•Stems for soprano and tenor notes go up, and
• Stems for alto and bass notes go down.
•When adjacent voices sing the same note, a single notehead gets two stems. See Example 2.

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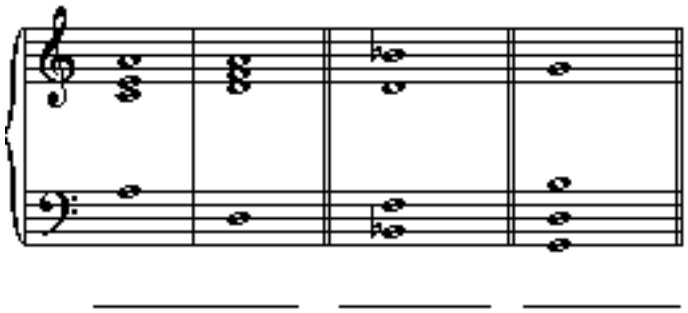
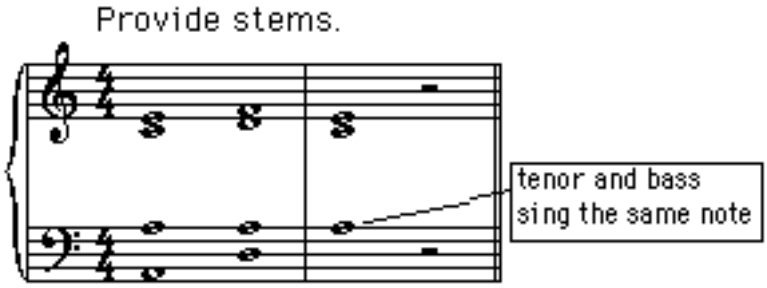
1. NAME the voice written on the wrong staff. If all voices are correct, write "correct."

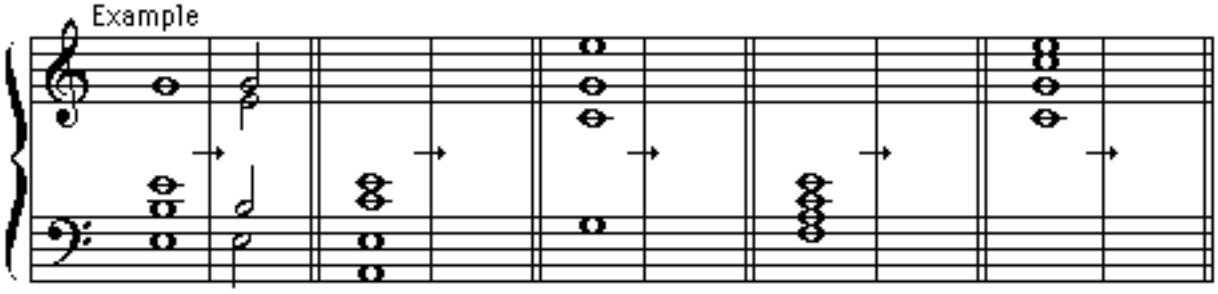


2. CREATE half notes by adding a stem to every note in the proper direction.

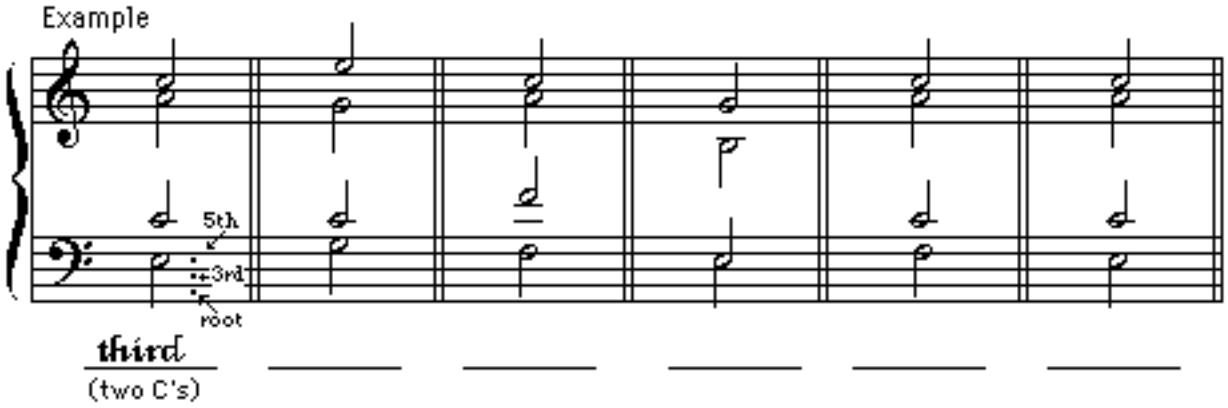


14.3 Find doubled notes and inversions

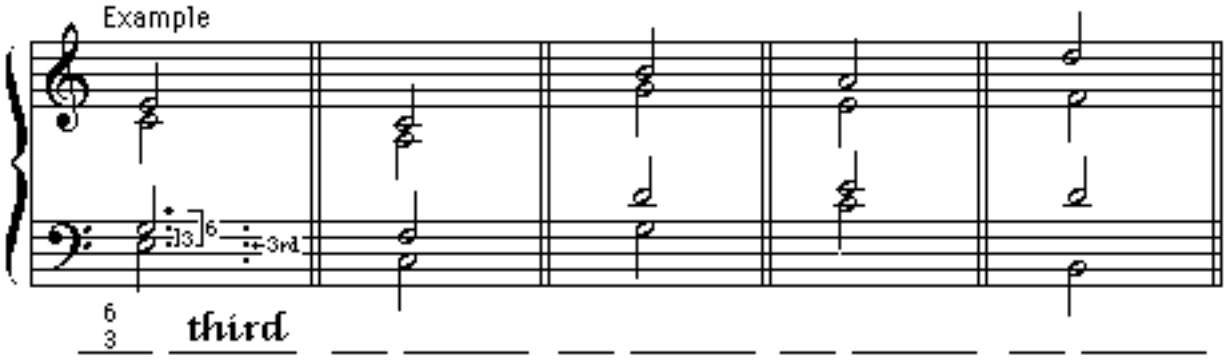
1. REWRITE the following chords in four parts. The rewritten notes should be in the same octave as the original notes. ADD stems to make the notes half notes.



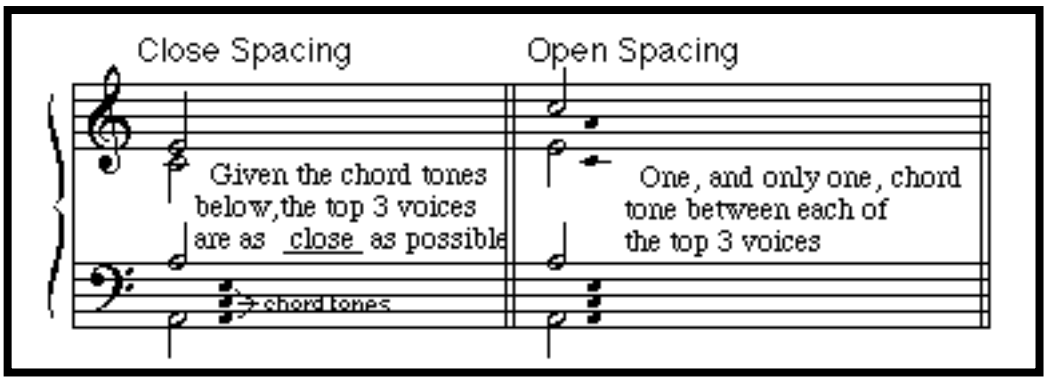
2. IDENTIFY the doubled chord tone as the root, third or fifth.



3. WRITE inversion figures (5/3, 6/3, or 6/4) and the doubled note for each of these chords:



14.4 Learn about close and open spacing

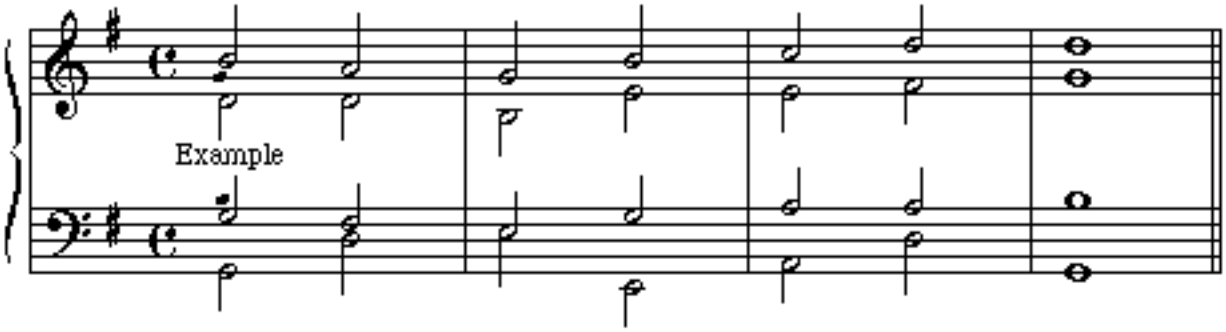


•Recall from Book 2 that a chord tone is a note of a chord for which an octave is not specified. Chord tones are notated with small noteheads without stems.

Follow these spacing and doubling suggestions:
•Adjacent voices, except bass and tenor, should never be more than an octave apart.
•In root position, double the root.

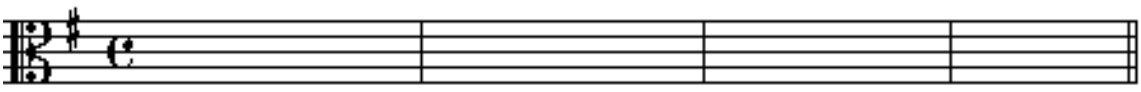
This spacing and doubling can be achieved by spacing the top three voices in either of these ways:
• In close spacing--when there are no chord tones between the top three voices. OR
• In open spacing--when there is one, and only one, chord tone between each of the top three voices.
• The interval between the bass and tenor does not matter in determining close and open spacing.

The chords in the following phrase are in open spacing.
DRAW a dot for the chord tone between each of the top three voices.



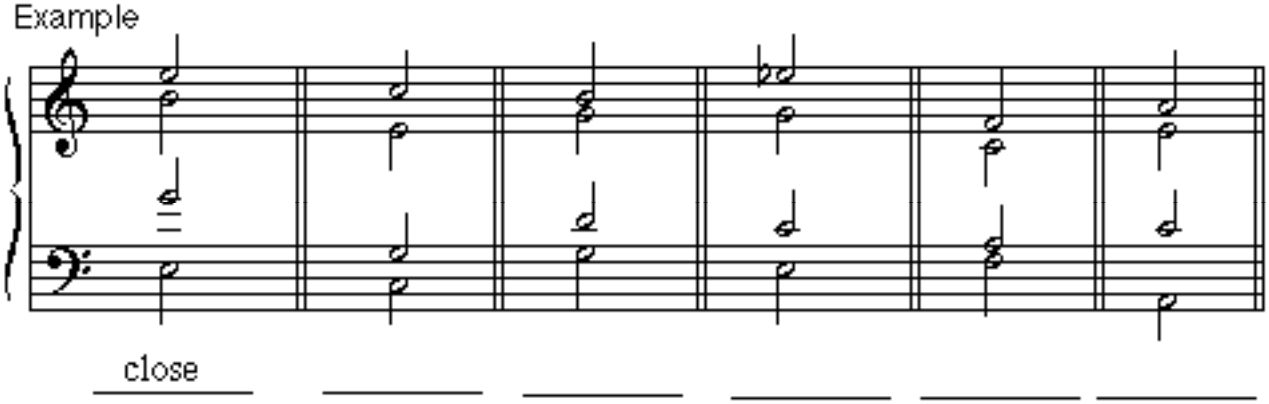
• In Bach's time the alto part in choral music was written in alto clef.
• In alto clef the middle line is middle C.

REWRITE the alto part in the above phrase in alto clef.

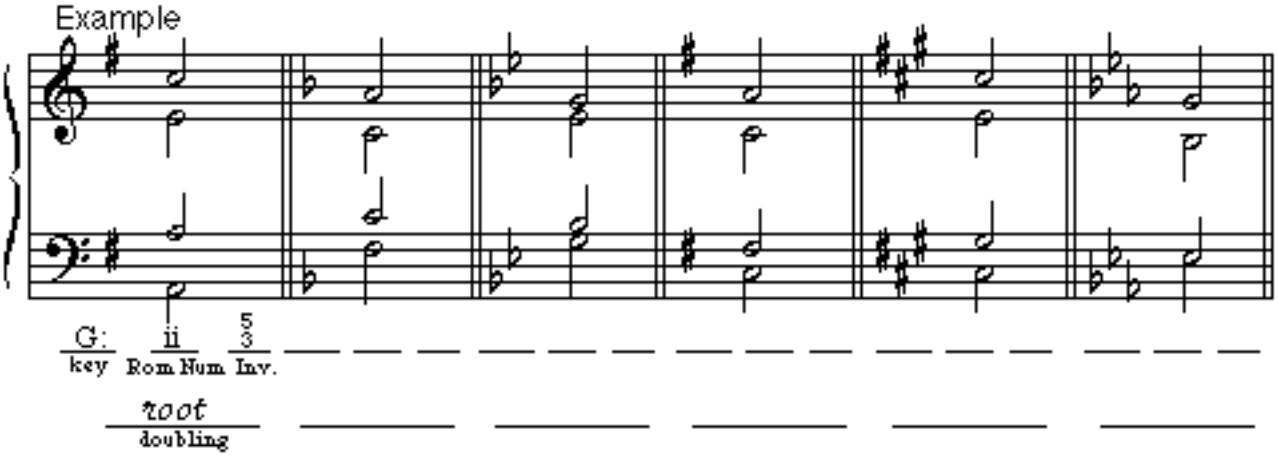


14.5 Write triads in close spacing

1. IDENTIFY these triads as being in close or open spacing.



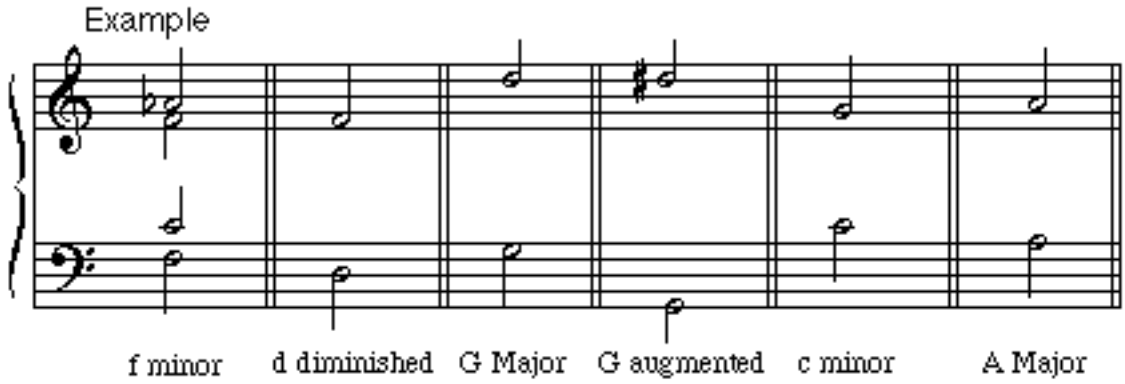
2. WRITE the key, Roman numeral, inversion figures and the doubled note for each of the following chords. IDENTIFY the doubled note as the root, third or fifth.



3. FILL IN the alto and tenor by using close spacing. All chords are in root position. Start with the top note and work down:

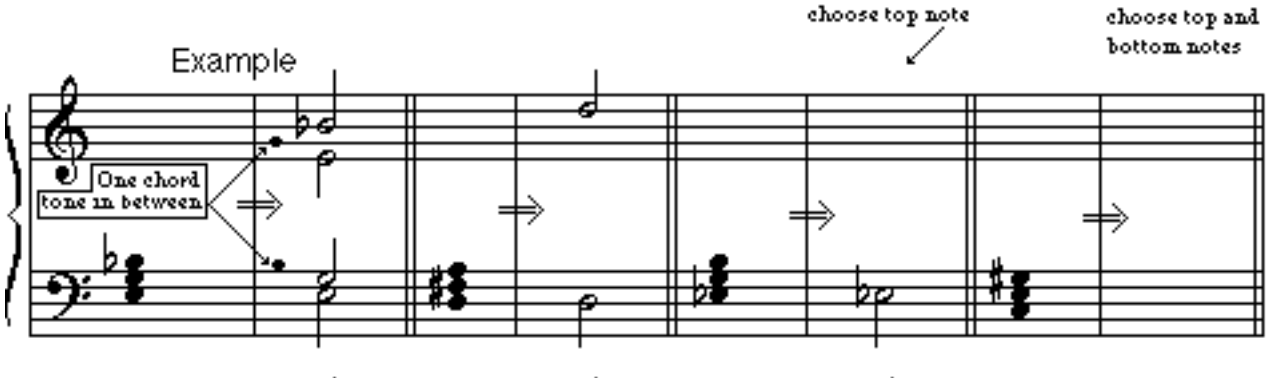
a. First write the alto so that there are no chord tones between the alto and soprano.

b. Then fill in the tenor so there are no chord tones between the tenor and the alto.

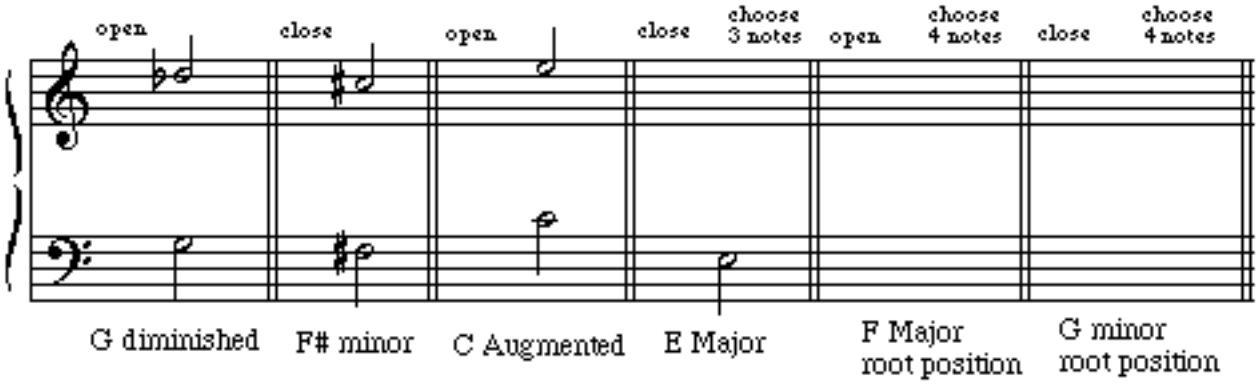


14.6 Write triads in both open and close spacing

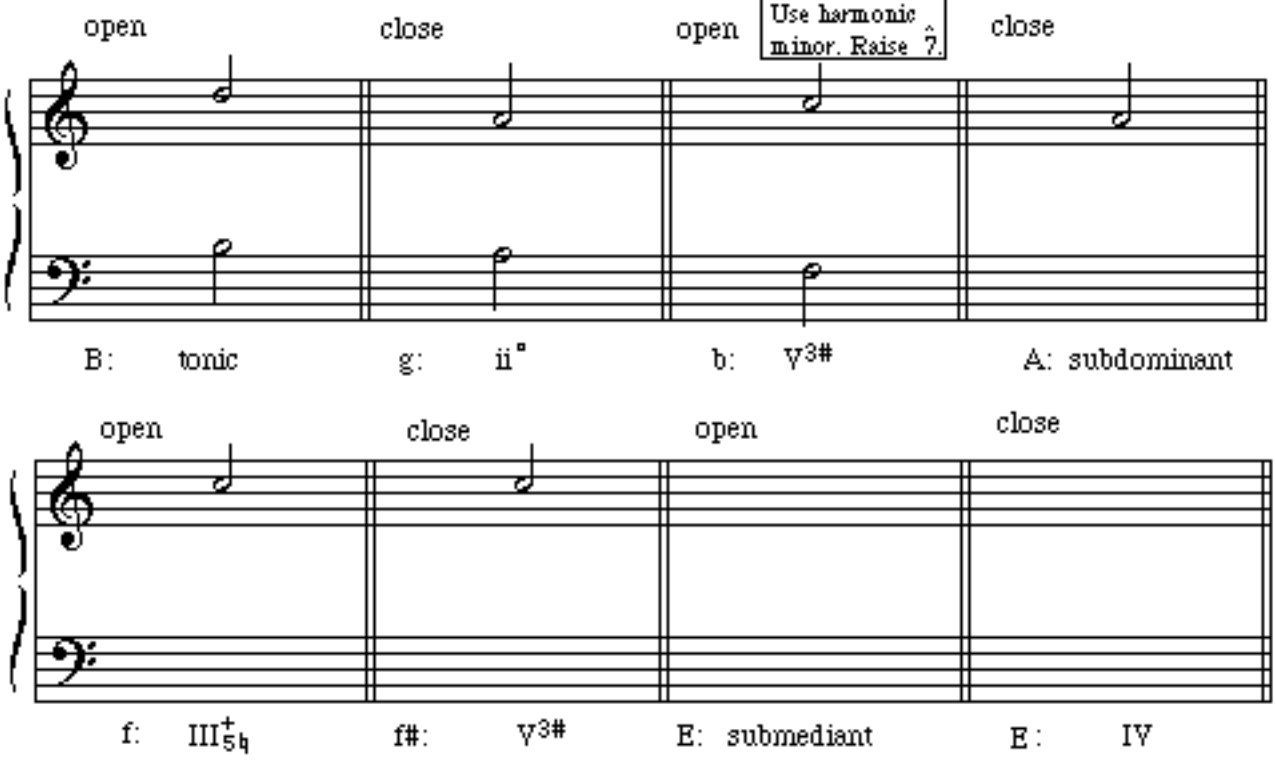
1. COMPLETE rewriting these triads in open spacing. Always work from the top note down.



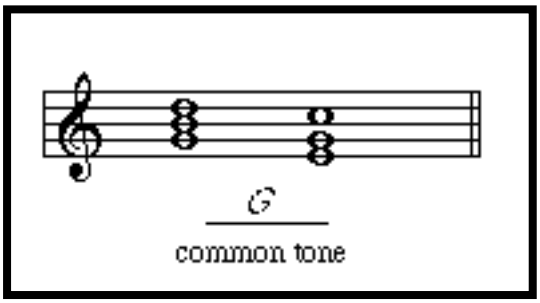
2. FILL IN the missing voices according to the given spacing.



3. WRITE key signatures and missing voices. All triads are in root position.

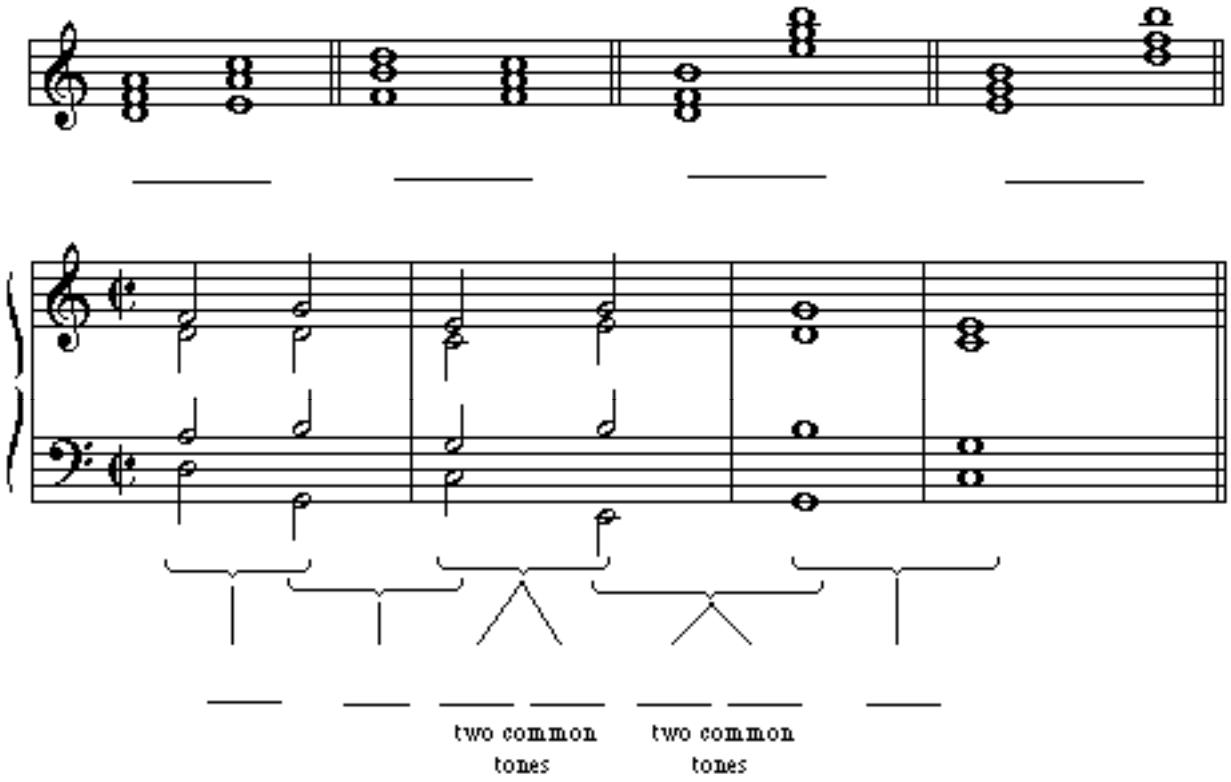


14.7 Find the common tone for two triads

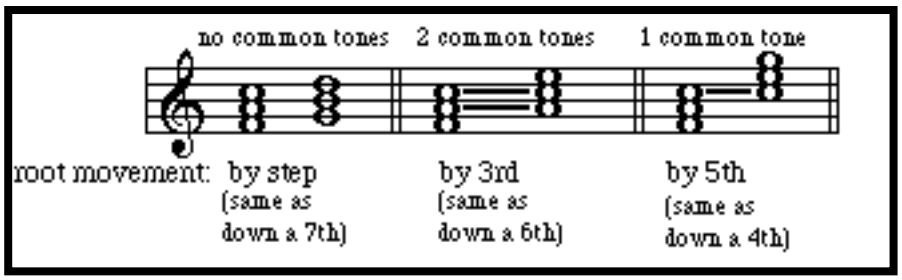


When moving from one chord to another it is important to be able to identify the note(s) common to both chords--the common tone(s).

IDENTIFY the common tones for these pairs of triads. They may be in different octaves.



14.8 Find common tones and relate them to voices

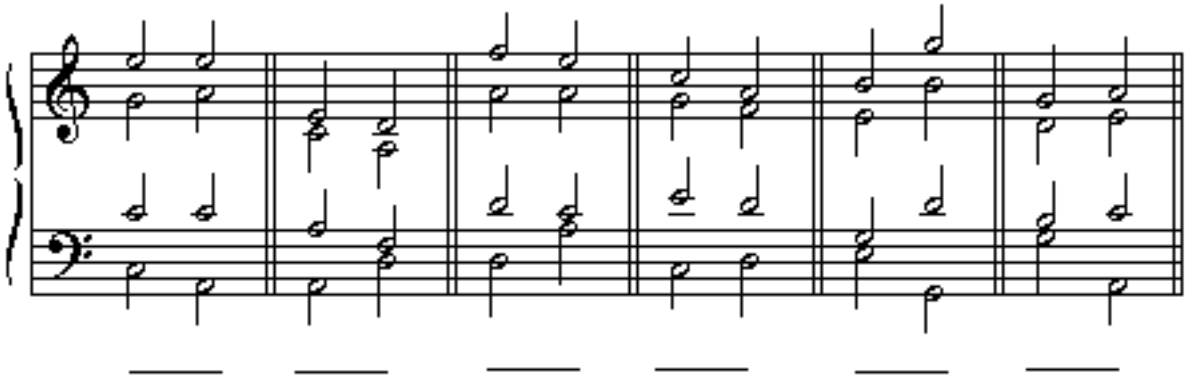


If one chord follows another and:
- if the root moves by step or by seventh, then the two chords have no common tones.
- if the root moves by third or by sixth, then the two chords have two common tones.
- if the root moves by fourth or by fifth, then the two chords have one common tone.

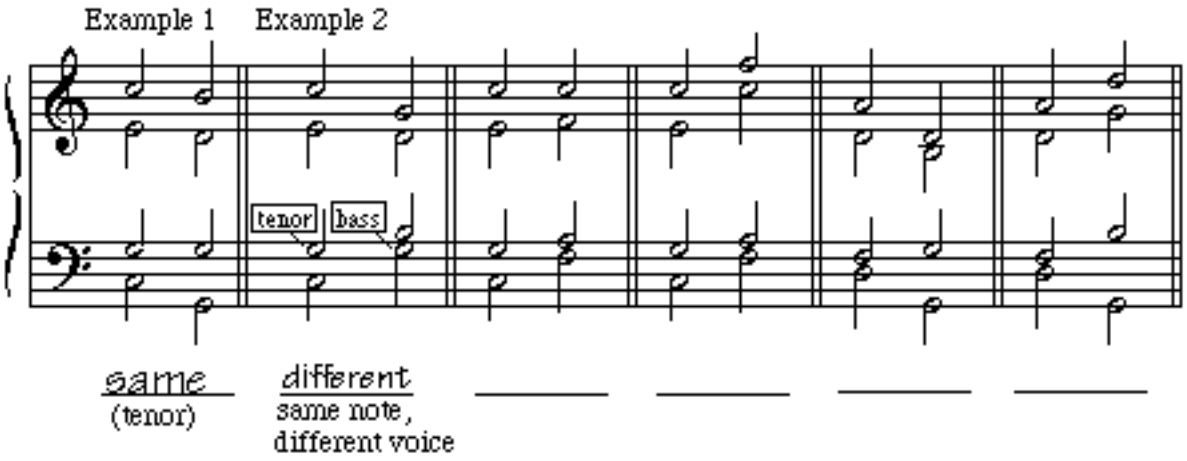
In root position chords, look at the bass to find the number of common tones.

---

1. WRITE the number of common tones, 0, 1 or 2, below each pair of chords.
   All chords are in root position.



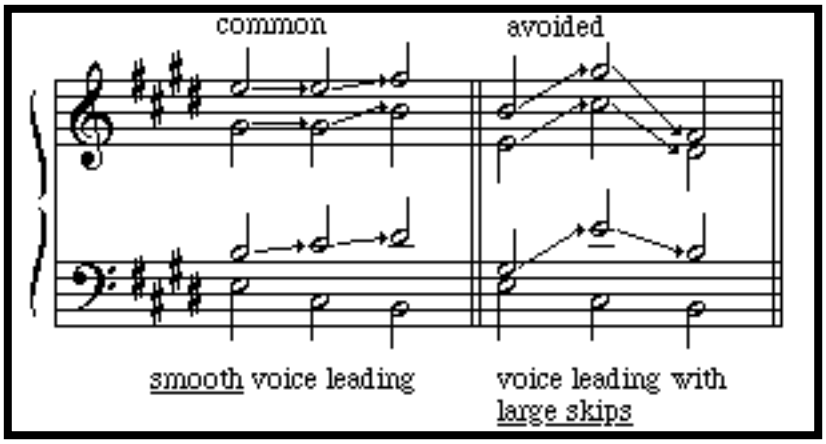
2. For each pair of chords, WRITE "same" if the common tone is kept in the same voice or
   WRITE "different" if the common tone moves to a different voice.



Chapter 15 The Smoothest Voice Leading:
Common Tone-Stepwise and Contrary Motion-Nearest

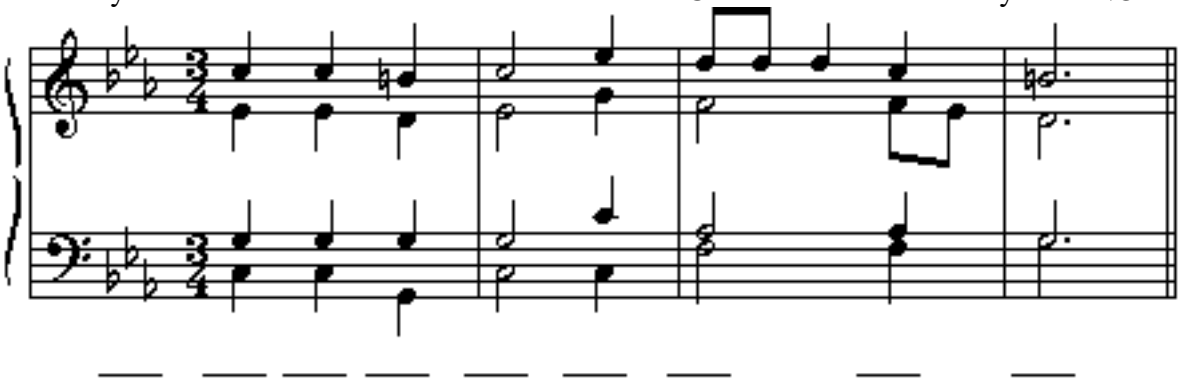
In this chapter you will:
1. Study a phrase of choral music
2. Connect two chords with Common Tone-Stepwise (CTS) voice leading
3. Write more chords with CTS; one common tone, root by 5th (4th)
4. Write more chords with CTS: two common tones, root by 3rd (6th)
5. Harmonize a phrase using CTS
6. Identify contrary, oblique, similar and parallel motion
7. Connect chords with Contrary Motion-Nearest (CMN) voice leading; root by step
8. Harmonize a phrase using CTS and CMN

15.1 Study a phrase of choral music



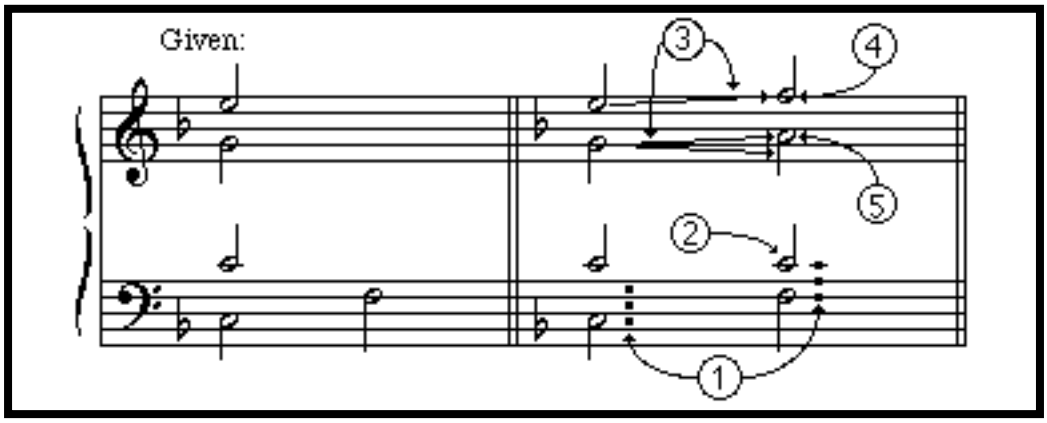
•To write a series of chords typical of what you might hear in a church choir, you must look at each note and be aware of how that voice is moving. Is the voice going up, going down, or staying the same? Does it move by step or by skip? This melodic movement is called voice leading.
•The ideal voice leading in this style is smooth. See the examples above and the Christmas carol at the bottom of the page. In the carol the voices usually stay on the same note or move by step. No voice has a melodic leap of more than a fourth. This kind of writing creates a flowing sound that is easy for the singers to read. Chapter 15 will teach you to write in this way using two techniques:
Common Tone-Stepwise (CTS) and Contrary Motion-Nearest (CMN).*

WRITE the key and Roman numerals in the blanks for this Christmas carol. The key is MINOR.



*The terms "Common Tone-Stepwise" and "Contrary Motion-Nearest" are taken from the books *Scales, Intervals, Keys, Triads, Rhythm and Meter* and *Basic Harmonic Progressions,* both by J. Clough and J. Conley.

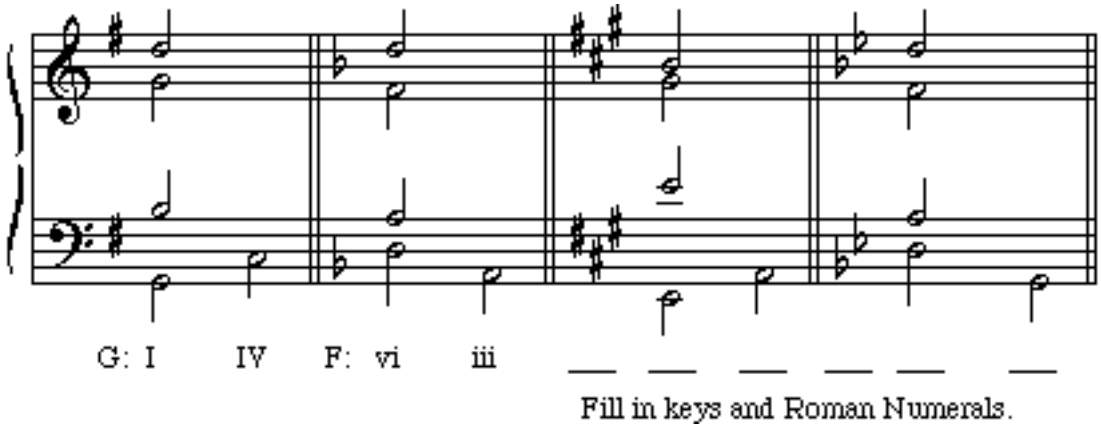
15.2 Connect two chords with Common Tone-Stepwise (CTS) voice leading



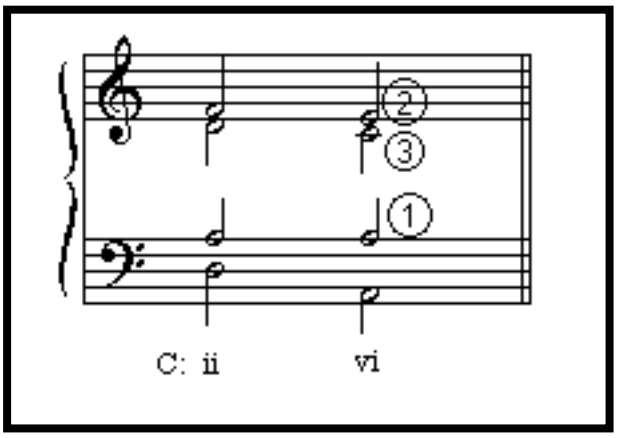
• Common Tone-Stepwise (CTS) is a kind of voice leading which keeps the movement of the top three voices as smooth as possible. These voices either stay stationary or move by step. (Unlike the other voices, the bass will skip to the next note.) CTS can be used whenever the chords are in root position and there is a common tone between the chords.
• To write the top three voices of a second chord using CTS voice leading, refer to the above example and follow these steps:

1. Identify the chord tones with dots.
2. Find the common tone, and identify it among the top three voices of the first chord. Write it in the second chord in the same voice in which it appeared in the first chord.
3. In the remaining voices, draw arrows from the notes in the first chord to the lines and spaces that represent chord tones one step away.
4. In the voice with one arrow, write the note indicated by that arrow.
5. In the remaining voice, write the note which completes the triad--one chord tone will be missing.

WRITE the top three voices for the second chord using CTS voice leading. USE all five steps.



15.3 Write more chords with CTS; one common tone, root by 5th (4th)

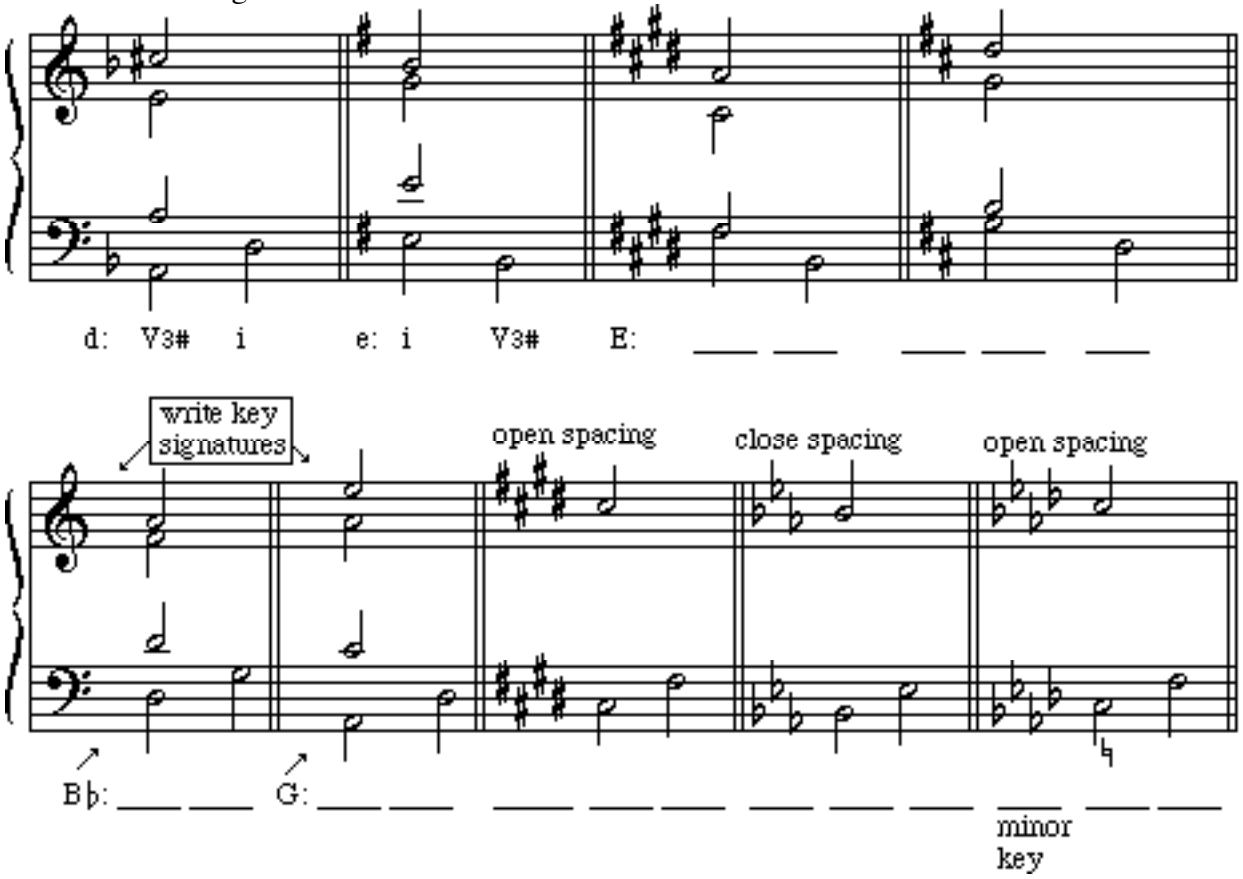


•With practice you will be able to skip some of the steps in the previous worksheet and remember just <u>three basic steps</u>:

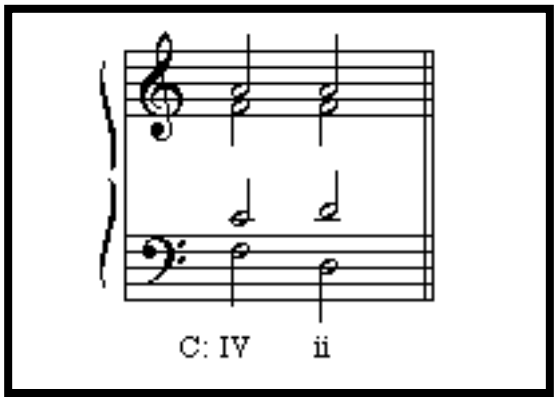
1. Find the common tone and keep it in the same voice.
2. Move the voice with no choice by step.
3. Move the remaining voice by step to complete the triad.

---

1. WRITE the missing notes using CTS voice leading. DO NOT DRAW arrows.
2. FILL IN the missing information.

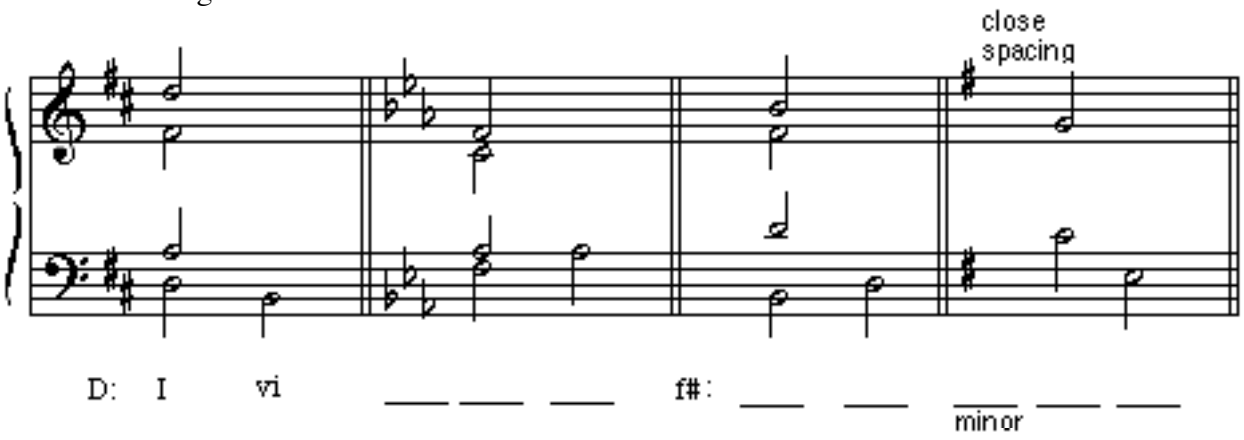


15.4 Write more chords with CTS: two common tones, root by 3rd (6th)

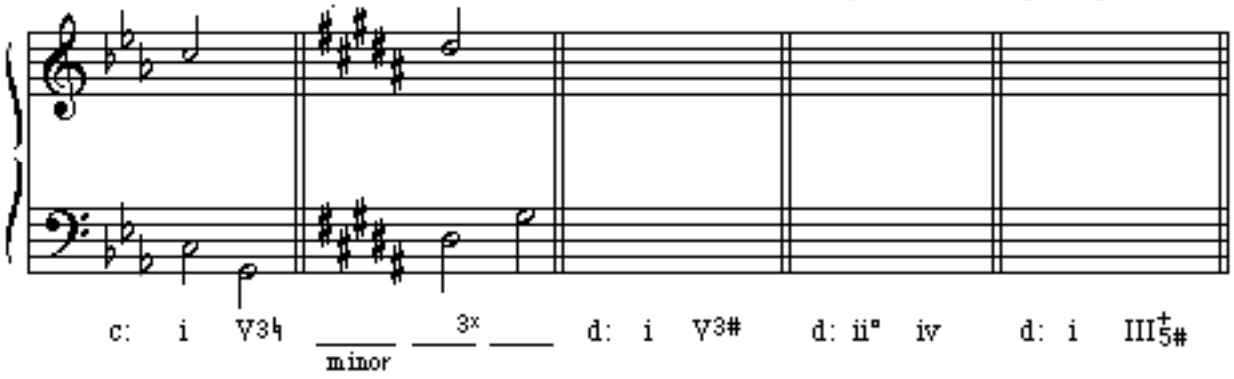


- CTS also can be used when root movement is by 3rd (or 6th) and there are two common tones.
- Combining the steps on worksheet 15.3 to apply to root movement by 3rd, 4th, 5th and 6th:
    1. Find the common tone(s) and keep it (them) in the same voice(s).
    2. Move the remaining voice(s) by step while completing the triad.
- When choosing the notes of an initial chord, use open or close spacing.

WRITE the missing notes using CTS voice leading, and
FILL IN the missing information.



Some of the following have root movement by 4th (5th). Choose open or close spacing.

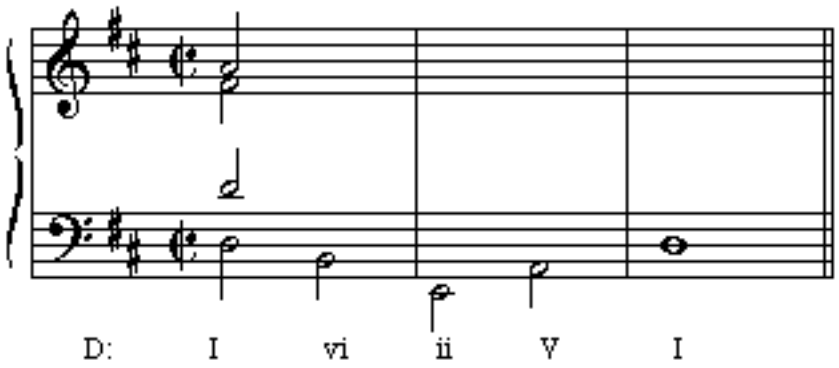


15.5 Harmonize a phrase using CTS

•To harmonize a phrase of music, always connect each chord to the previous chord, even over the bar line.

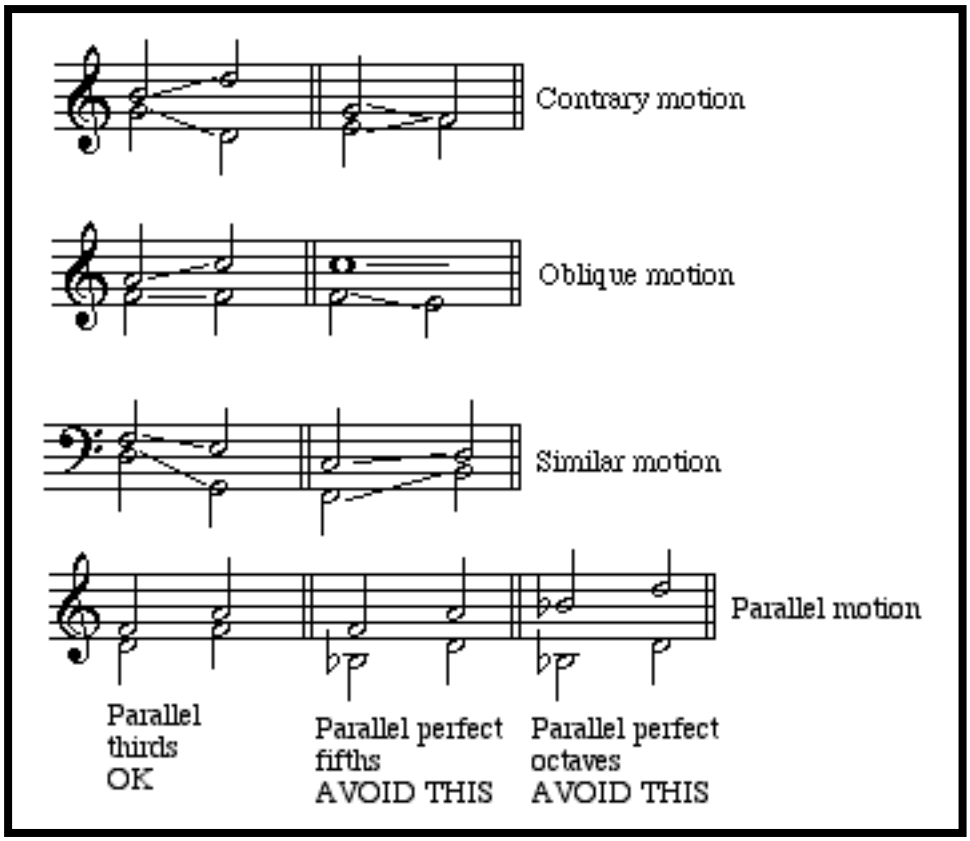
---

1. WRITE the top three voices in this phrase using CTS voice leading.



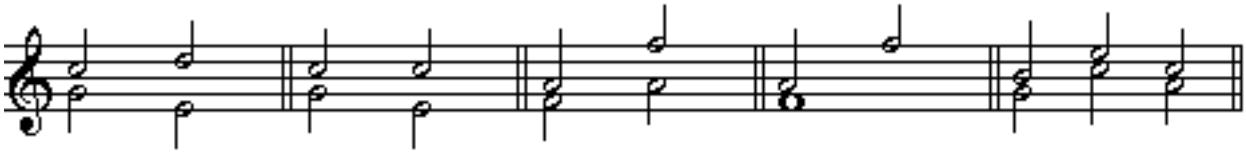
2. PLAY or ASK someone to play your phrase, or COPY your phrase on a computer.
LISTEN to it.
HOW DOES IT SOUND?

15.6 Identify contrary, oblique, similar and parallel motion

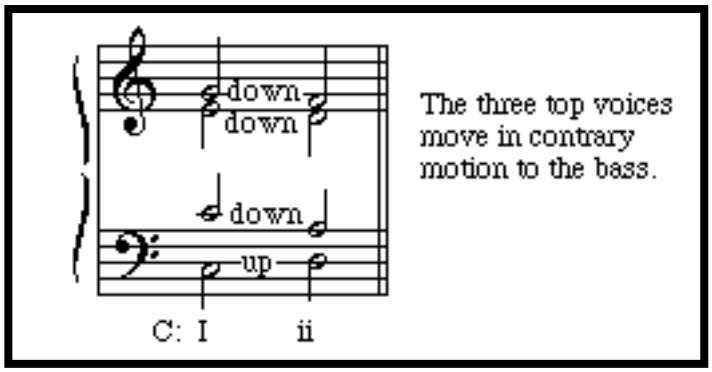


• When two voices move in different directions, the motion is called contrary.
• When one voice remains the same while the other moves, the motion is called oblique.
• When two voices move in the same direction the motion is called similar.
• When two voices move in similar motion by the same amount, the motion is called parallel.
Always avoid parallel perfect octaves and fifths in the four part music for these workbooks.

LABEL the motion in these exercises.

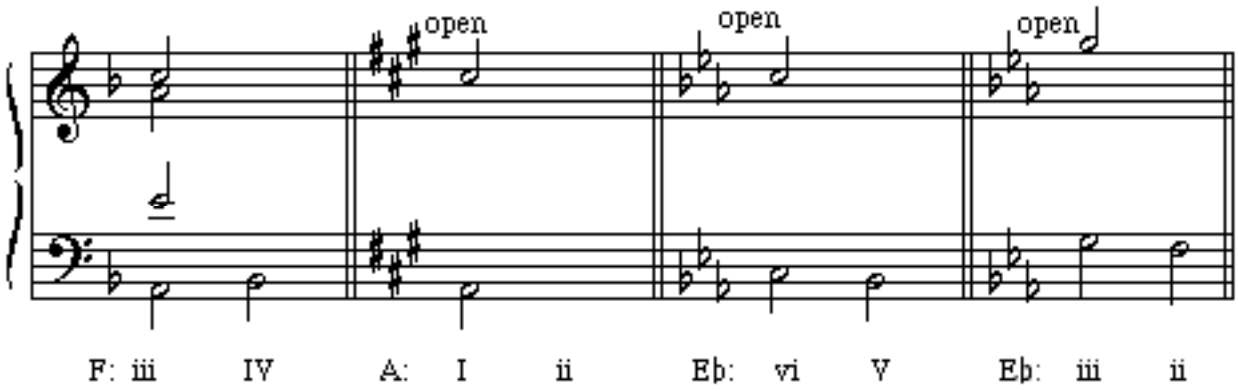


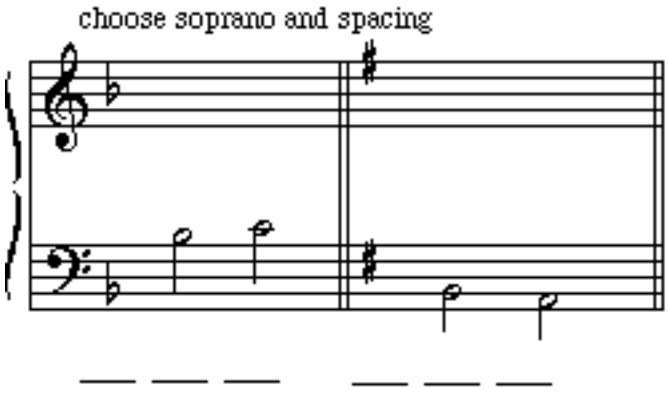
15.7 Connect chords with Contrary Motion-Nearest (CMN); root by step



• Contrary Motion-Nearest (CMN) is a kind of voice leading which is used when root movement is by step (or 7th) and there are no common tones. CMN provides the smoothest possible voice leading while avoiding parallel octaves and fifths.
• In CMN voice leading, the top three voices move contrary to the bass to the nearest chord tone. Two voices move by step and one voice skips a third.
• CMN can be used for leaps in the bass of a 7th in root position chords, but this melodic interval is rare and will not be used in the following exercises.

WRITE the missing voices and FILL IN the missing information.





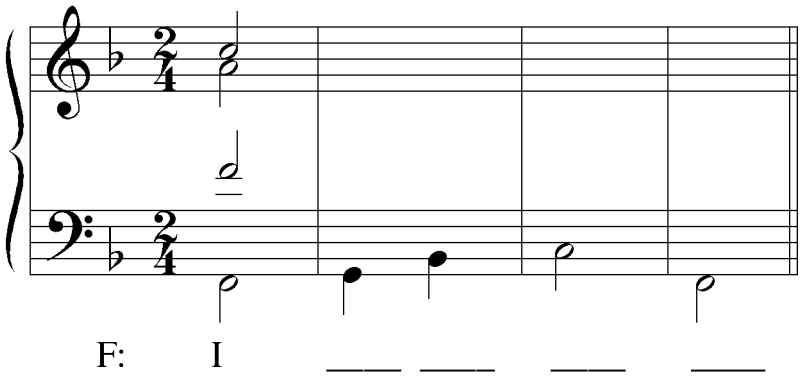
15.8 Harmonize a phrase using CTS and CMN

When deciding between CTS and CMN, first see if there are any common tones in adjacent chords.

- If there are any common tones, you must use CTS. Do not use CMN if there are common tones.
- If there are no common tones, you must use CMN.

---

1. FILL IN the chords' Roman numerals in the spaces below the staff
2. WRITE the top three voices in this phrase using CTS and CMN voice leading, where appropriate.

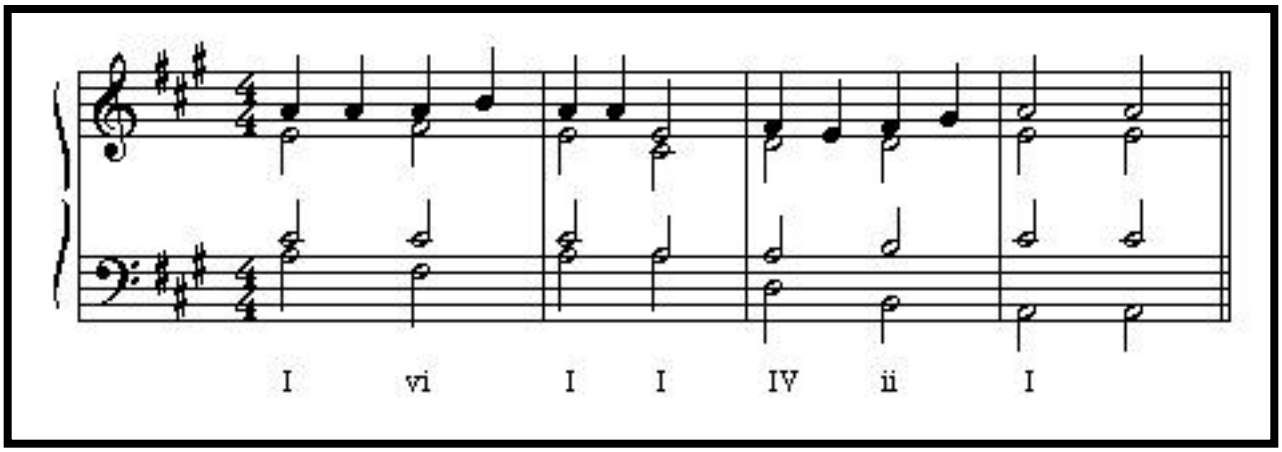


3. PLAY or ASK someone to play your phrase, or COPY your phrase on a computer.
LISTEN to it.
HOW DOES IT SOUND?

Chapter 16 CTS and CMN in Musical Phrases

In this chapter you will:
1. Identify CTS and CMN voice leading
2. Decide on CTS or CMN voice leading
3. Use CTS and CMN in short phrases
4. Write a phrase for string quartet
5. Recognize voice crossing and overlapping voices
6. Keep voices in their ranges, and avoid voice crossings and overlapping voices
7. Harmonize more phrases with CTS and CMN
8. Harmonize a longer phrase

16.1 Identify CTS and CMN voice leading



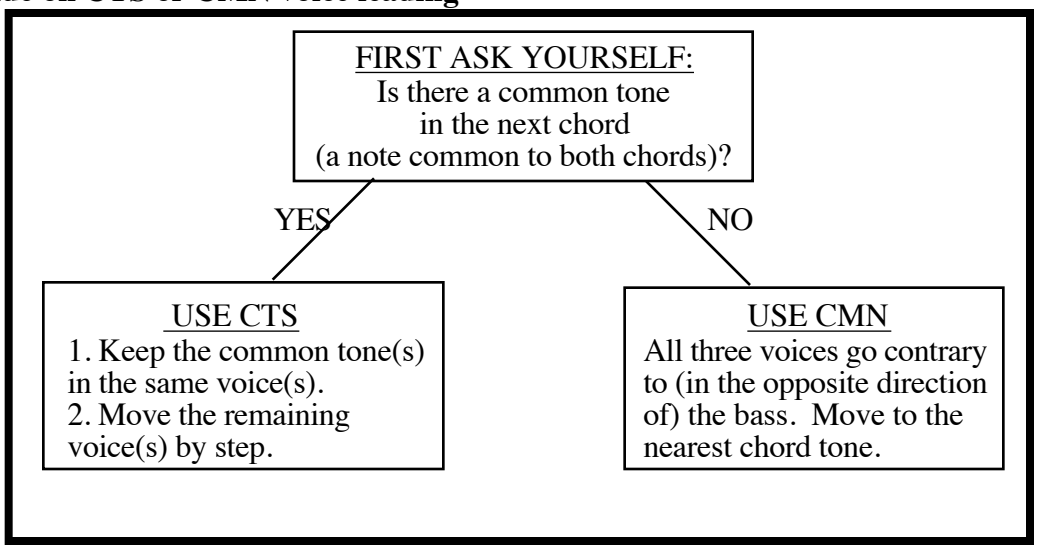
In this arrangement of "Good King Wenceslas" the voice leading is always CTS or CMN with the addition of these notes in the soprano:
• In measure 1, beat 2, there is a repeated note
• In measure 1, beat 4 and in measure 3, beat 2, there are notes which move away by step and then back to the same note. These notes are called neighbor notes.
• In measure 3, beat 4, there is a passing tone. See worksheet 15.8.
• In measure 2, beat 3, there are changes in the top three voices over a repeated root in the bass.

In Chapter 16 you will harmonize full phrases of music and provide rhythmic and melodic interest by inserting notes, similar to those above, between chords.

The Roman Numerals below refer to the phrase at the top of the page.
IDENTIFY the kind of voice leading between each chord as CTS or CMN in the spaces provided.

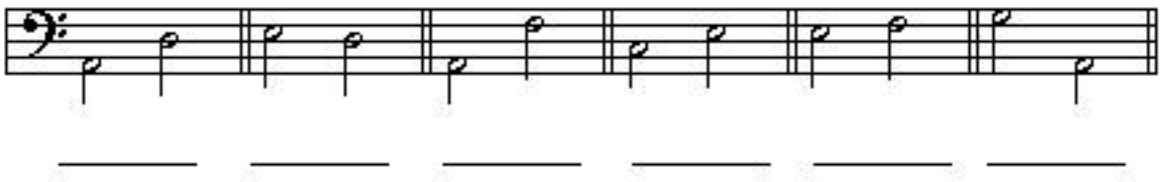
I ____ vi ____ I (change in top voices) I _____ IV _____ ii ____ I

16.2 Decide on CTS or CMN voice leading



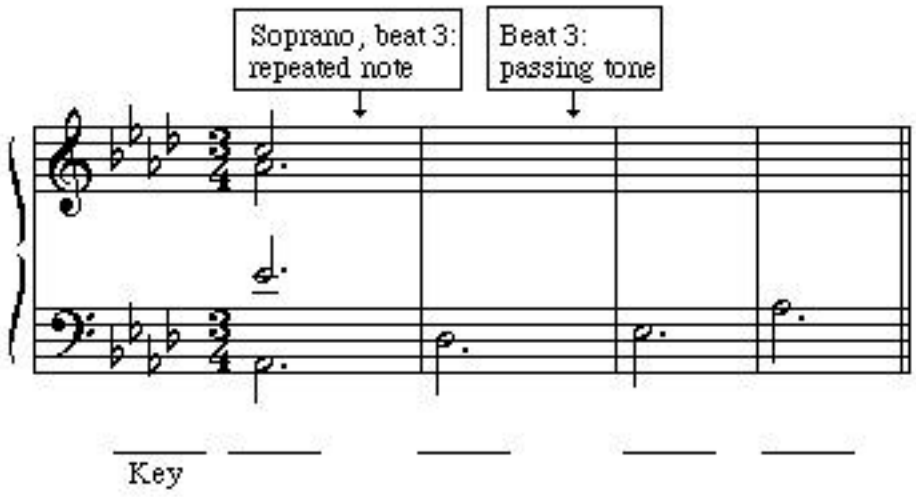
• To decide on the proper voice leading when given a bass line for root position chords, follow the above chart.
• Recall from worksheet 14.8 that when the root moves by step (or 7th) there will be no common tones. Use CMN.
• When the root moves by any other interval there will be at least one common tone. Use CTS.

HOW should the upper voices move, CTS or CMN, for the following pairs of bass notes? Assume root position triads.

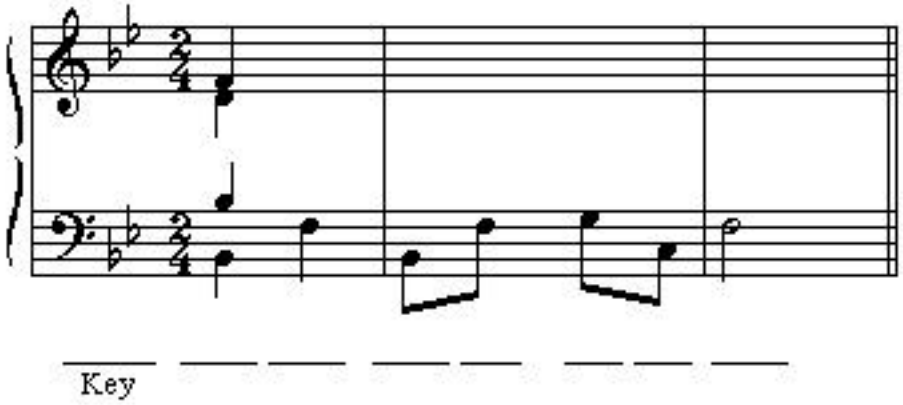


16.3 Use CTS and CMN in short phrases

1. WRITE the key and Roman Numerals under these phrases. All chords are in root position.
2. WRITE the top three voices for the whole phrase using CTS and CMN only.
   Ignore for now the added tones indicated above the staff.
3. ADD notes between the chords as indicated.



In the following phrase after you have finished your harmonization, insert notes of your choice

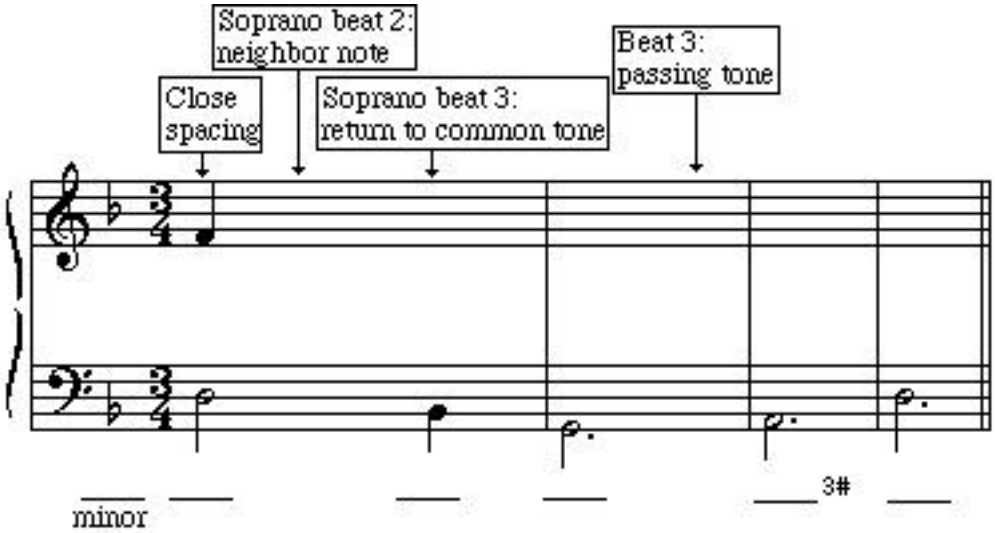


16.4 Write a phrase for string quartet

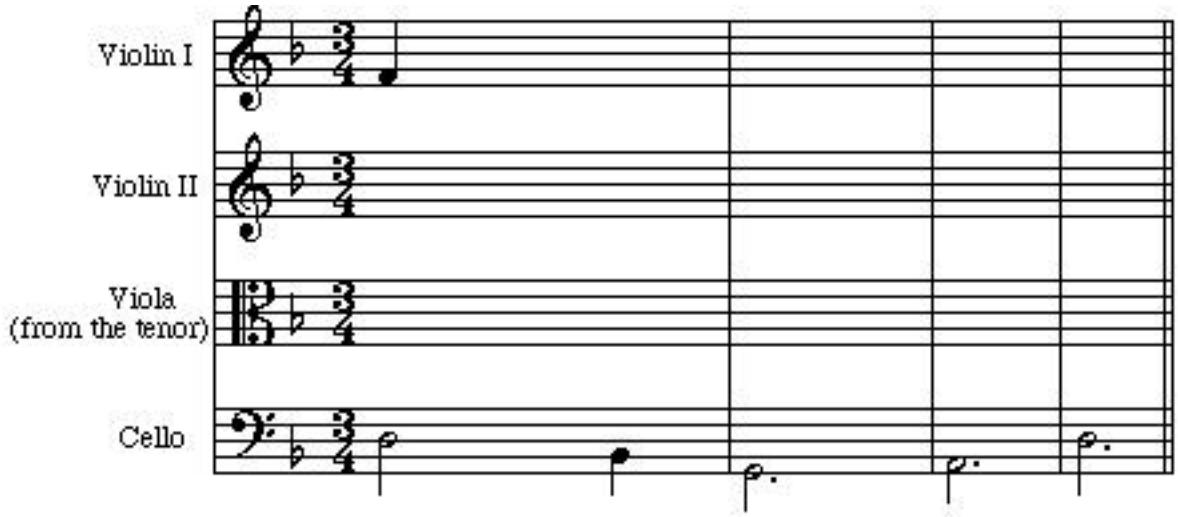
• String quartets have two violins, a viola and a cello. The two violin parts are written in treble clef, the viola part is written in alto clef and the cello part is written in bass clef.
• In a string quartet each instrument has its own staff. When only one part is written on a staff, the stems go up when the notehead is below the middle line. Otherwise stems go down.
• In transcribing choral music for string quartet, the alto voice will not end up in alto clef. Instead the tenor voice, which becomes the viola part, will be written in alto clef.

---

1. FOLLOW instructions on the previous worksheet for the following phrase.



2. TRANSCRIBE the above phrase on a score for string quartet.



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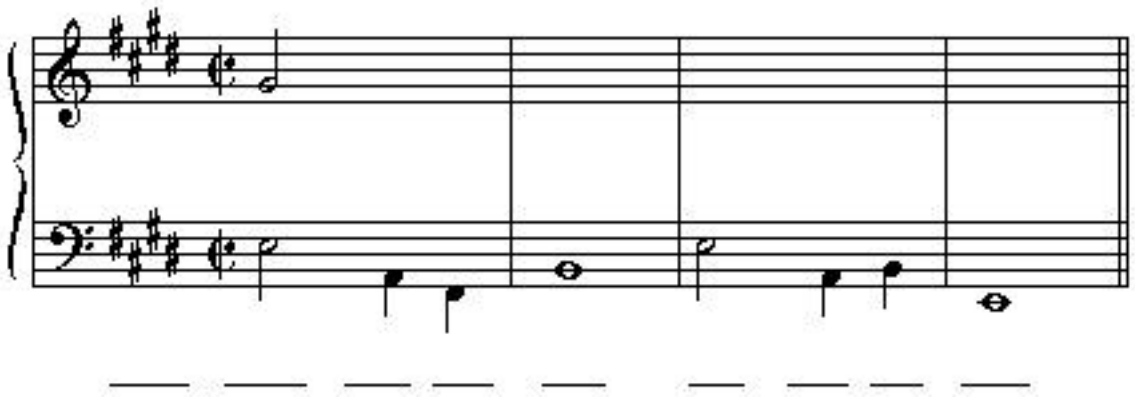
16.5 Harmonize a bass line

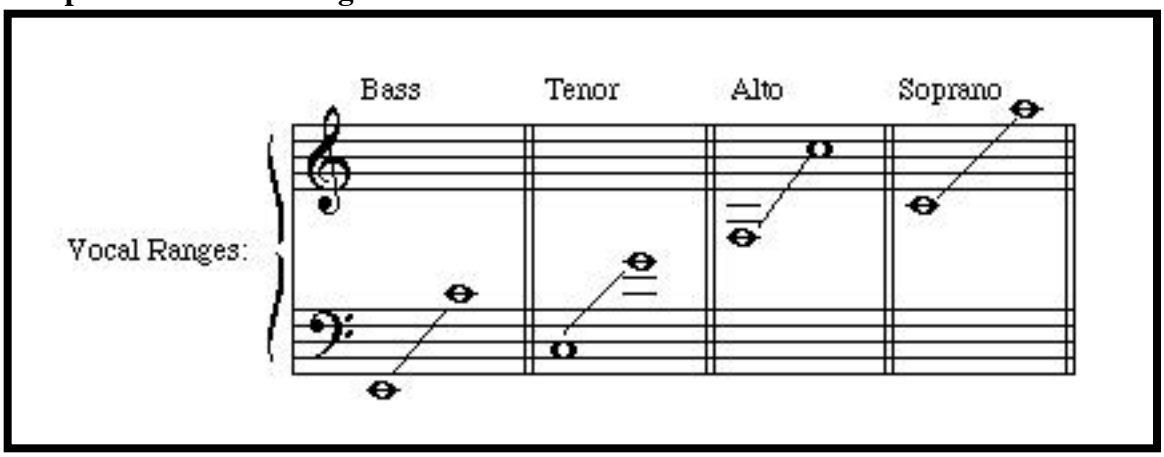
FILL IN the key and Roman numerals.

CHOOSE open or close spacing for the first chord.

CONNECT the chords for the bass line using CTS and CMN only.

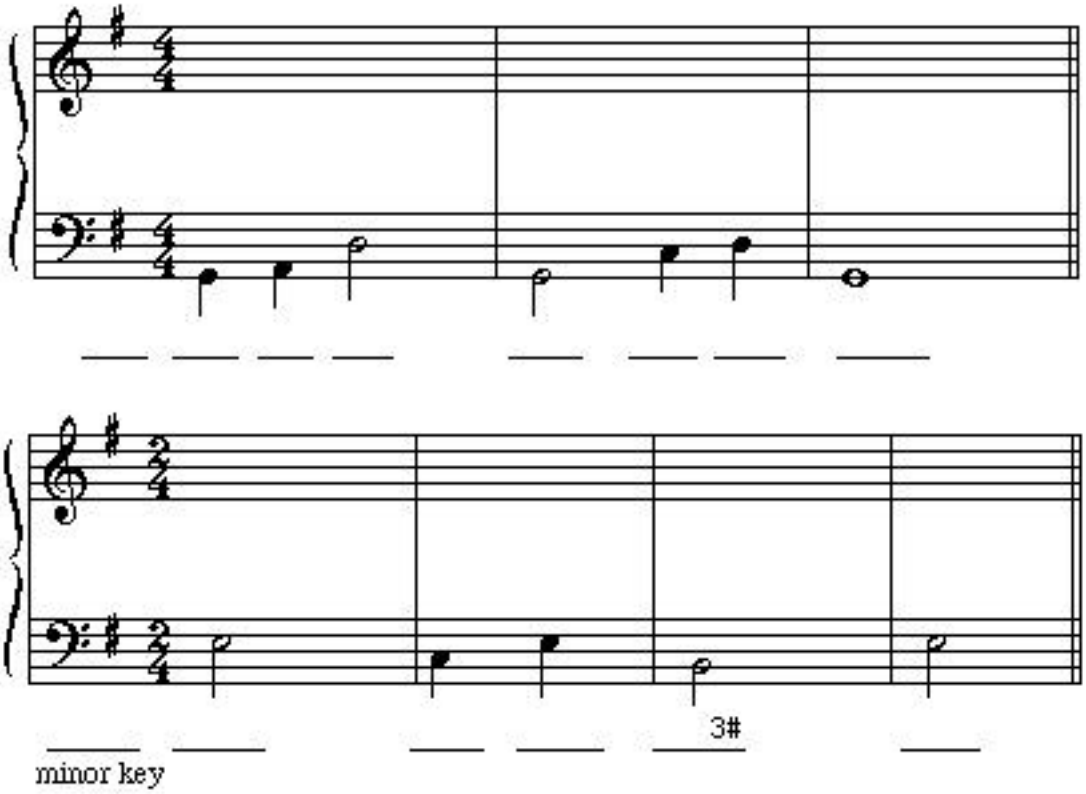


16.6 Keep voices in their ranges



When a starting chord or spacing is not given for a phrase, decide on the voicing:
• by looking at the bass line and starting the tenor high enough so that overlapping voices and voice crossings will not occur, AND
• by keeping each voice within the ranges shown above.
• You will be choosing among several correct voicing of the first chord.

In each of the following phrases:
1. FILL IN the key and Roman numerals.
2. DECIDE on the voicing of the initial chord.
3. WRITE the top three voices
4. USE passing tones whenever you use CMN.
5. ADD neighbor notes and repeated notes to provide rhythmic interest.



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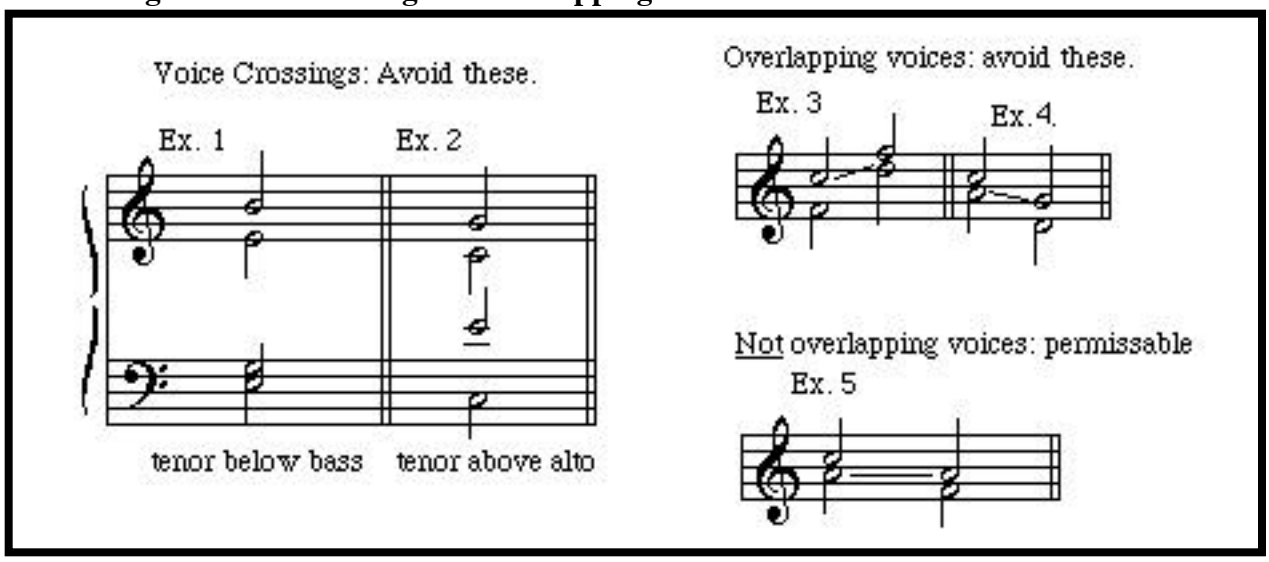
16.7 Recognize voice crossing and overlapping voices



To help distinguish the voices to the ear:

• Keep the voices in order from low to high. That is, avoid voice crossings, such as when the tenor goes below the bass (Example 1) or when the tenor goes above the alto (Example 2).

• Do not write a lower voice above a previous higher voice (Example 3) and do not write write a higher voice below a previous lower voice (Example 4). These are examples of overlapping voices and should also be avoided.

A voice may move to a note just sung or played by another voice (Example 5).

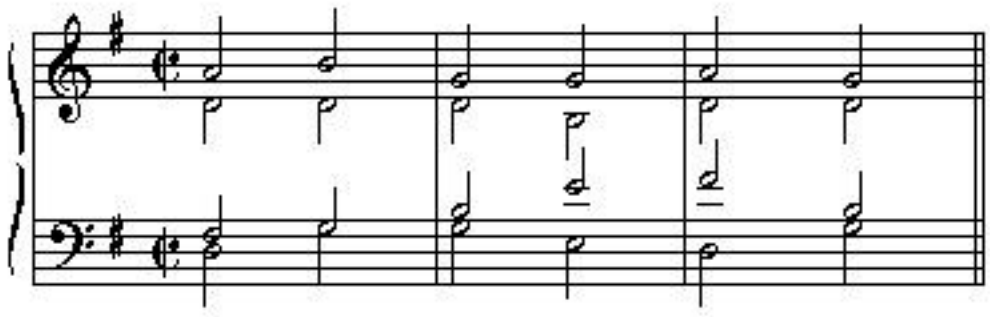
---

1. In the phrase below, in what measure(s) do(es) voice crossings occur?_____

2. Between which voices?_____

3. In what measure(s) do(es) overlapping voices occur?_____

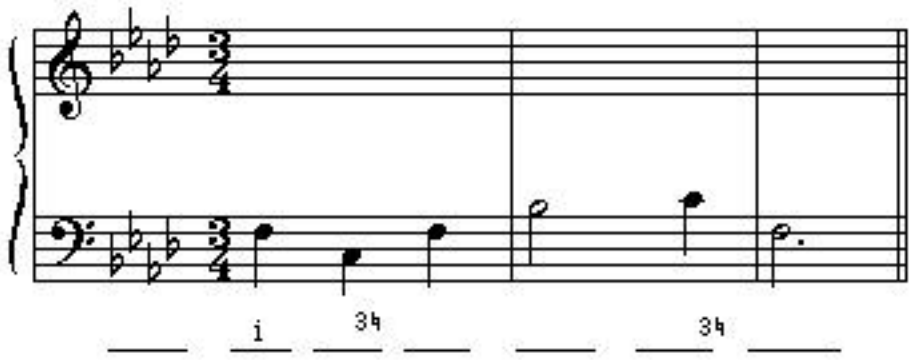
4. In which voices?_____

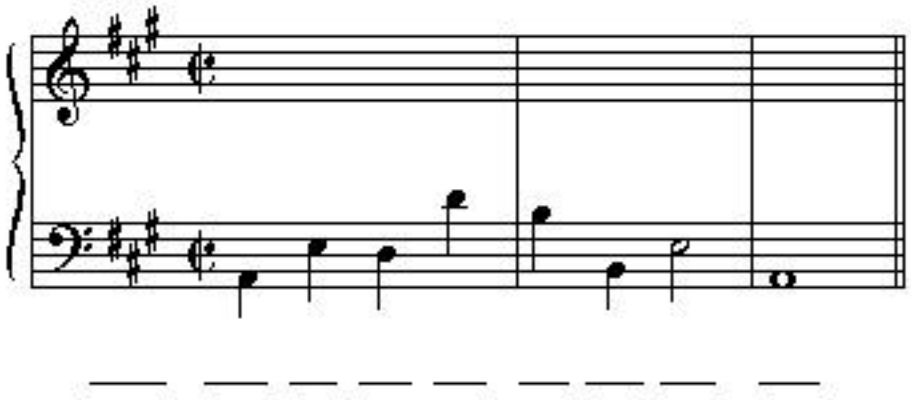


16.8 Avoid voice crossings and overlapping voices

When the root is repeated you are free to move to another voicing. Be sure it is either open or close spacing. These spacings result in all three chord tones being represented and the root being doubled.

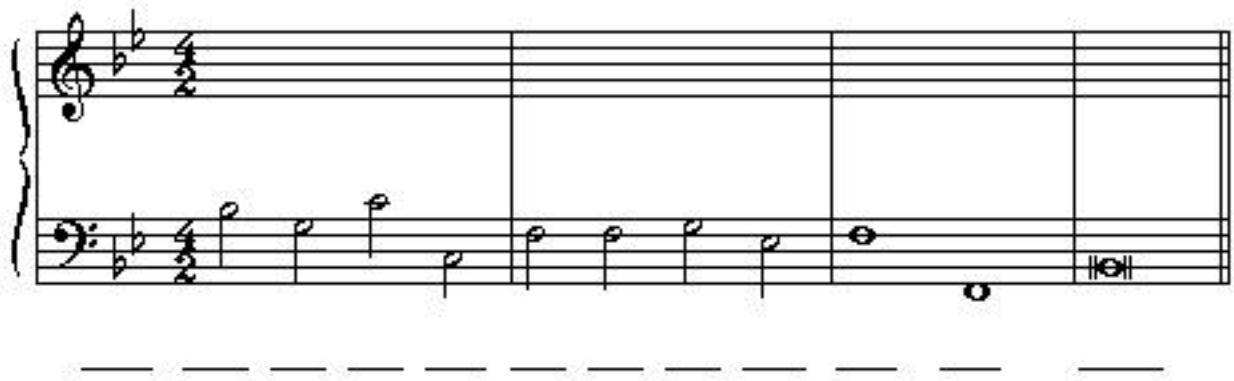
HARMONIZE these phrases.
Remember to START THE TENOR HIGH ENOUGH so that overlapping voices and voice crossings will not occur between the tenor and bass.





16.9 Harmonize a longer phrase

1. HARMONIZE this phrase.



2. WRITE the scale degree name of the root of each triad in the above phrase.

Measure	Beat	Scale Degree Name
1	1	Tonic
	2	
	3	
	4	
2	1	
	2	
	3	
	4	
3	1	
	3	
4	1	

Chapter 17 The Fundamental Harmonic Progression, I V I

In this chapter you will:

1. Find the fundamental harmonic progression in a chart
2. Find a progression with strong root movement
3. Find the fundamental harmonic progression in another chart
4. Expand the tonic triad with lower neighbors
5. Write the fundamental harmonic progression using CTS
6. Harmonize $\hat{2}$ as an upper neighbor
7. Insert passing tones
8. Avoid augmented 2nds

17.1 Find the fundamental harmonic progression in a chart

Chapter 17 begins a concept of expanding harmonies which will continue until the end of these workbooks. A simple progression will expand, one chord at a time, and you will learn the voice leading for each chord as it is introduced into the progression. The sequence of chords follows that in a book by Aldwell and Schachter:[1]

•In Worksheet 17.4 the tonic triad (I) will expand to form the fundamental harmonic progression:

I V I

In this progression, movement from I to V, like movement away from the familiarity of home, creates some tension. Returning to I, then, releases that tension, just like a return back home.

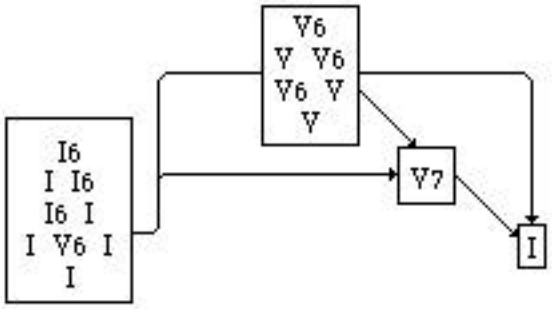
•The initial tonic and the dominant (V) in the fundamental harmonic progression will themselves expand or be elaborated. For instance the initial tonic harmony will move to its first inversion, $I^{6/3}$, without changing the impression of an opening tonic. (The figures $^{6/3}$ are usually abbreviated ^{6})

I I^6 V I

•Other chords will elaborate the main harmonies as well. For instance V^6 will expand the initial tonic when it is inserted between two I chords:

I V^6 I V I

•The following chart shows these expansions and the addition of a V^7 chord. This is the chart which introduces Chapter 21 at the beginning of the next workbook.



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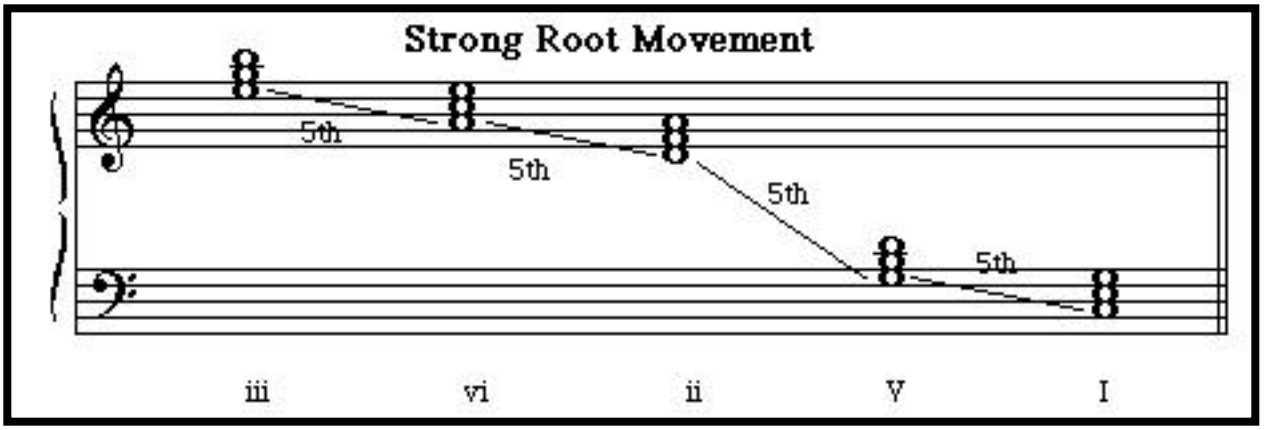
1. CIRCLE the chords of the fundamental harmonic progression in the above chart.
2. Another term for an expanded harmony is an _____ harmony.
3. The I chord is also called the _____ chord.
4. The V chord is also called the _____ chord.

[1] Aldwell, E. & Schachter, C. *Harmony and Voice Leading* (NY: Harcourt, Brace and Jovanovich, 1989).

17.2 Find a progression with strong root movement



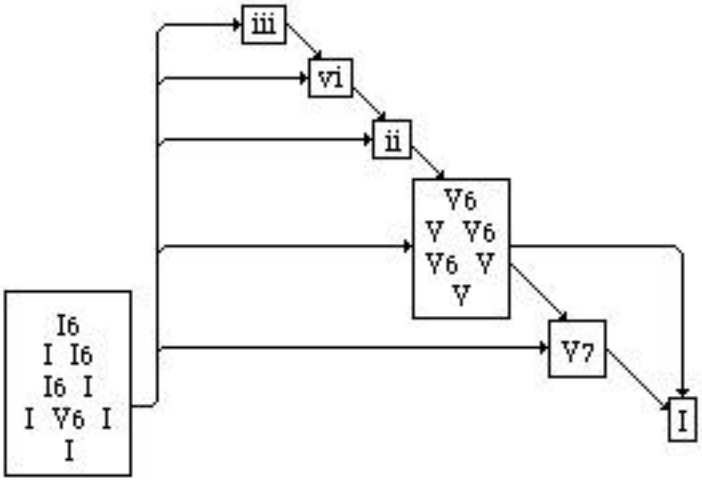
•Remember that I moves to the dominant in the fundamental harmonic progression rather than to some other harmony. The triad built on $\hat{5}$ leads more convincingly back to I than does any other triad in the key. (The importance of $\hat{5}$ has acoustic origins: $\hat{5}$ is the first note of the overtone series after $\hat{1}$.) So the V I progression creates a release of tension and a sense of direction beyond that of returning "home" from any other chord. For this reason V I is called a strong harmonic progression.

•All progressions in which the root falls by perfect fifth, as it does from V to I, are strong progressions. So, as shown at the top of the page, iii moves strongly to vi, vi moves strongly to ii, and ii moves strongly to V.

•In addition to the elaborations on the previous page, iii, vi and ii will expand the fundamental harmonic progression into a series of strong progressions when they are inserted between I and V:

I iii vi ii V I

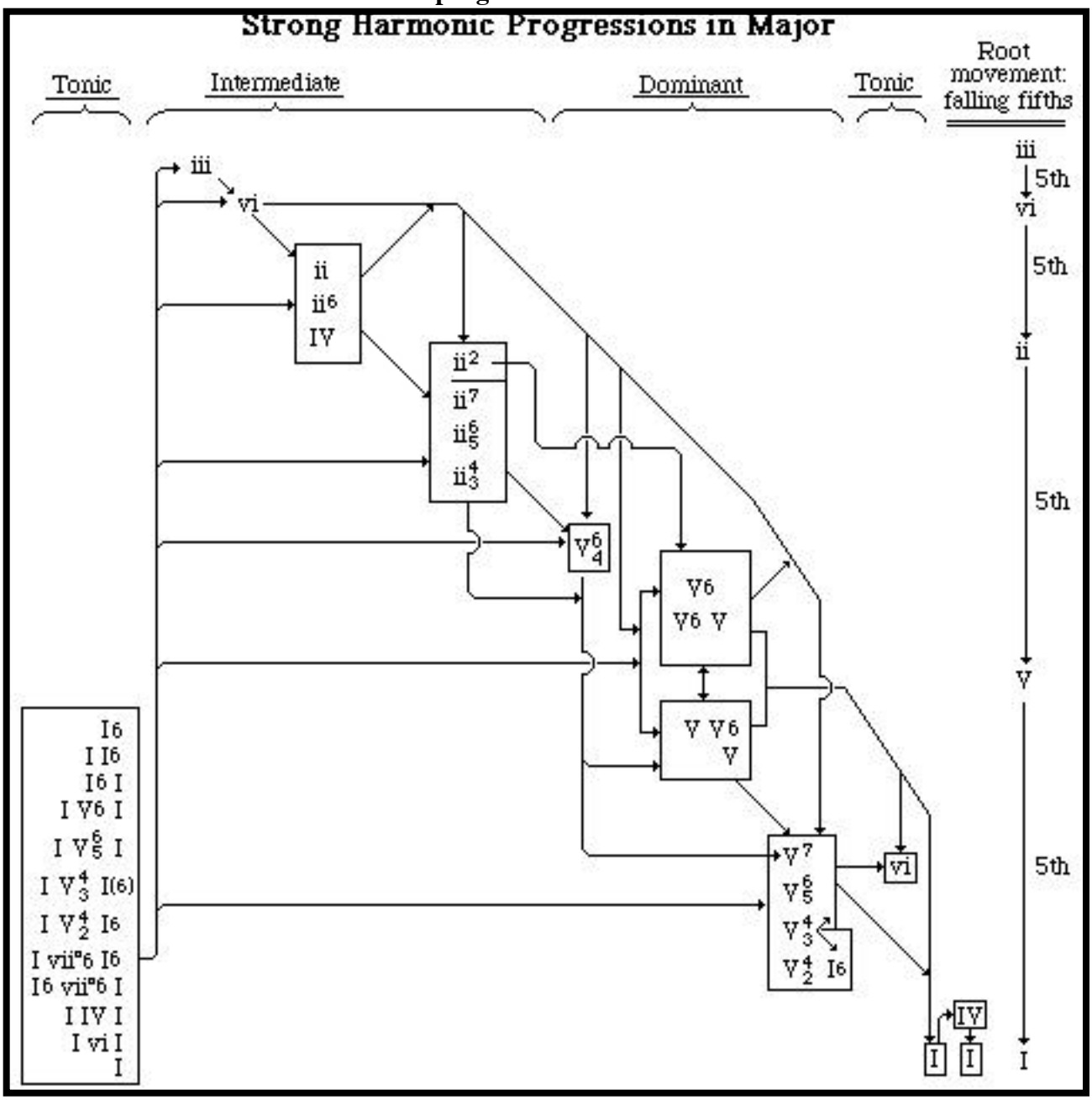
•The following chart includes these insertions and the elaborations on the previous page:



---

1. CIRCLE, in the above chart, the chords of the following progression: I6 I vi ii V V6 I.
2. TRACE the arrows between the chords of this progression and make them bold.

17.3 Find the fundamental harmonic progression in another chart



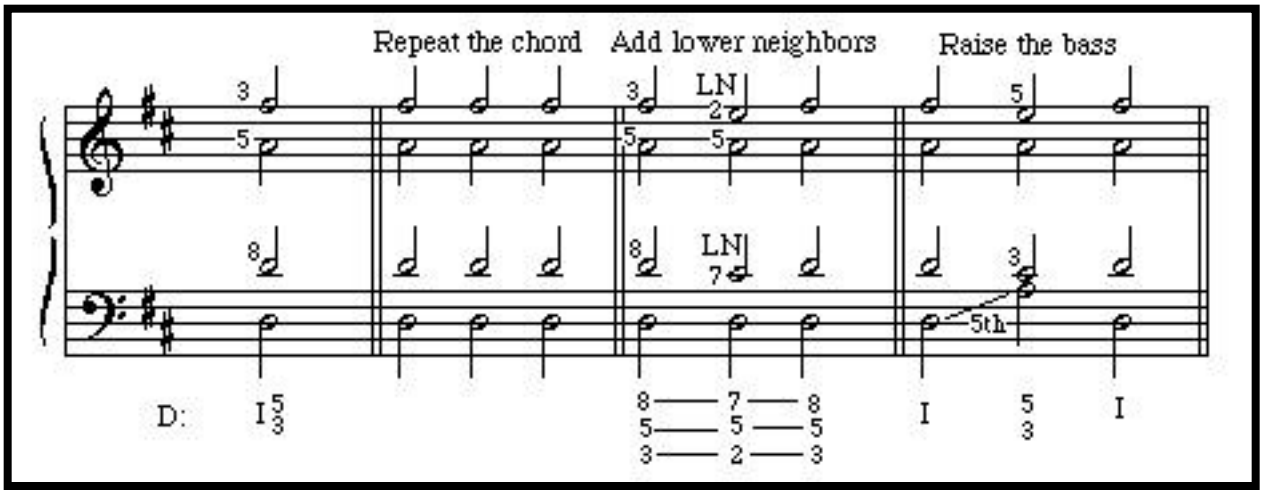
Although you do not need to understand the details of the above chart now, it gives you a glimpse of what you will be studying. By the end of these workbooks the charts on the previous pages will expand into this chart of strong harmonic progressions (not including those in minor).

Strong progressions are the most common ones in tonal music and they often signal structurally important spots in a piece. However, these are not the only progressions that "sound good" or that are "allowable." Occasionally composers do not want a strong sense of direction in their music. Nevertheless composers are always aware of which progressions are strong and which ones are weak, and composers always choose their harmonies accordingly.

---

1. CIRCLE the fundamental harmonic progression in the above chart.
2. TRACE the arrows between the chords of this progression and make them bold.

17.4 Expand the tonic triad with lower neighbors



•The tonic triad (I) is the most stable chord in western music. It provides the most satisfying beginnings and endings for pieces. Consequently the tonic triad's chord tones, $\hat{1}$, $\hat{3}$ and $\hat{5}$, are the most stable notes of the scale.

• The tonic chord expands and grows into almost all the music we hear. Music grows out of this chord with active tones. Active tones are notes which are less stable than the notes around them.

•In the example at the top of the page, the tonic triad is expanded over the course of a few measures. Each measure is like the previous one except for the changes labeled above and within the staffs. In measure three the tonic triad is expanded with active tones called lower neighbors (LN). In measure four a rising fifth in the bass is added to the changes already made in the previous measures.

•The numbers below the staff are figures, like the familiar numbers $^{5}/_{3}$, $^{6}/_{3}$ and $^{6}/_{4}$. Figures indicate the intervals of notes above the bass, sometimes with the addition of one or more octaves.

• Lines between two figures show that the figures refer to the same voice. The numbers themselves do not specify the voice in which the higher notes appear.

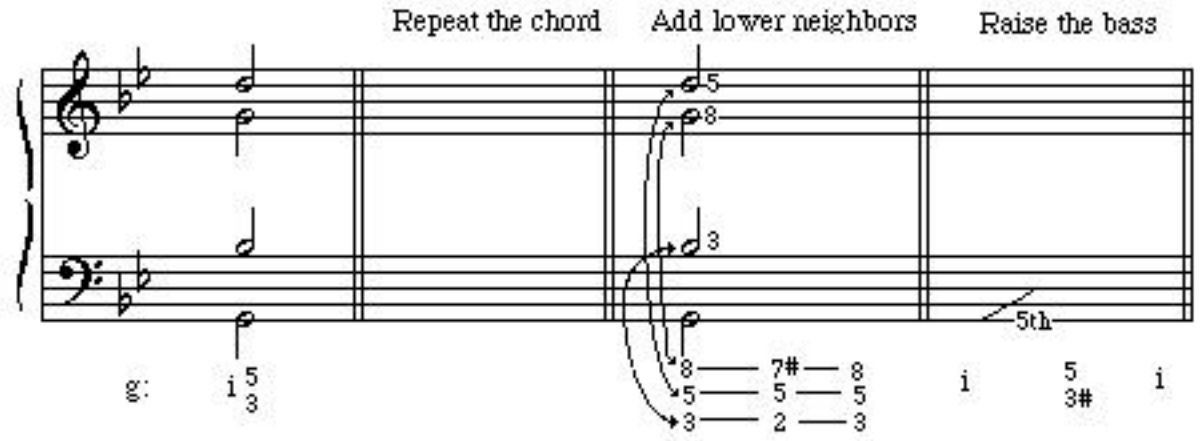
---

1. EXPAND a G minor tonic triad by referring to the figures below the staff and the example at the top of the page.

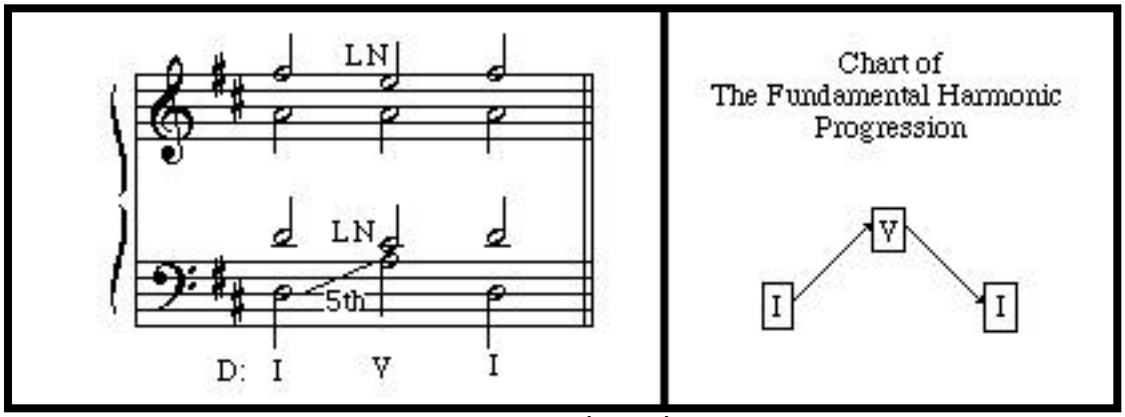
   Each measure should be like the previous one except for the changes labeled above and within the staffs.

   In measure three, lower neighbors do not appear in the same voices as they do at the top of the page. Instead, refer to the figures below the staff.

2. LABEL lower neighbors "LN".



17.5 Write the fundamental harmonic progression using CTS



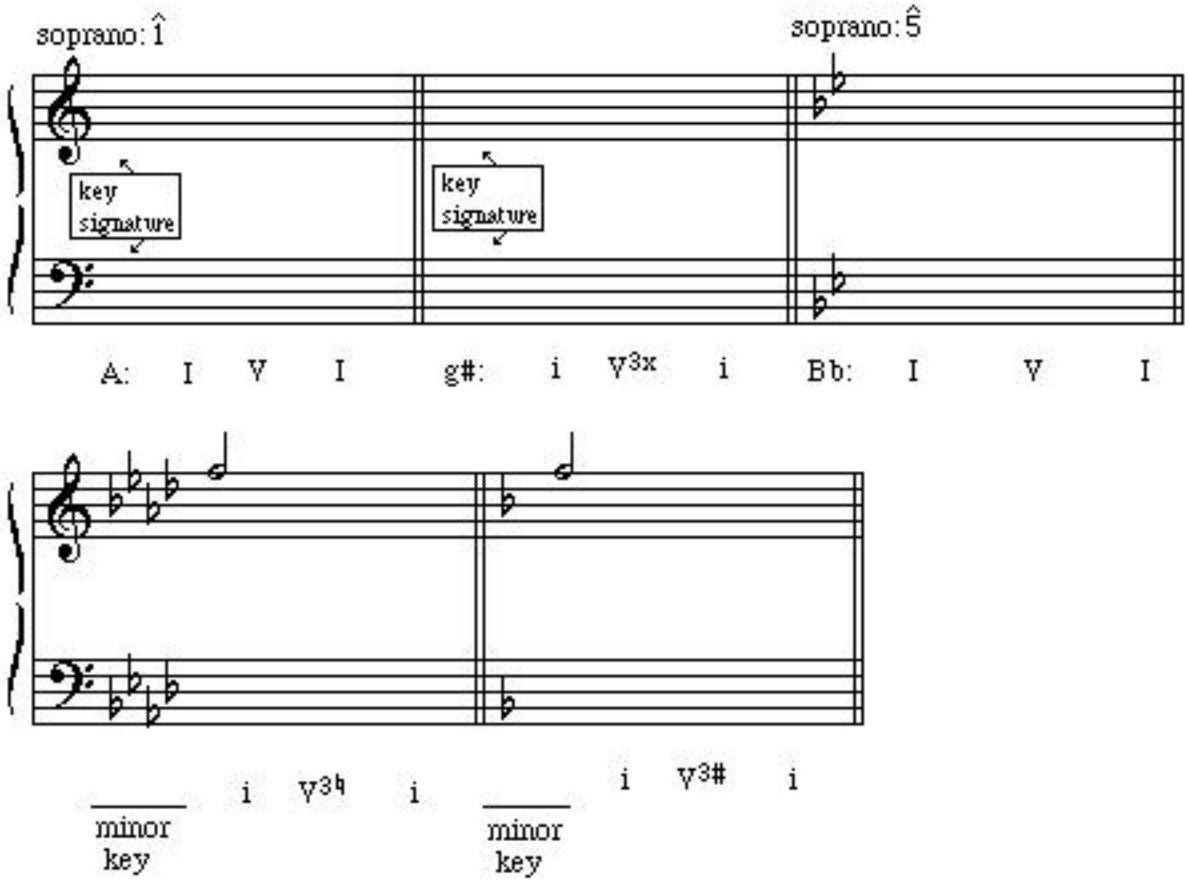
• On the previous page, adding the lower neighbors $\hat{2}$ and $\hat{7}$ and raising the bass a fifth produced a dominant triad in the middle of two tonic triads. See the example above and to the left.
•Recall from worksheet 17.1 that the resulting I V I progression is called the <u>fundamental harmonic progression.</u>
• In the chart above and to the right, V has been raised relative to I. This difference in height illustrates the stability of I and the tension of V.

---

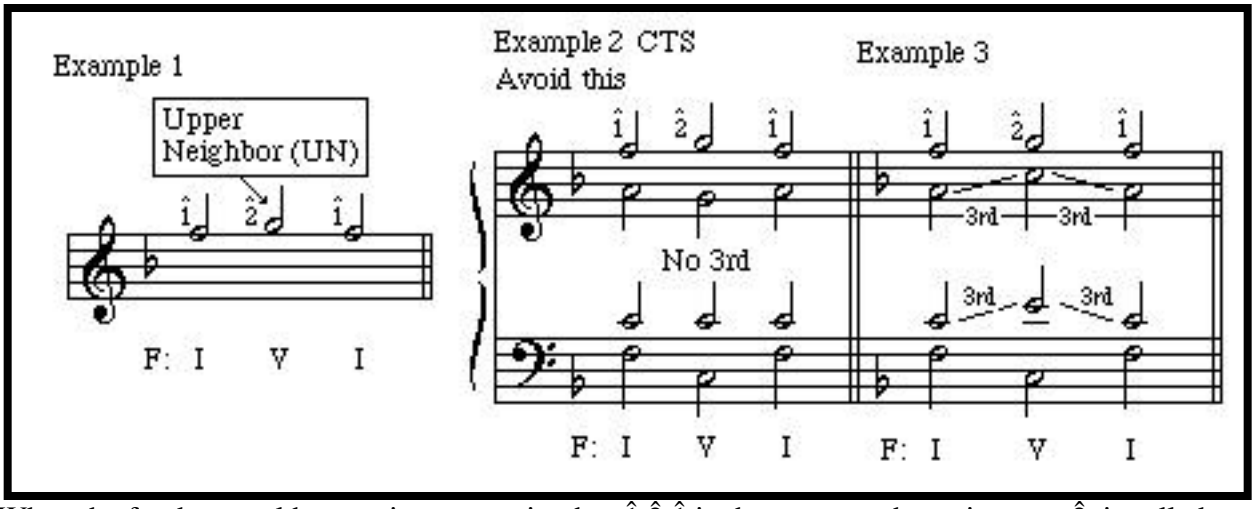
1. Active tones are_____
(see previous page)

---

2. WRITE the following fundamental harmonic progressions as in the example above. The voice leading will be CTS.

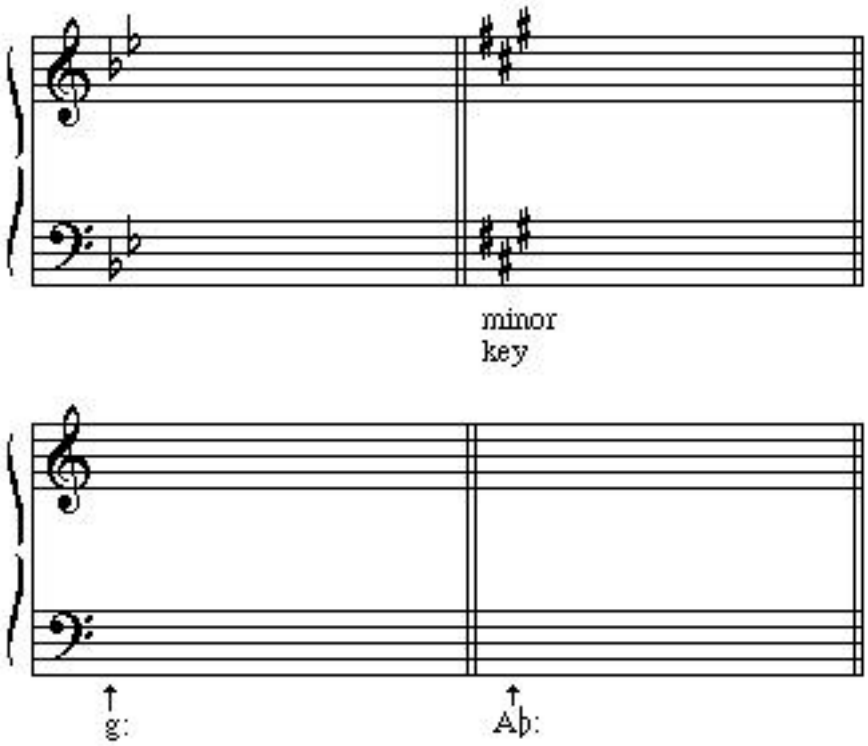


17.6 Harmonize 2̂ as an upper neighbor

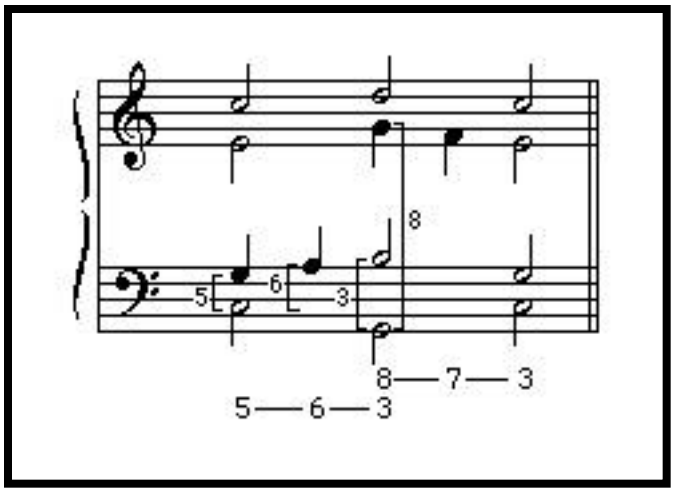


• When the fundamental harmonic progression has Î 2̂ Î in the soprano, the active tone 2̂ is called an upper neighbor. See Example 1.
• With these notes in the soprano, avoid CTS voice leading because CTS results in a missing third in the V chord. See Example 2.
• One good solution is to move the alto and tenor by a third in similar motion to the soprano. See Example 3. Another solution will appear in worksheet 20.5.

WRITE fundamental harmonic progressions in the following keys with soprano Î 2̂ Î.
LABEL upper neighbors UN.



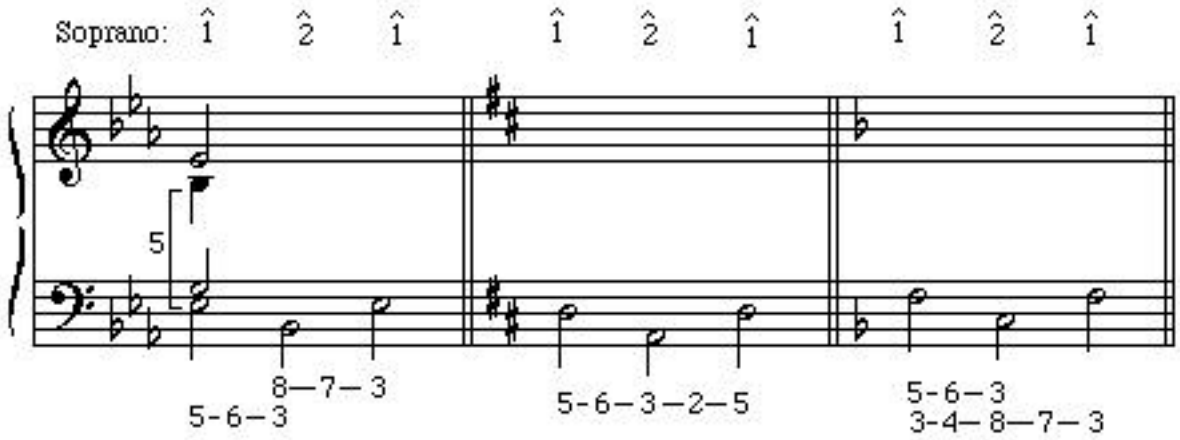
17.7 Insert passing tones



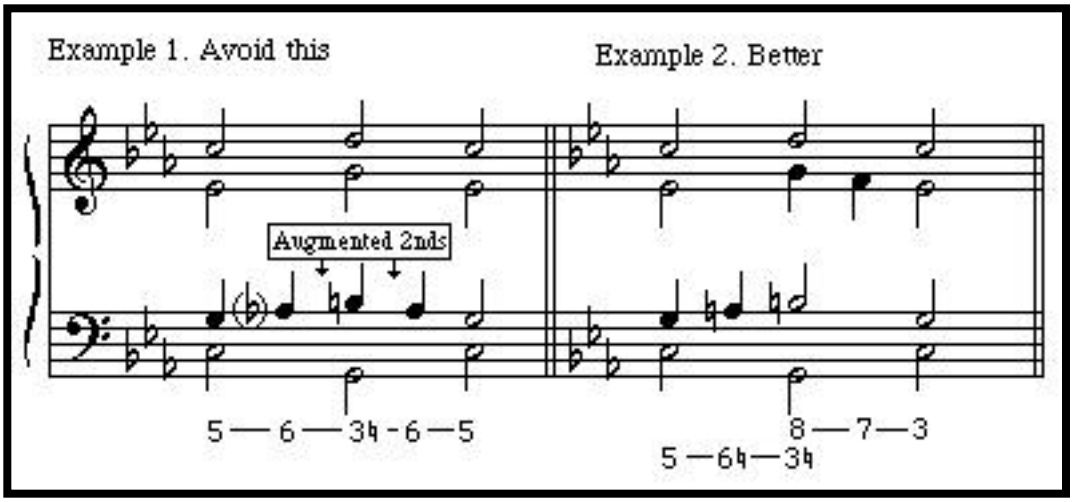
• Whenever a melodic third appears there is the possiblity of inserting a passing tone.
• The example above shows passing tones inserted between the chords of the fundamental harmonic progression with $\hat{1}\ \hat{2}\ \hat{1}$ in the soprano.
• Passing tones are notated below the staff with figures. Recall from worksheet 17.4 that figures are numbers under the staff showing the intervals of notes above the bass.
• Recall from 17.4 that lines between two figures show that the figures refer to the same voice.

---

1. HARMONIZE the following fundamental harmonic progressions using $\hat{1}\ \hat{2}\ \hat{1}$ in the Soprano.
2. ADD passing tones as indicated by the figures below the staff.

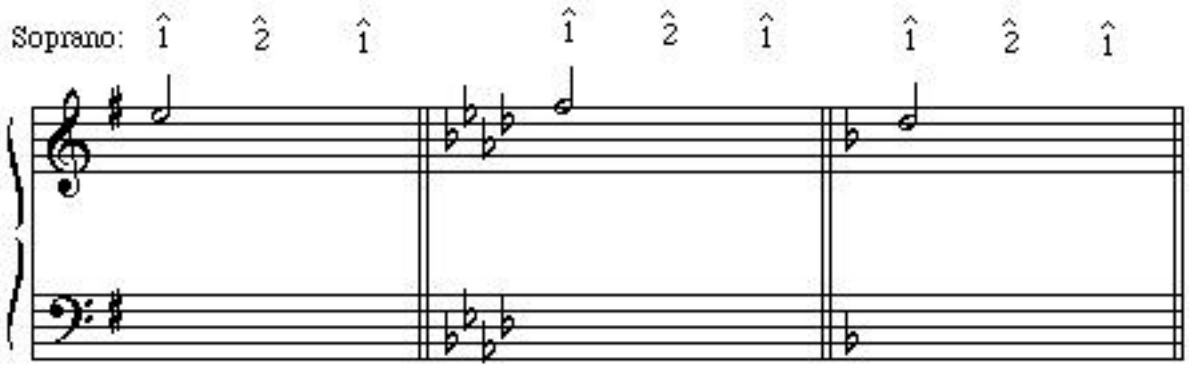


17.8 Avoid augmented 2nds



• A tritone is the interval of an augmented fourth or diminished fifth.
• Avoid melodic augmented seconds and tritones.
• The augmented second interrupts the smooth melodic flow in the predominantly scalewise voice leading which you are studying. This interval is the relatively large distance of three half steps, compared to one or two half steps for other distances in the scale.
• Avoid the tritone because, among other reasons, it is hard to sing.
•The augmented second occurs when moving from $\hat{6}$ to a raised $\hat{7}$ in minor, or vice versa. When the fundamental harmonic progression is in minor, a raised $\hat{7}$ appears in the V3# chord. So be careful when $\hat{6}$ is used as a passing tone before or after V#. See Example 1.
•Use the ascending melodic minor scale when rising from $\hat{5}$ to $\hat{7}$ and inserting $\hat{6}$ as a passing tone. Raising both $\hat{6}$ and $\hat{7}$ avoids the augmented second. See the tenor in Example 2.
• Avoid $\hat{6}$ altogether as a passing tone when descending from $\hat{7}$ to $\hat{5}$. Compare the tenor at the end of the measures in Examples 1 and 2.

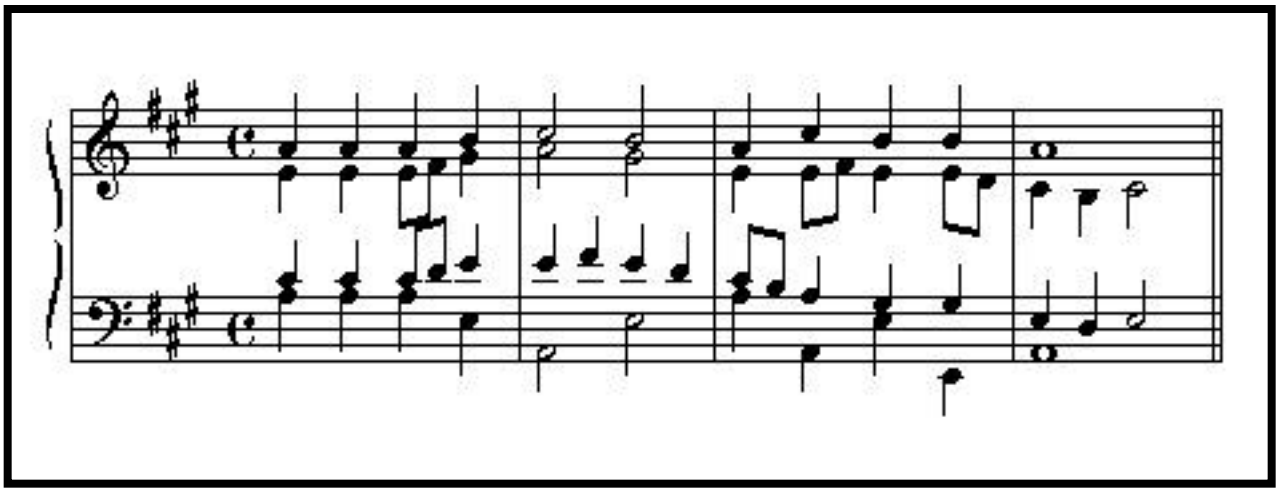
ADD passing tones of your own in the following i V# i phrases. RAISE $\hat{7}$ in the V# chord, as usual, and AVOID the augmented second. Soprano should be $\hat{1}$ $\hat{2}$ $\hat{1}$.



Chapter 18 Harmonizing phrases with I and V; Cadences

In this chapter you will:
1. Analyze a phrase of "Au Claire de la Lune"
2. Harmonize a phrase of "The Donkey"
3. Harmonize a phrase of a German lullaby
4. Harmonize a phrase of a Christmas carol
5. Harmonize a phrase of "Yankee Doodle"
6. Harmonize two phrases of "Let my People Go"
7. Harmonize a phrase of a French march

18.1 Analyze a phrase of "Au Claire de la Lune"



In Chapter 18 you will apply what you learned about the fundamental harmonic progression to the harmonization of full phrases of music. You will only use I and V chords. The above harmonization of the French folk song "Au Claire de la Lune" shows that you can use passing tones and neighbor notes to keep the music interesting and to compensate for the lack of variety in chords.

---

1. How many passing tones occur in the inner voices (the alto and tenor) in the above phrase? _____

2. What note (letter name) is used as a passing tone in the soprano? _____

3. How many upper neighbor notes are in the inner voices of the above phrase? _____

4. How many lower neighbor notes are in the above phrase? _____

5. How many times does the soprano move from $\hat{1}$ to $\hat{2}$ or from $\hat{2}$ to $\hat{1}$? _____

6. In these cases, do the inner voices move by third (disregarding passing tones) in similar motion to the soprano as suggested in the last chapter? _____

18.2 Harmonize a phrase of "The Donkey"

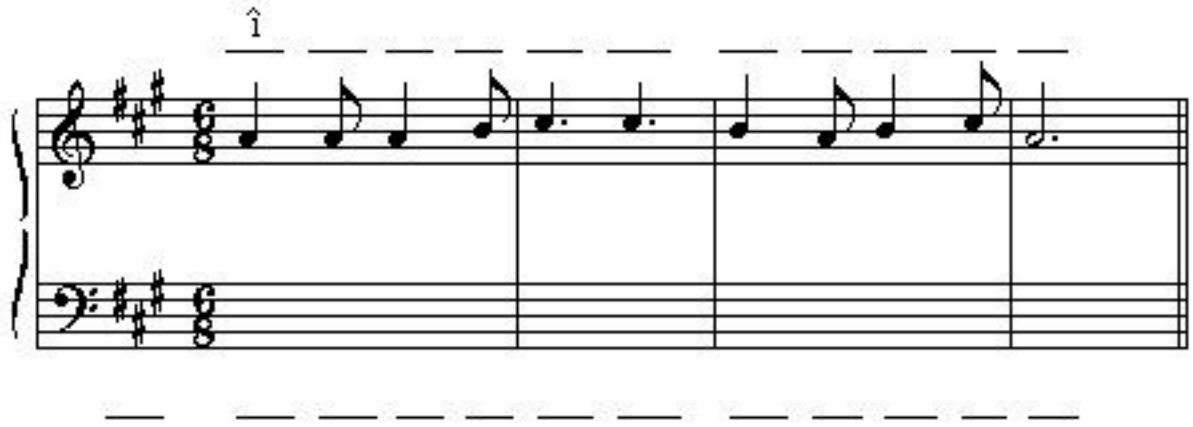
	If the soprano moves between these notes…	…use this voice leading
I harmonizes $\hat{1}$ $\hat{3}$ $\hat{5}$	$\hat{7} \longleftrightarrow \hat{1}$	CTS
V harmonizes $\hat{5}$ $\hat{7}$ $\hat{2}$	$\hat{1} \longleftrightarrow \hat{2}$	inner voices by third
	$\hat{2} \longleftrightarrow \hat{3}$	CTS

A. HARMONIZE A PHRASE WITH I AND V

• To harmonize a phrase, the first step is to determine the key.
• When harmonizing a melody in the soprano, decide on the chord for a certain note by consulting the left side of the box at the top of the page.
• Decide on the voice leading between chords by consulting the right side of the box at the top of the page.

---

1. WRITE the key below the key signature in the phrase below.
2. WRITE scale degree numbers above each soprano note.
3. WRITE a Roman Numeral for a chord, I or V, under each note below the staffs.
4. HARMONIZE the phrase with root position I and V chords. See the right side of the box above.
5. ADD passing tones and neighbor notes.



B.ANALYZE THE PHRASE AND IDENTIFY ITS CADENCE

• The last two or three chords of a phrase are called a cadence.

1.CIRCLE the three-chord cadence in the above phrase.

2. What kind of active tone is the last soprano note of measure 1? _____

3. Is the harmony on the strong beats of measure 3 tonic or dominant?_____

4. In measure 3, is the overall harmony tonic or dominant?_____

In measure 3, $\hat{2}$ is a member of the overall dominant harmony. In this context it is more stable than $\hat{1}$.

5. The second note of measure 3 ($\hat{1}$) is an active tone. What active tone is it?_____

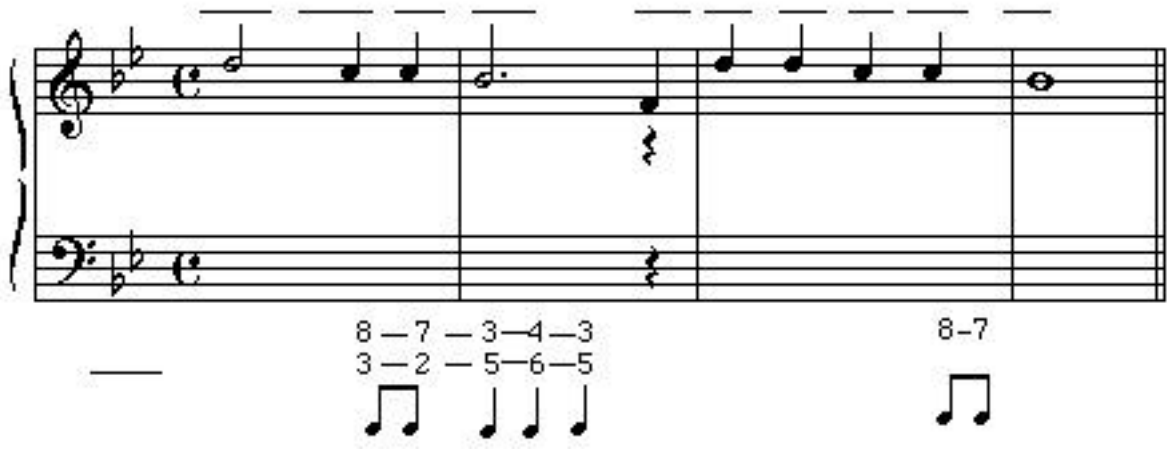
18.3 Harmonize a phrase of a German lullaby

A. HARMONIZE A PHRASE WITH I AND V

• Recall that figures are numbers below the staff which indicate the intervals of notes above the bass.

---

1. WRITE the key below the key signature in the phrase below.
2. WRITE scale degrees above each soprano note.
3. HARMONIZE the whole phrase with I and V as on the previous page. For now do not add passing tones or neighbor notes and ignore the figures below the staff.
4. ADD active tones according to the figures below the staff. Use the rhythm below the figures.



B.ANALYZE THE CADENCE

•The cadence at the end of the above phrase is called perfect authentic.

---

1. It is called perfect because the soprano ends on what scale degree? _____

2. It is called authentic because it ends on what chord? _____

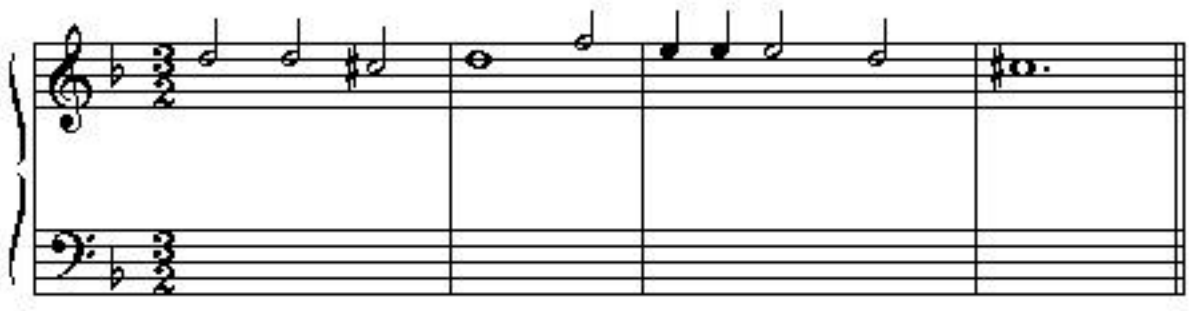
18.4 Harmonize a phrase of a Christmas carol

A. HARMONIZE A PHRASE WITH i AND V#

• Recall from worksheet 18.2 that to harmonize a phrase, the first step is to determine the key.
• Looking at the key signature is not always enough to determine the key, since the key may be major or it may be minor.
• Accidentals are a good indication that the phrase might be in minor since two minor scales have accidentals and since, so far, our harmonies in minor have included raised leading tones ($\hat{7}$). In the phrase below, the C#'s suggest the key of D minor rather than F.
• The first and last notes of a phrase are also good indications of what the key might be. In the phrase below, the first note, D, suggests the key of D minor.

---

1. HARMONIZE the whole phrase.
2. ADD active tones of your own



B. IDENTIFY THE CADENCE

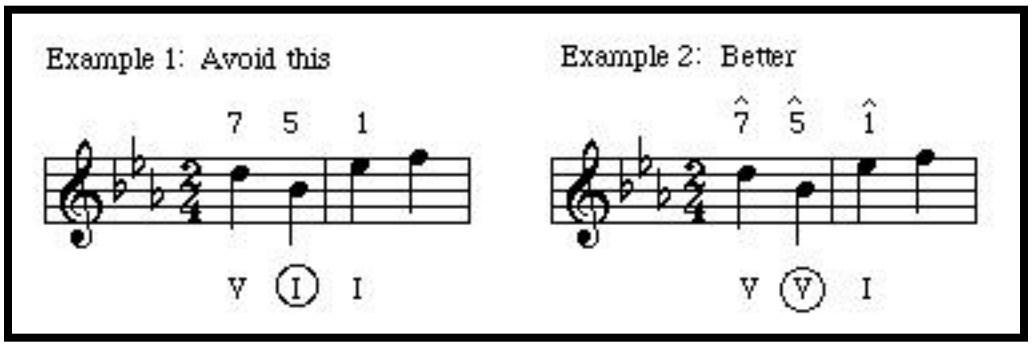
• A cadence which ends on V(#) is called a semicadence.

---

1. A cadence which ends on I and $\hat{1}$ in the soprano is called a(n) _____ cadence.

2. Which kind of cadence is at the end of the above phrase?_____

18.5 Harmonize a phrase of "Yankee Doodle"



• $\hat{5}$ can be harmonized with either I or V (see the top of worksheet 18.2).
• To decide which chord to use under $\hat{5}$, the following rule often helps:
If the melody permits, change the harmony over the bar line.
• For the same melody in the examples at the top of the page, the chord progression in Example 2 is more satisfying than the one in Example 1. In Example 2 the harmony changes over the bar line.

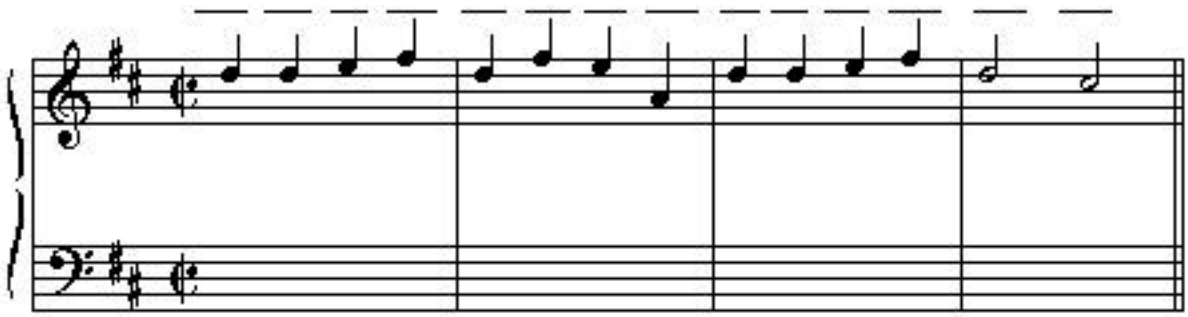
---

1. WRITE scale degrees above the notes of "Yankee Doodle" at the bottom of the page.

2. The first note of measure 3 must be harmonized with which chord, I or V? _____

3. To change the harmony over the bar line, the last note of measure 2 ($\hat{5}$) should be harmonized with which chord, I or V? _____

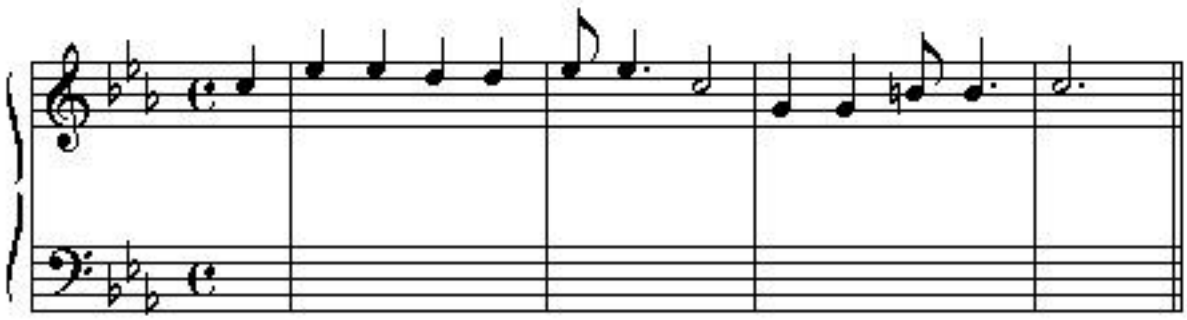
4. HARMONIZE "Yankee Doodle".



5. Name the cadence at the end of the phrase. _____

18.6 Harmonize two phrases of "Let my People Go"

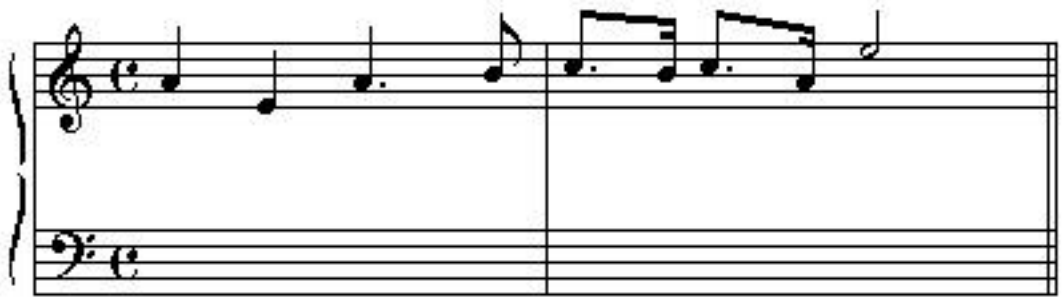
1. HARMONIZE these two phrases.



2. What kind of cadences are used in these two phrases? _____

18.7 Harmonize a phrase of a French march

A. HARMONIZE THIS PHRASE



B. REVIEW THE NAMES OF CADENCES

•The above phrase ends on $\hat{5}$ and a tonic chord. It is an example of an imperfect authentic cadence.

---

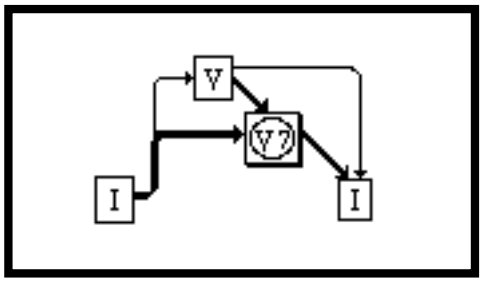
1. A cadence which ends on I is called_____

2. A cadence which ends on I and $\hat{1}$ is called_____

3. A cadence which ends on I and $\hat{5}$ is called_____

4. A cadence which ends on V is called_____

Chapter 19 The Dominant Seventh Chord, V7

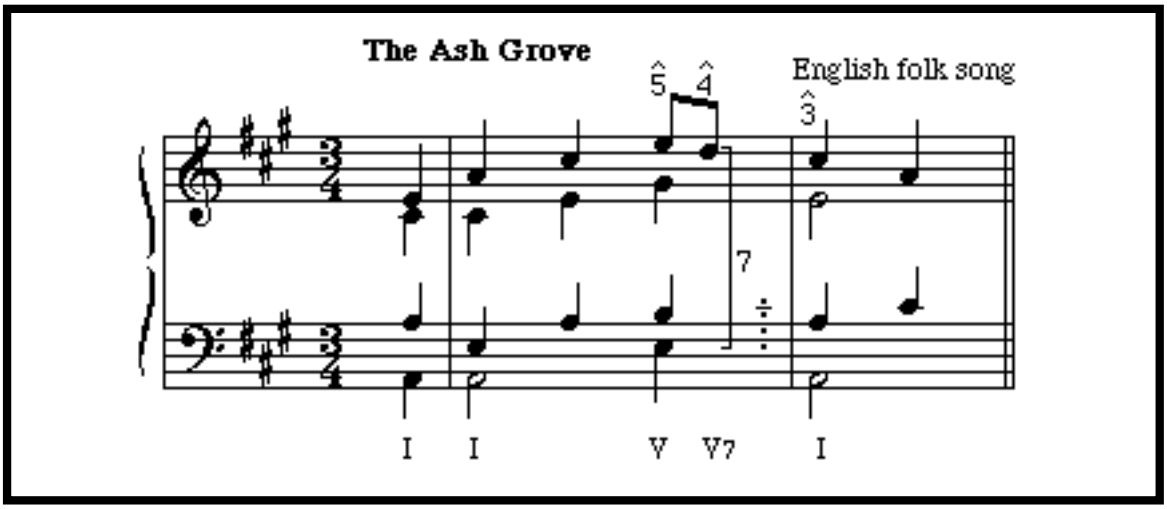


In the above chart, a V7, or dominant seventh chord, expands the chart of the fundamental harmonic progression which appeared on worksheet 17.5. This new chart shows that V7 follows V or I, but does not usually precede V. Highlighted arrows represent the new voice leading for V7.

In this chapter you will:

1. Analyze a phrase with a dominant seventh chord
2. Identify and write dominant seventh chords
3. Write dominant seventh chords in a key
4. Write V7 chords in four voices
5. Approach V7 by V and mark tendency tones
6. Resolve complete V7's to incomplete I's
7. Resolve incomplete V7's to complete I's
8. Resolve complete V7's to complete I's
9. Review resolving V7 chords
10. Approach V7 from I

19.1 Analyze a phrase with a dominant seventh chord



In the folk song "The Ash Grove," $\hat{5}$ falls to $\hat{4}$ in eighth notes on the third beat of the first full measure. In the above harmonization, $\hat{4}$ forms the interval of a seventh (plus and octave) with the bass of V. In this example the passing tone $\hat{4}$ expands or elaborates V.

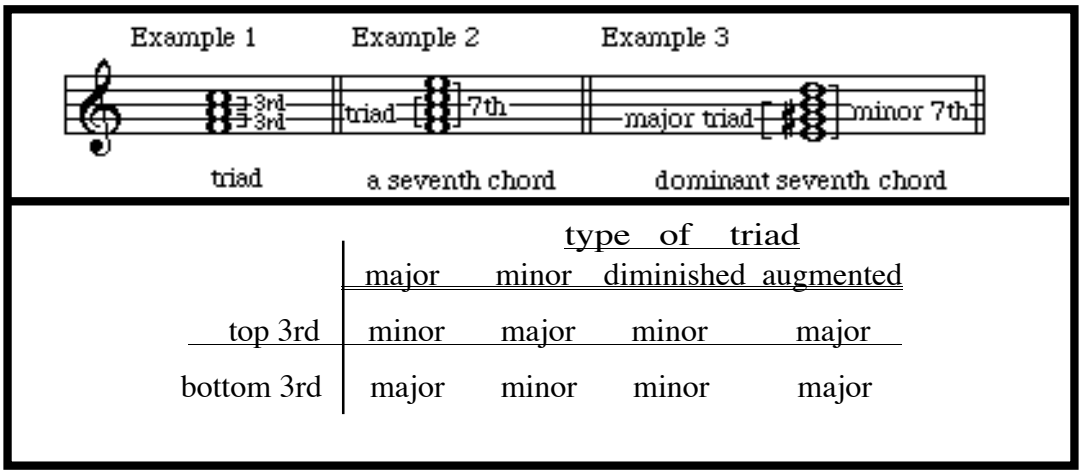
The brief chord which includes $\hat{4}$ on the last half of beat three is called a V7 or dominant seventh chord. See its chord tones at the end of the measure. In this chapter you will learn the voice leading for approaching and leaving this chord, and in the next chapter you will use it in harmonizing whole phrases of music.

---

1. A seventh above the dominant is what scale degree? _____

2. The chord tones of V7 chords correspond to which scale degrees? _____

19.2 Identify and write dominant seventh chords



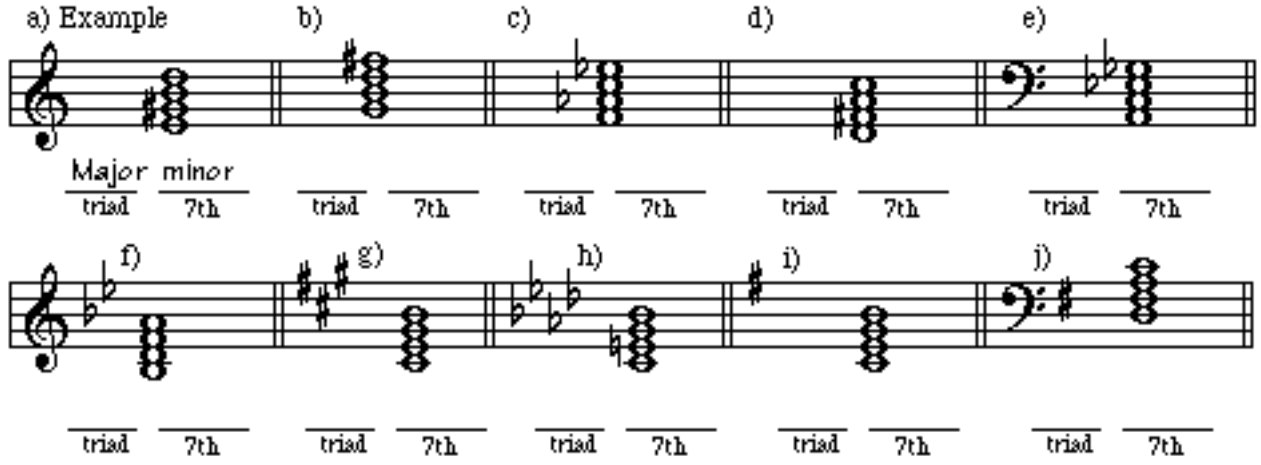
	type of triad			
	major	minor	diminished	augmented
top 3rd	minor	major	minor	major
bottom 3rd	major	minor	minor	major

•Recall from Chapter 10 that triads are chords with three chord tones separated by thirds. See example 1. Triads are named according to the chart at the bottom of the box above.
•Seventh chords have four, instead of three, chord tones separated by thirds . The name "seventh chord" comes from the interval of a seventh between the root and the top note. See example 2.
•You can distinguish various kinds of seventh chords by identifying the triad on the bottom as major, minor, diminished or augmented, and by identifying seventh interval as major, minor or diminished.
•One way to identify intervals of a seventh is by counting half steps down from the root to the note an octave below the seventh. An octave below a major seventh is one half step down from the root, a minor seventh is two half steps down and a diminished seventh is three half steps down.

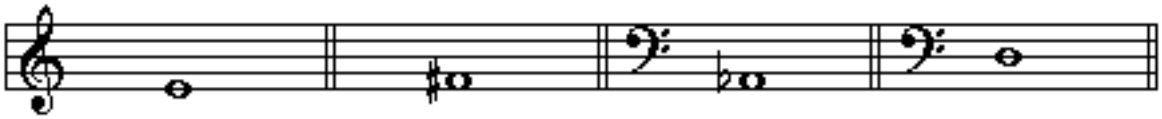
•A dominant seventh chord has a major triad and a minor seventh. See Example 3.

---

1. IDENTIFY the triads and the seventh intervals in these seventh chords:



2. Which of the above seventh chords are dominant sevenths? _____
3. WRITE dominant seventh chords above the following roots. Do not use key signatures.



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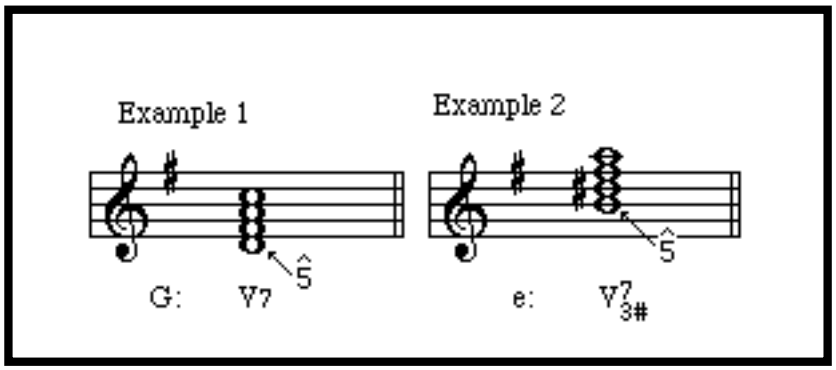
19.3 Write dominant seventh chords in a key



• The root of a dominant seventh chord is usually 5̂, as implied by the word "dominant" in the name.

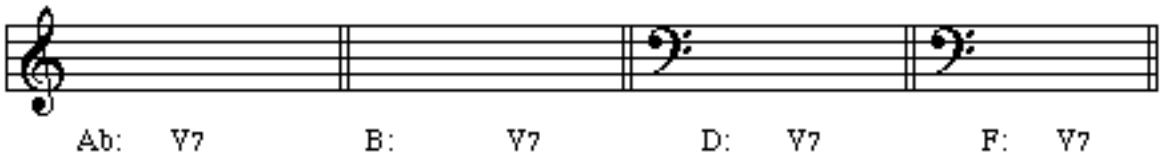
• If the key is major and the root is 5̂, no accidentals are needed to write dominant seventh chords. See example 1.

• If the key is minor and the root is 5̂, the third of dominant seventh chords must be raised a half-step. See example 2. Recall that these workbooks notate raised chord tones in general with small sharp signs, so the general notation for a dominant seventh in minor is $V^7/_{3\#}$. However, there are some keys in which notes will be raised by a natural or a double sharp instead of a sharp.

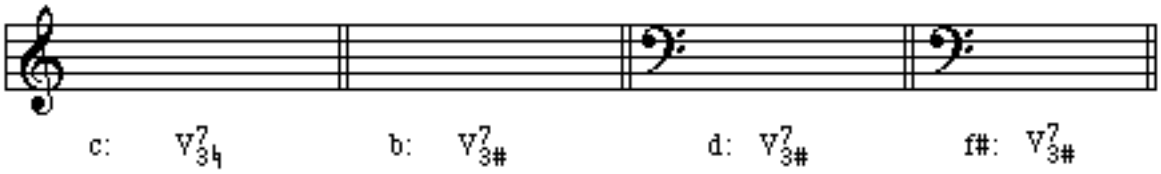
• Raising the third of V7 is the same as raising 7̂. You have already been doing this with V# chords in minor.

---

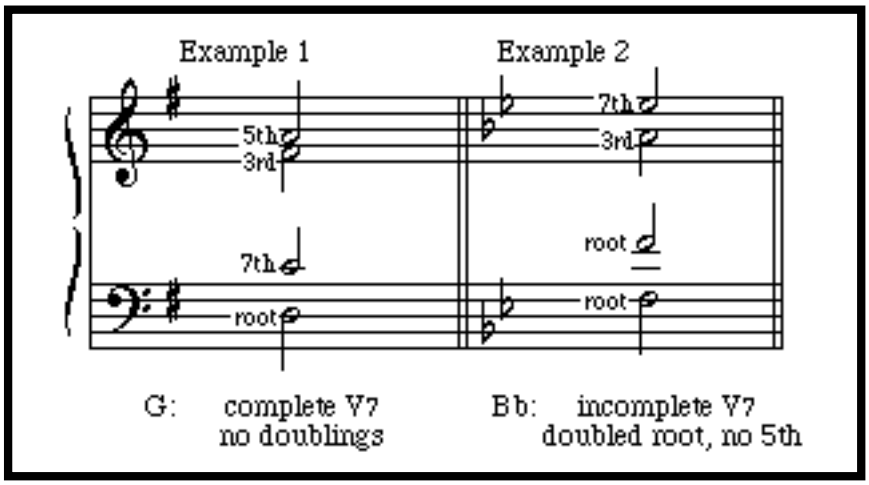
1. WRITE key signatures for these major keys and the V7 chords indicated below the staff.



2. WRITE key signatures for these minor keys and the $V^7/_{3\#}$ chords indicated below the staff.



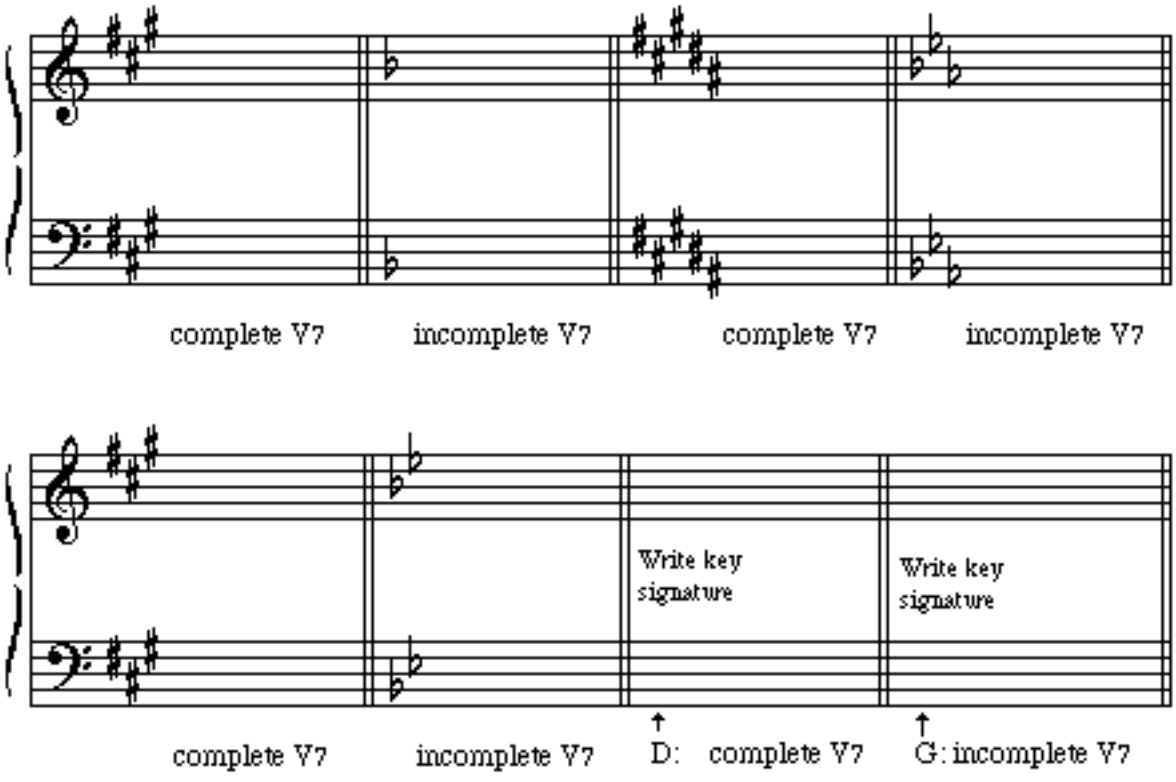
19.4 Write V7 chords in four voices



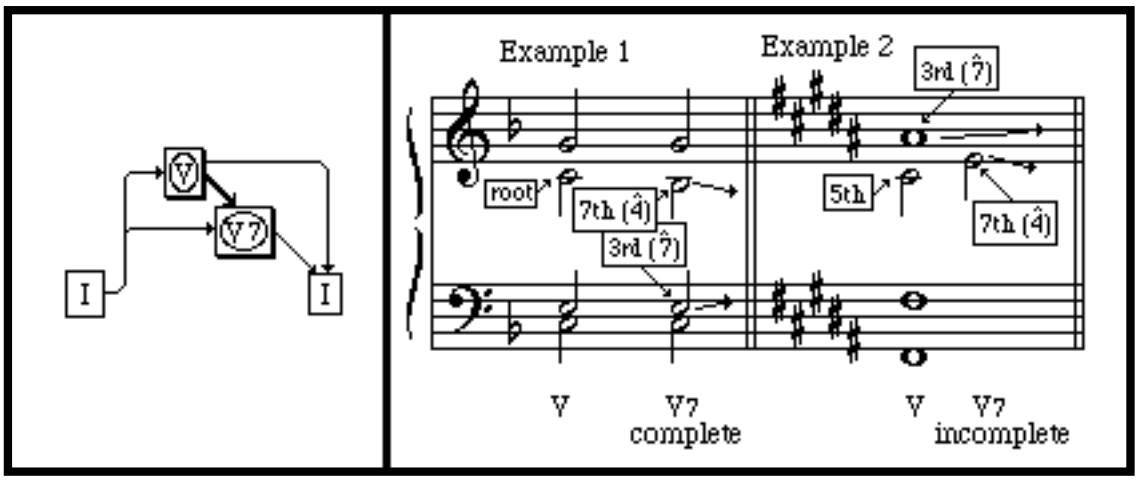
To write V7 chords in four voices... EITHER:
• Write a different chord tone for each voice, as in example 1. This is a complete V7. ...OR...
• Double the root and omit the fifth, as in example 2. This is an incomplete V7.

---

1. WRITE these complete and incomplete V7 chords in four voices.



19.5 Approach V7 by V and mark tendency tones



V7 often follows V as an elaboration or an expansion. See the chart on the left of the box above. You can approach V7 from V in either of these two ways:

• Move the root of V down a step to a seventh above the bass. See example 1 above and worksheet 19.1. This is by far the more common voice leading and creates a complete V7 chord.

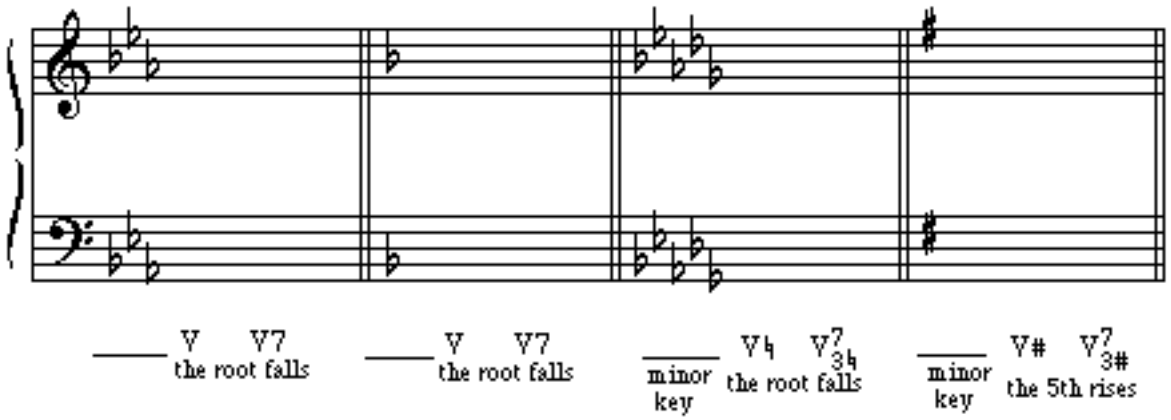
• Move the fifth of V up to the seventh above the bass. See example 2 above. This voice leading creates an incomplete V7 chord.

• Chord tones can be repeated, as in example 1, or sustained, as in example 2 and in worksheet 19.1.

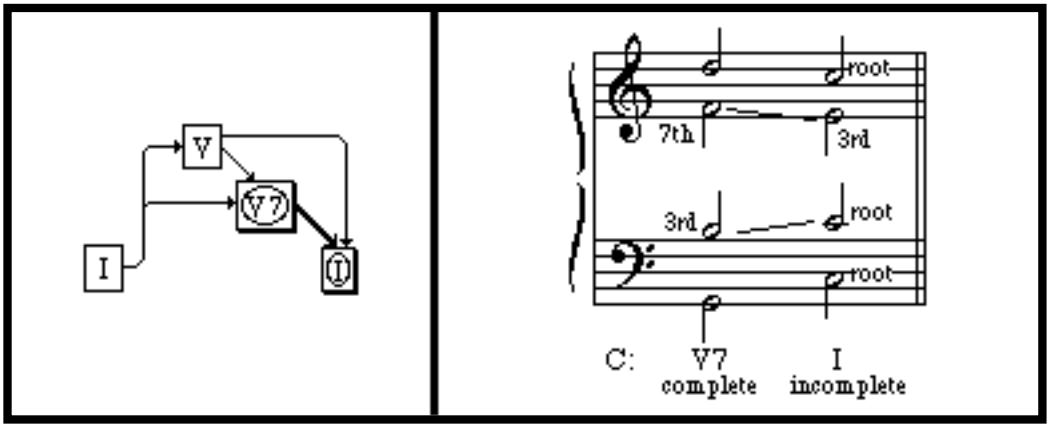
• $\hat{4}$ and $\hat{7}$ are called tendency tones because they tend to move to notes which are a step away: $\hat{4}$ (the seventh of V^7) tends to move down to $\hat{3}$, and $\hat{7}$ (the third of V^7) tends to move up to $\hat{1}$ (hence $\hat{7}$'s name, "the leading tone"). See the arrows after these notes in the examples at the top of the page.

---

1. ELABORATE these V chords by following them with V7 chords. FOLLOW directions below the Roman numerals.
2. DRAW arrows from the tendency tones in V7 towards the next likely note.



19.6 Resolve complete V7's to incomplete I's



The chart on the left side of the box above shows that V^7 moves to I. In fact V^7 moves even more strongly to I than does V. The reason for this is that V^7 includes the dissonant intervals of a seventh from the bass and a tritone between the third and seventh of the chord. This harmonic tension is resolved as the tendency tones move to their goals $\hat{3}$ and $\hat{1}$.

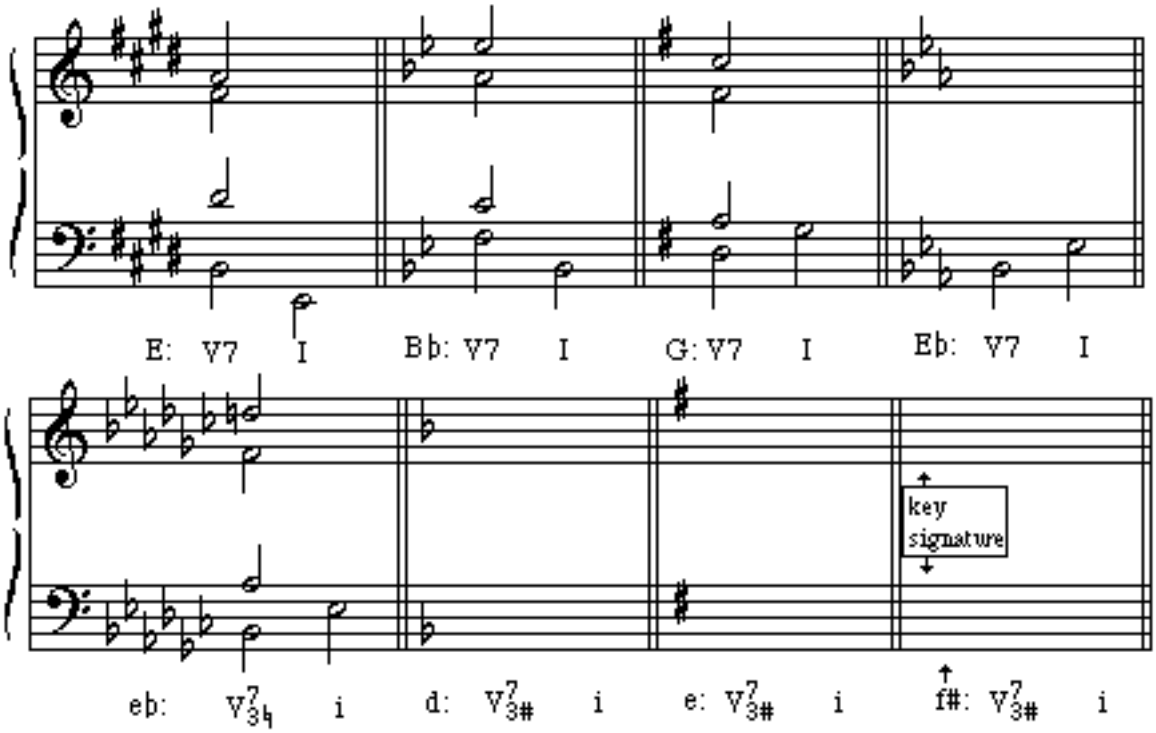
• An incomplete I chord is missing a fifth, like an incomplete V^7. Because of the missing fifth the incomplete I has a three roots and a third. See the second chord in the example on the right side of the box above.

• When moving from a complete V^7 to an incomplete I, the tendency tones move to their goals:

1. The seventh of V^7 ($\hat{4}$) falls by step to the third of I.
2. The third of V^7 ($\hat{7}$) rises by half step to the root of I.

• The remaining voice moves by step to the root of I.

RESOLVE these V7 chords. On this page all V7 chords are complete and all I chords are incomplete.



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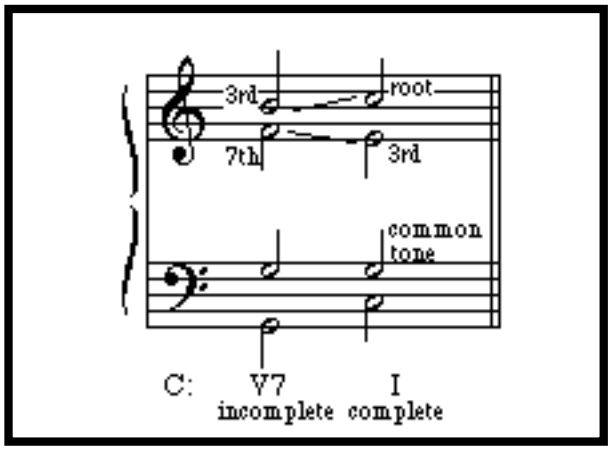
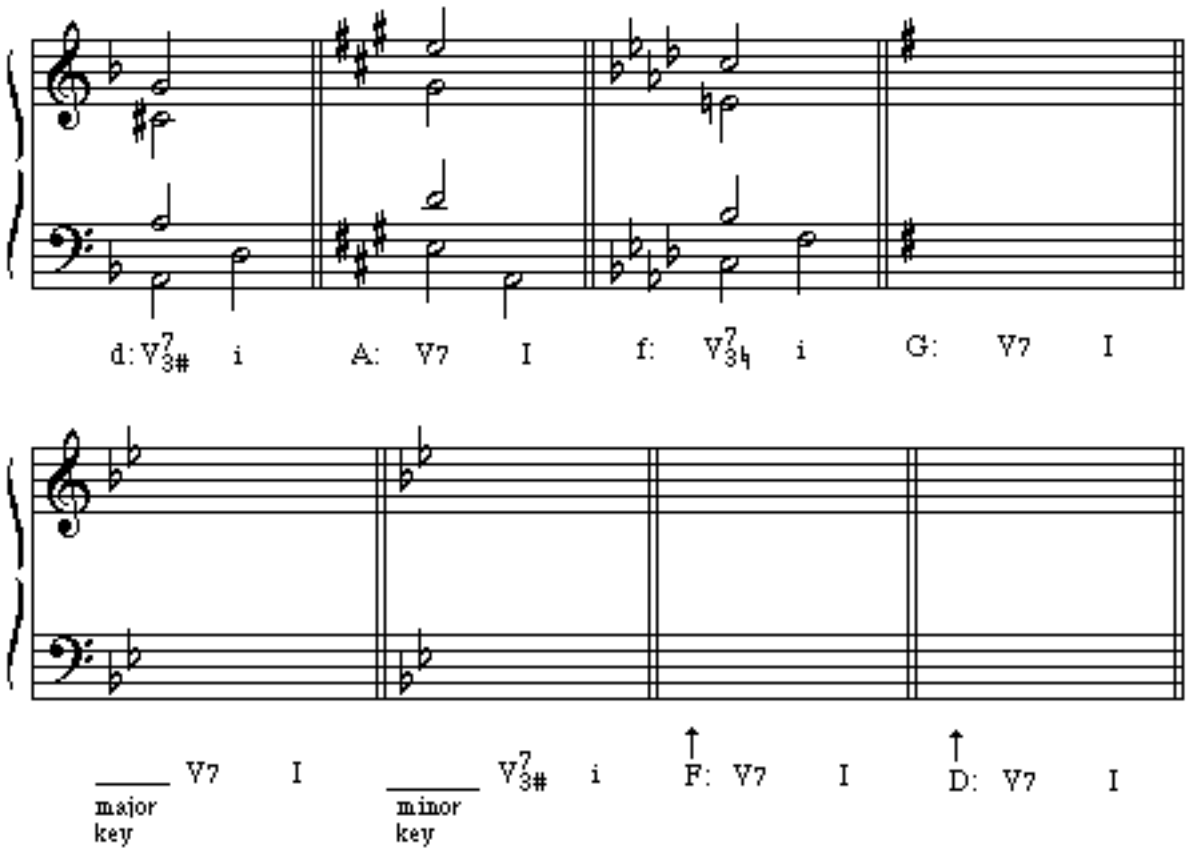
19.7 Resolve incomplete V7's to complete I's

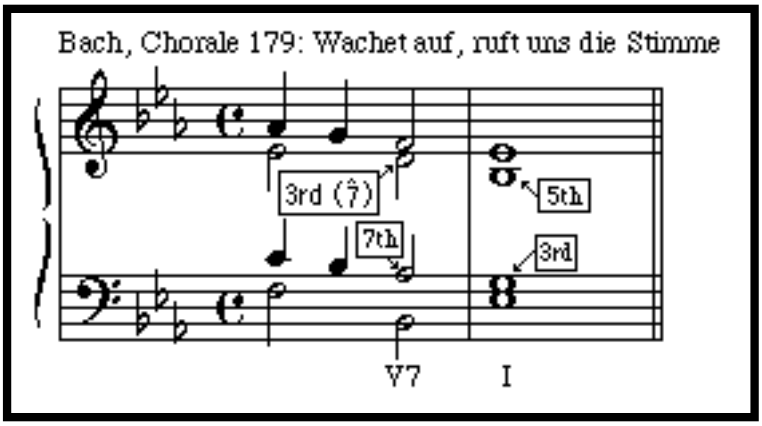


- As in the previous page, when moving from an incomplete V7 to a complete I the tendency tones move to their goals. See the example above.
    1. The seventh of V^7 ($\hat{4}$) falls by step to the third of I.
    2. The third of V^7 ($\hat{7}$) rises by half step to the root of I.
- The remaining voice stays the same. It has a common tone.

RESOLVE these V7 chords. On this page all V7 chords are incomplete and all I chords are complete.



19.8 Resolve V7 to I, both chords complete

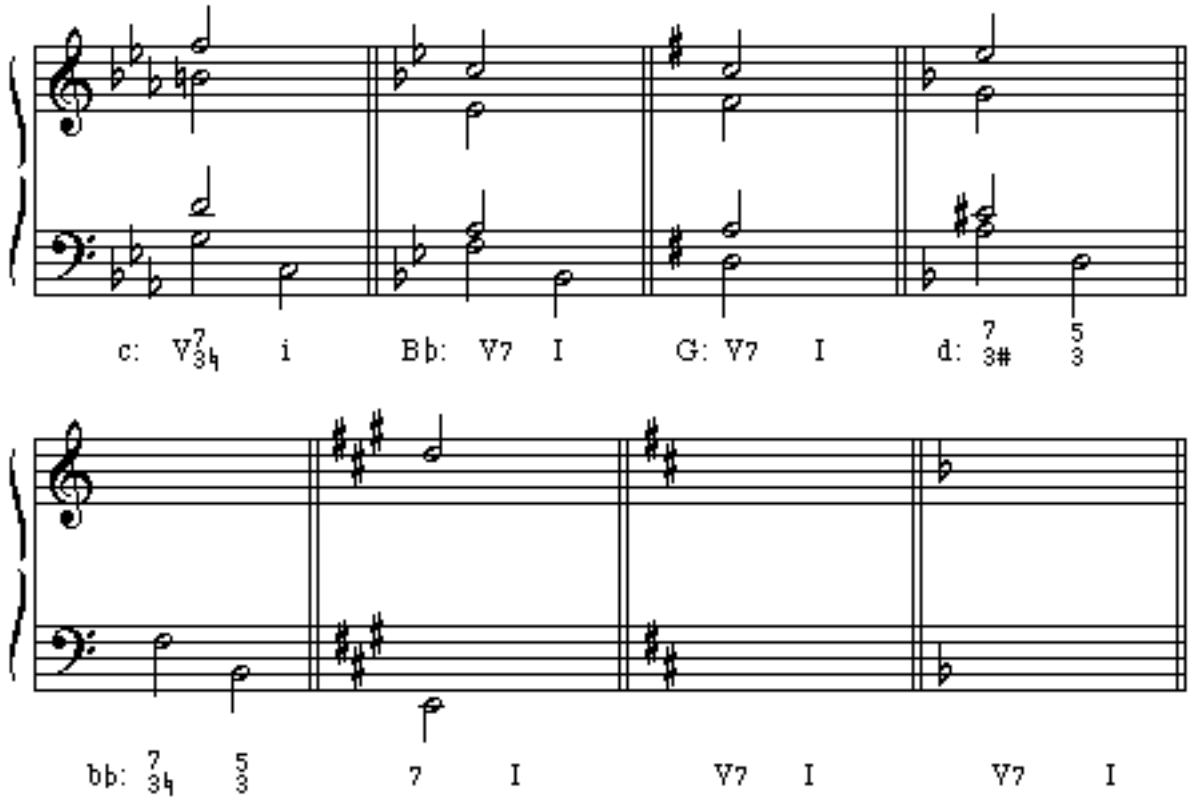


At the end of phrases, cadences are often reinforced by the full sound of complete chords. To write complete chords in a V7 I cadence:

- the 7th of V7 falls by step to the third of I, as usual.
- the 3rd of V7 (7̂) falls to the fifth of I. Here the leading tone does not rise to 1̂.

Do not use this voice leading with the third of V7 (7̂) in the soprano. In the top voice, it is particularly unsatisfying to hear that the leading tone does not go to 1̂, its usual goal.

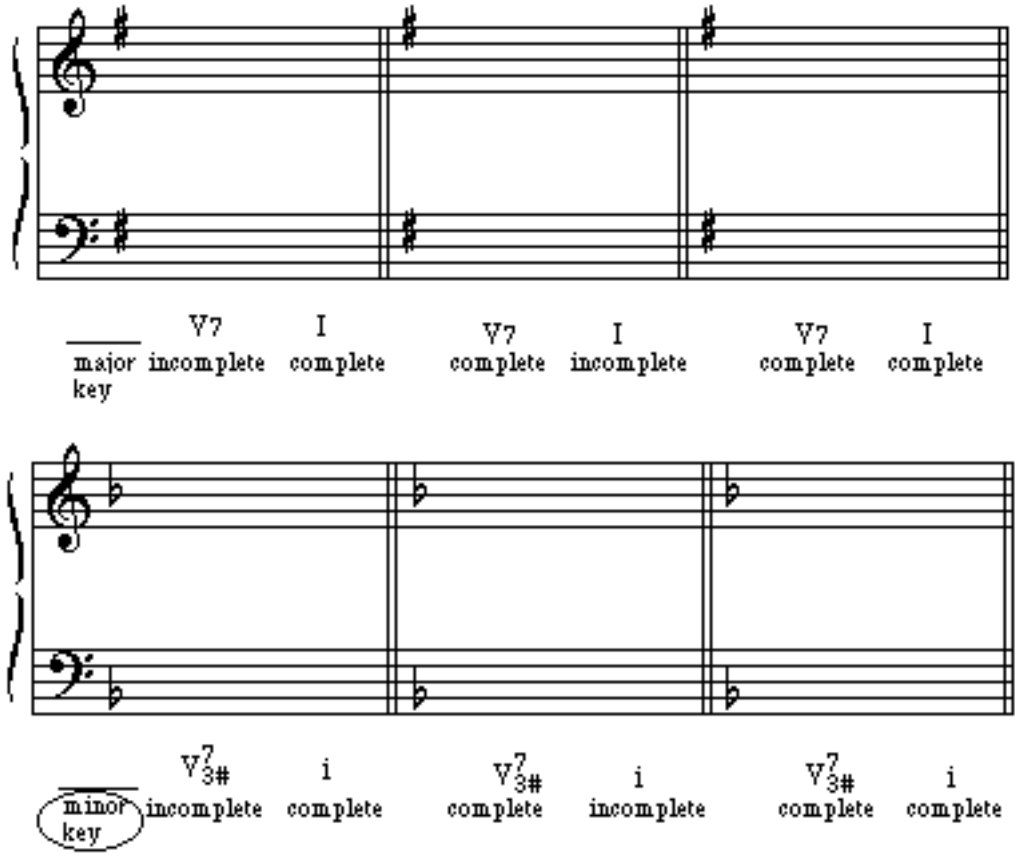
RESOLVE these V7 chords to I. On this page, both chords are complete. PROVIDE whatever notes are missing.



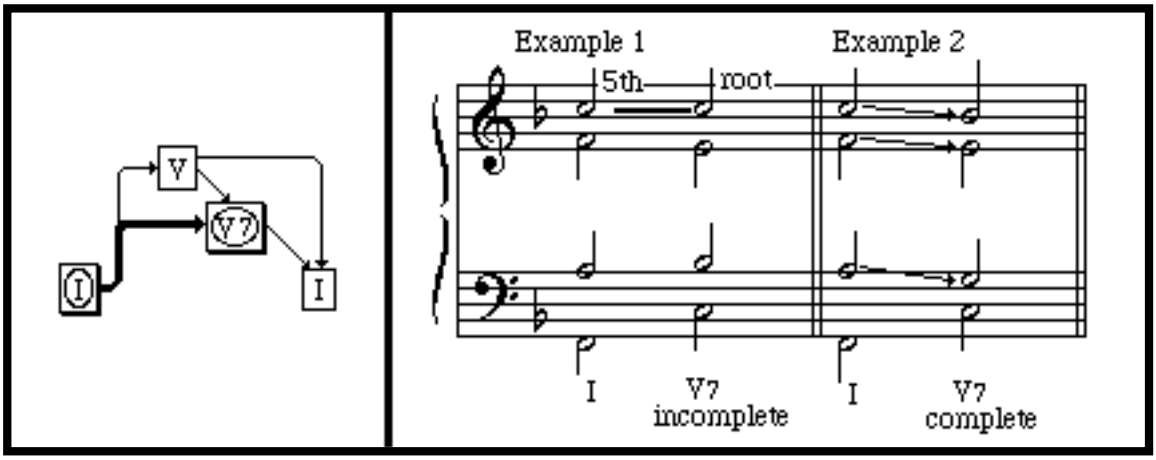
19.9 Review resolving V7 chords

•Regardless of whether a chord is incomplete in a V7 I progression, the seventh of V7 always falls by step. Begin writing the I chord with the voice which contained the seventh in the V7 chord.

WRITE these V7 I progressions.

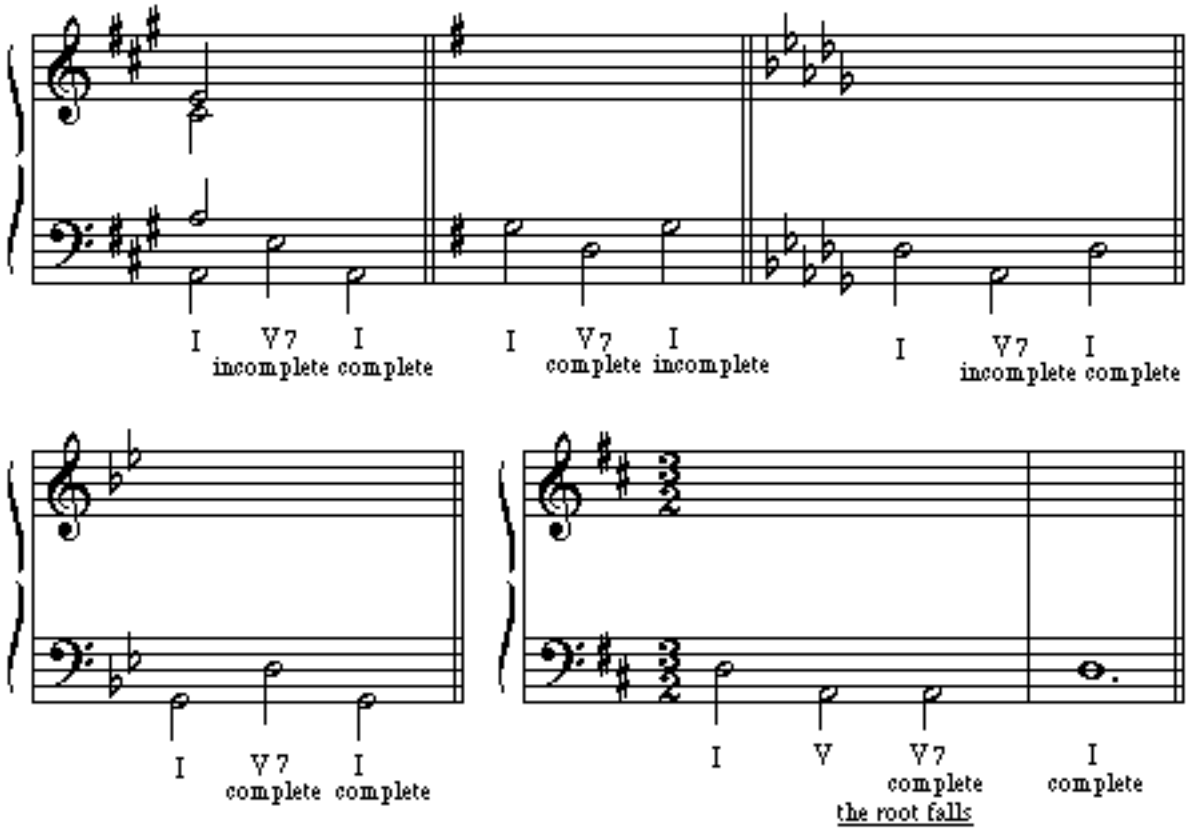


19.10 Approach V7 from I



• To approach an incomplete V7 from I, use common tone stepwise (CTS) voice leading. Example 1 shows that the common tone is the fifth of I, and that this note becomes the root of V7.
• To approach a complete V7 from I, use ALL stepwise voice leading. Example 2 shows that in this voice leading the top three voices move downward.

WRITE these progressions. SEE the previous worksheets for moving from V7 to I and from V to V7.



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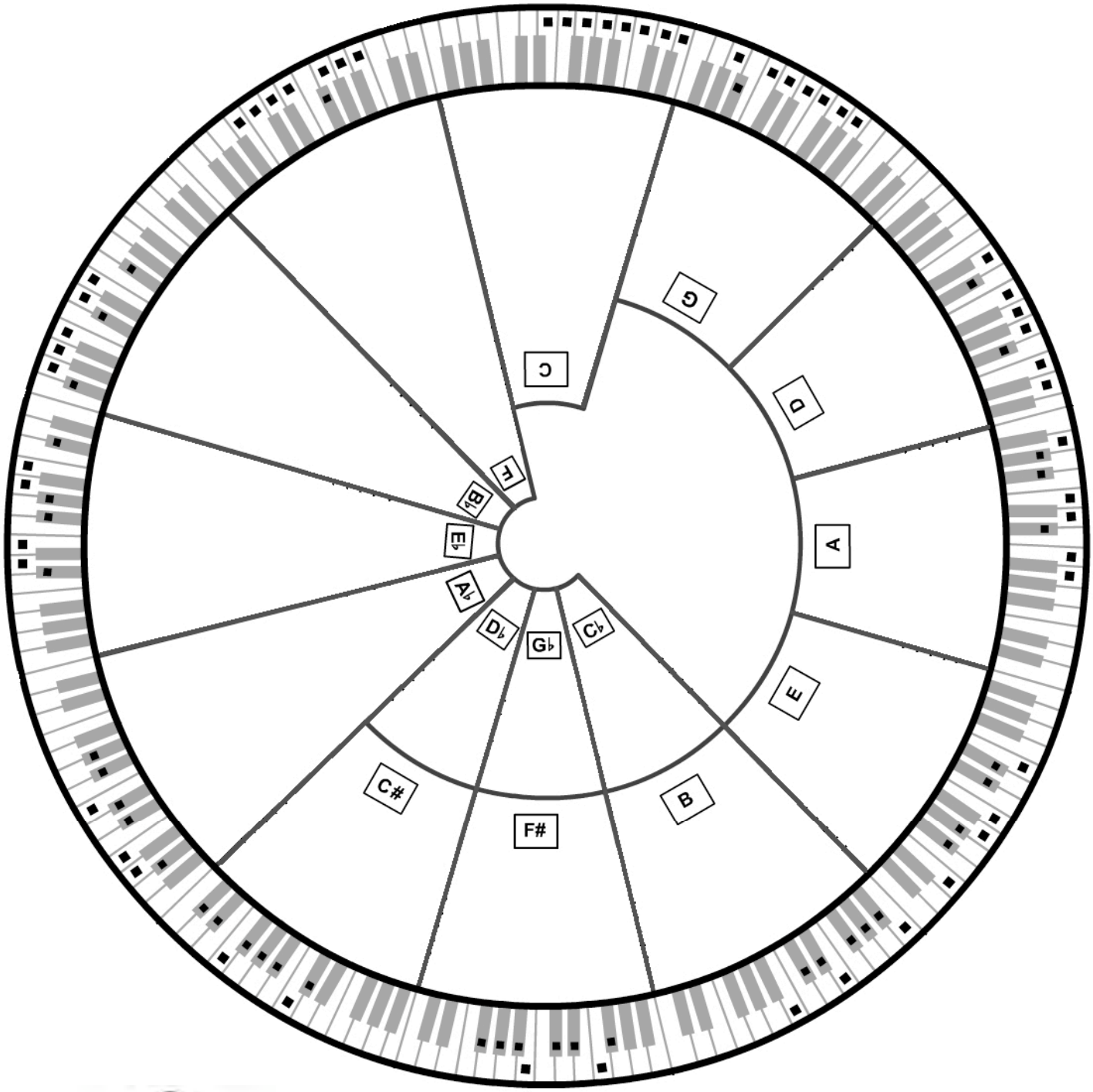
Circle 1. Major scales on the keyboard and the order of keys

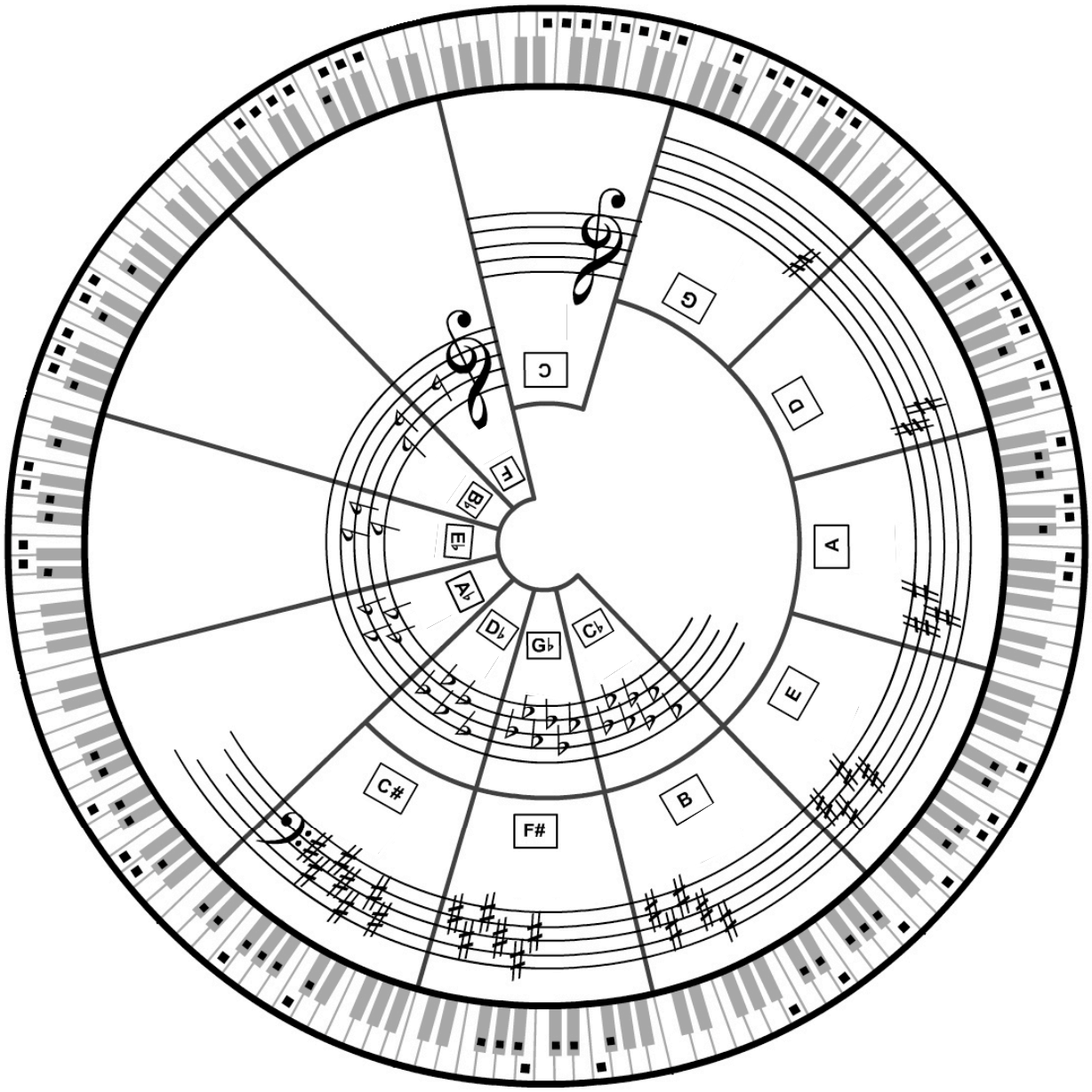
For use with: www.gmajormusictheory.org/Fundamentals/workbooks.html
Chapter 4, Worksheet 4.5

Purpose: To discover the order of keys by constructing scales with the half- and whole-step pattern, W W H W W W H. The new key is fifth note of previous scale working clockwise.



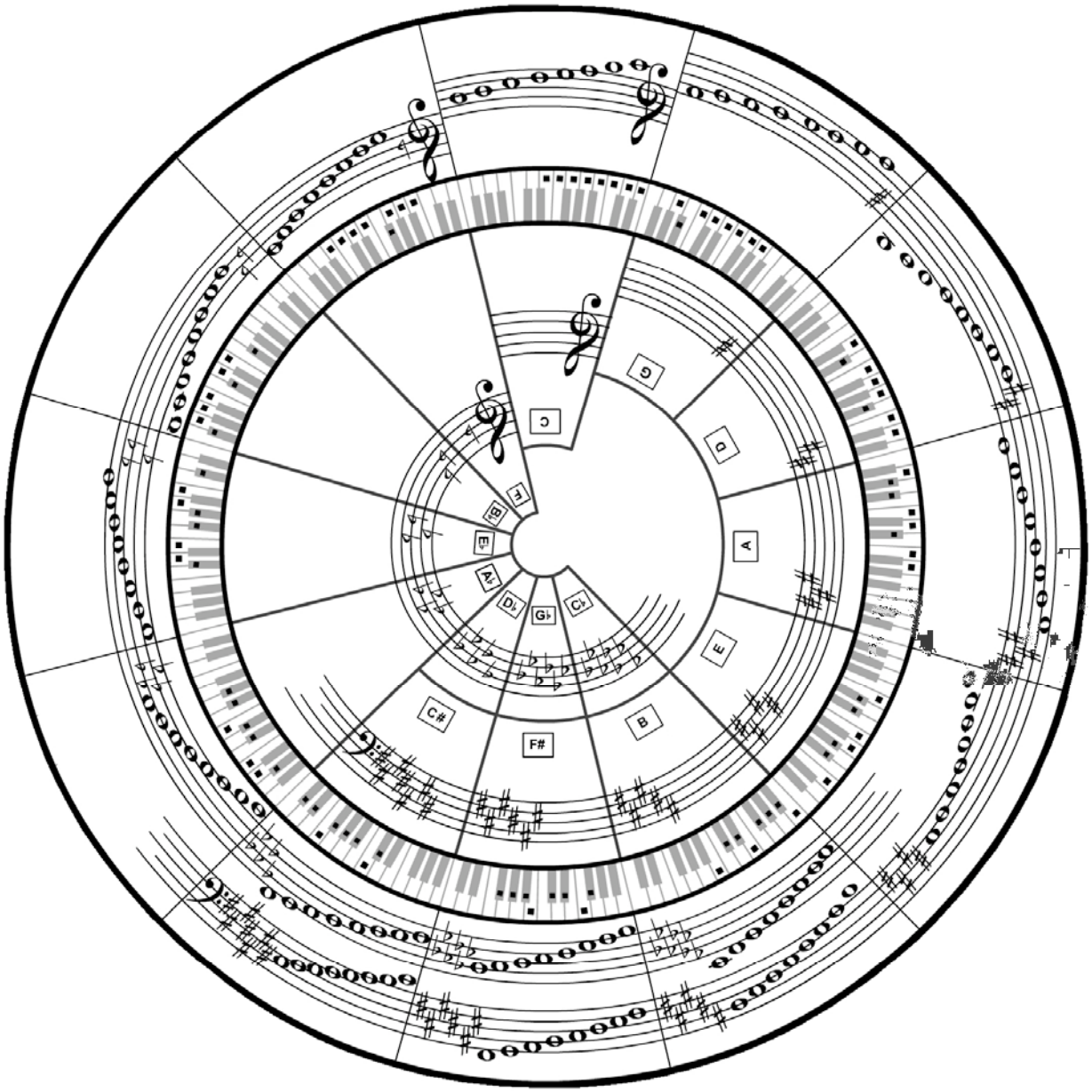
Circle 2. Key signatures for major keys

For use with: www.gmajormusictheory.org/Fundamentals/workbooks.html
Chapter 5, Worksheet 5.8 and 5.9
Purpose: To write key signatures given major keys.



Circle 3. Major scales on the staff with key signatures

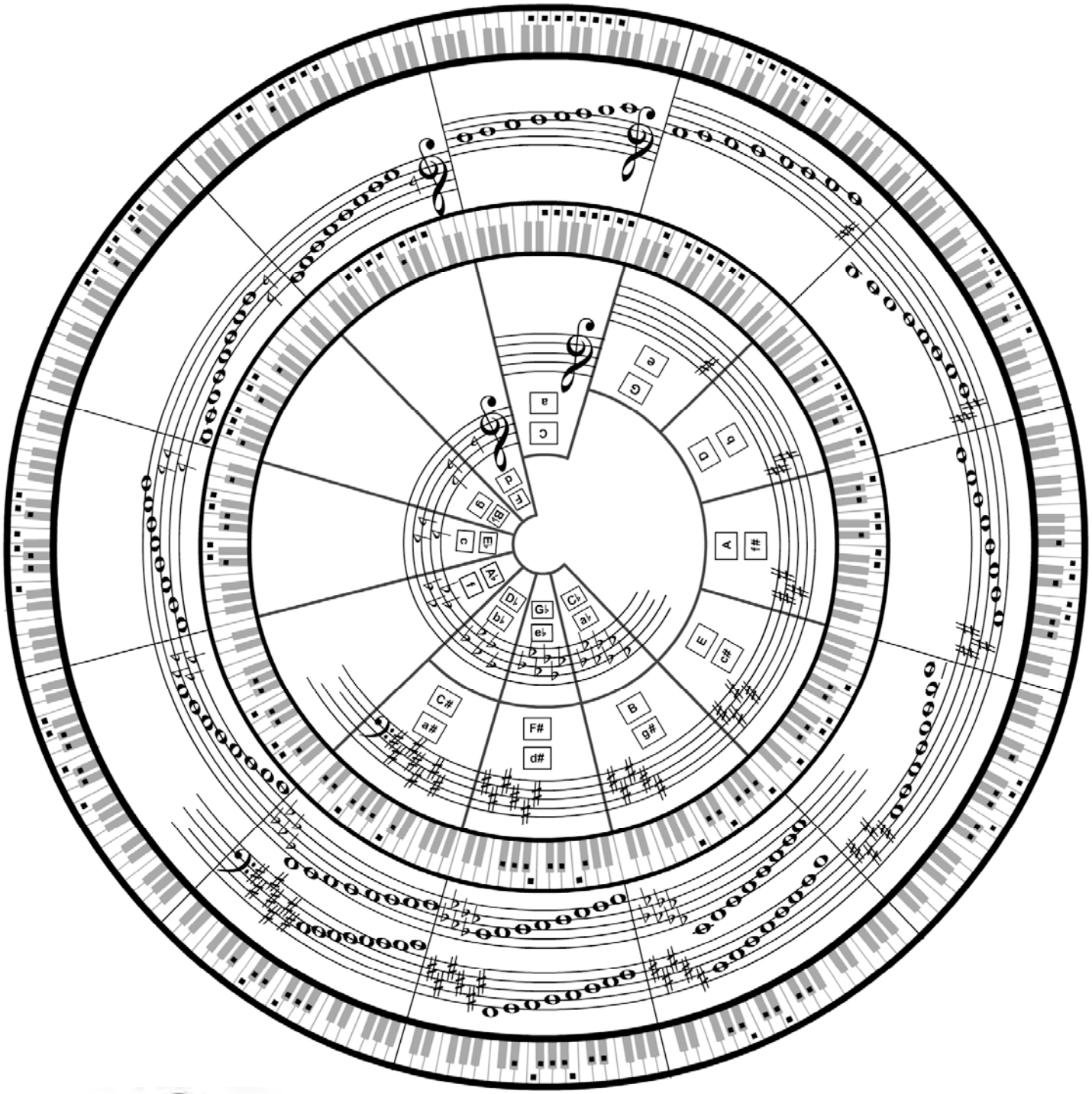
For use with: www.gmajormusictheory.org/Fundamentals/workbooks.html
Chapter 5, Worksheet 5.10
Purpose: To write major scales given key signatures.



Circle 4. Natural minor scales on the keyboard

For use with: www.gmajormusictheory.org/Fundamentals/workbooks.html
Chapter 6

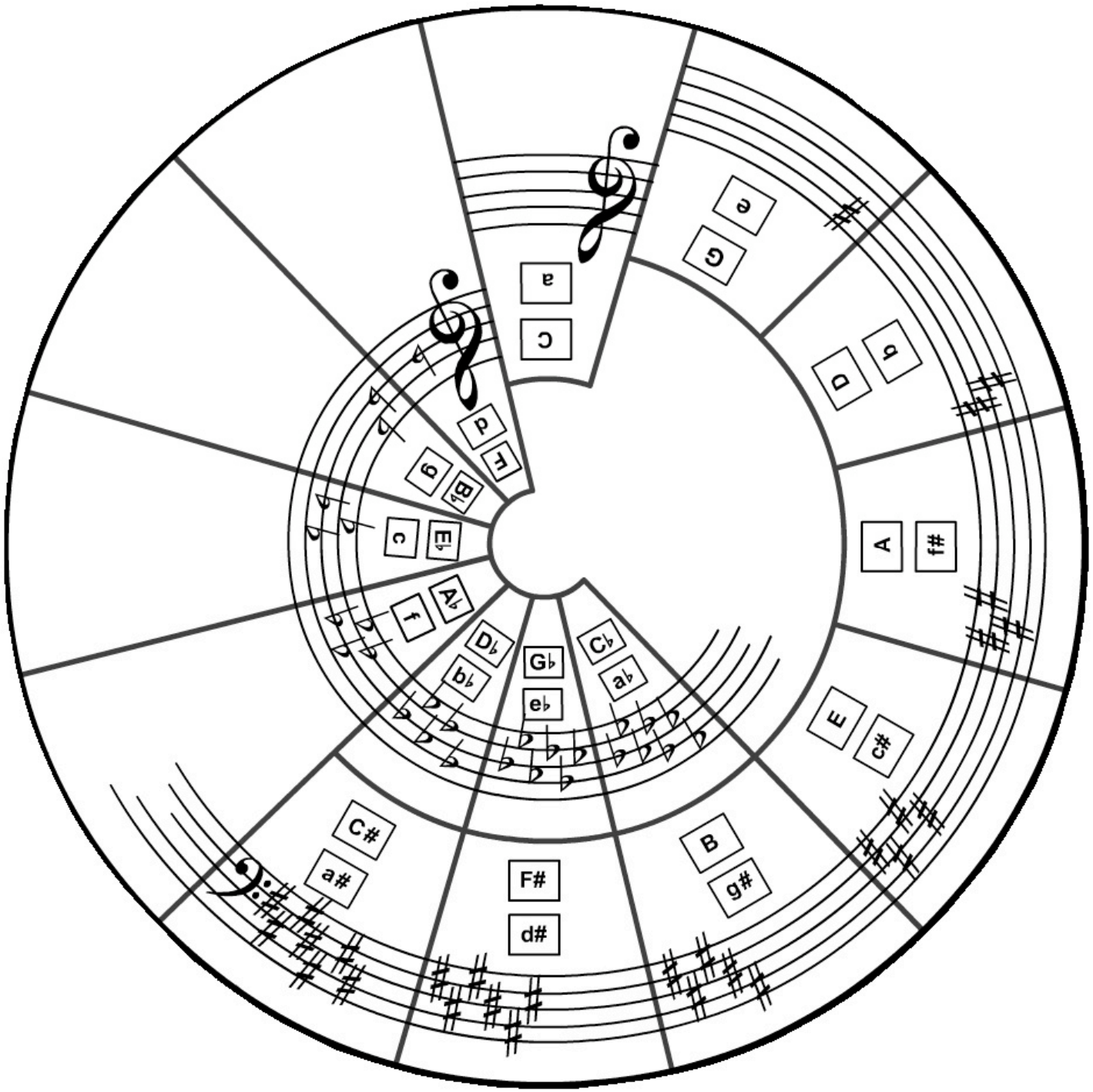
Purposes: 1) To put dots on the keyboard according to the natural minor pattern, W H W W H W W.
2) To discover relative major and minor keys.



Graphics by ExpFlash
expflash@hotmail.com

www.gmajormusictheory.org

Circle of Fifths

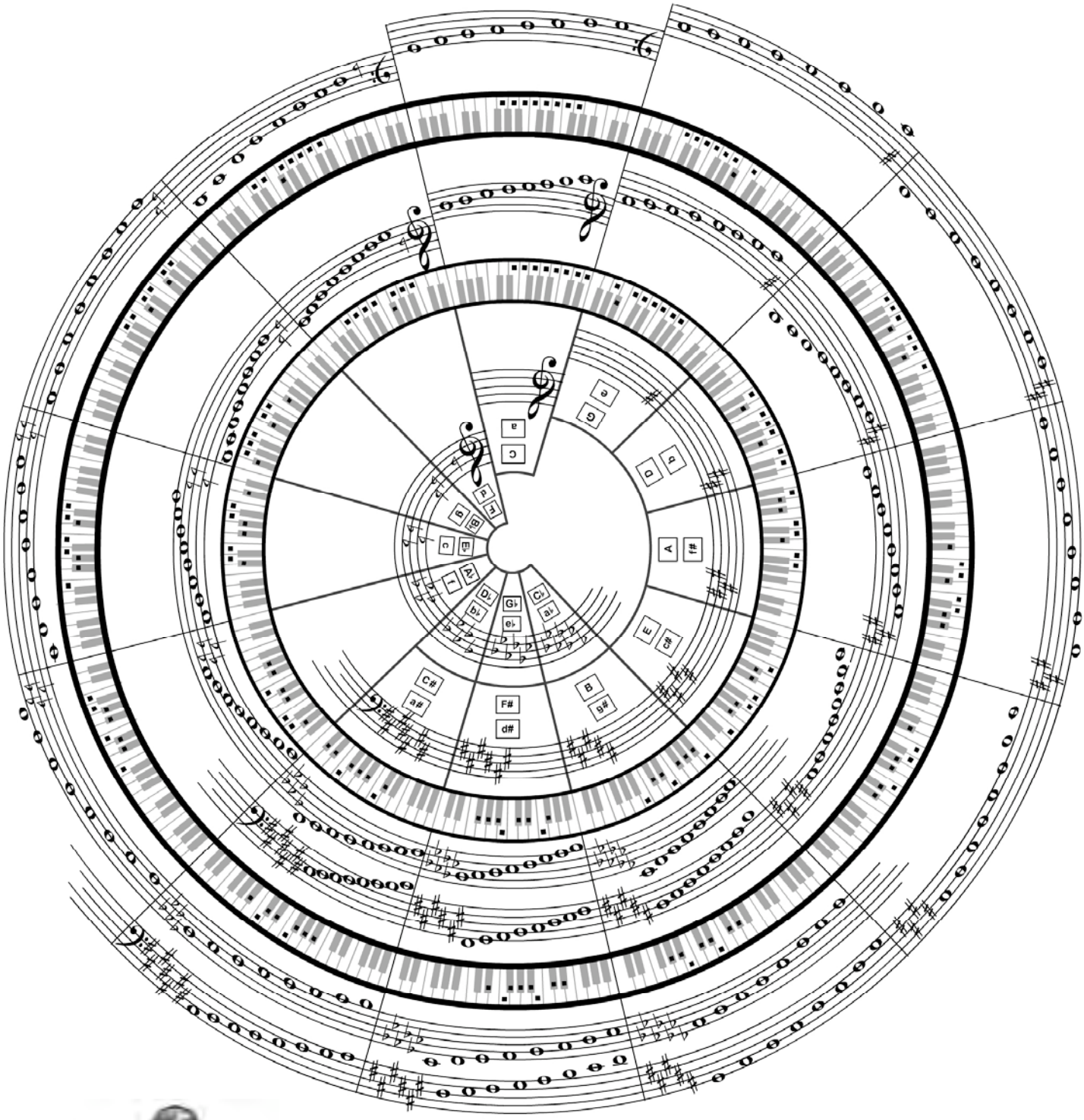


For instruction about the circle of fifths see:
www.gmajormusictheory.org/Fundamentals/workbooks.html, Chapters 4 to 7.
Also see the accompaning instructional circles.

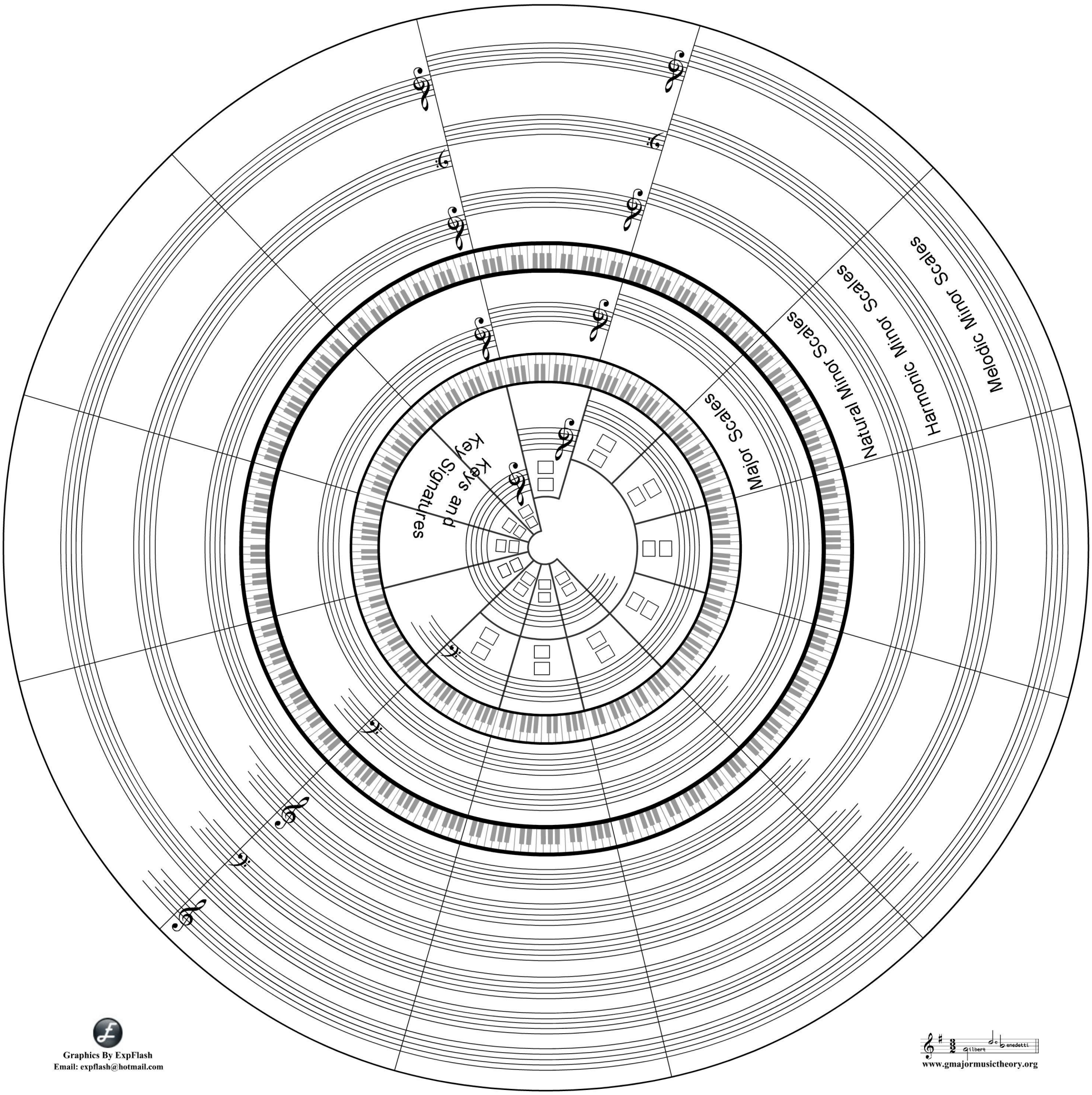
Graphics by ExpFlash
expflash@hotmail.com

Circle 5. Natural minor scales on the staff

For use with: www.gmajormusictheory.org/Fundamentals/workbooks.html
Chapter 7, Worksheet 7.4
Purposes: 1) To write natural minor scales given the key signature
2) To write key signatures and natural minor scales given the minor key.

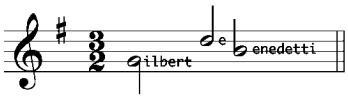


Graphics by ExpFlash
expflash@hotmail.com



Keys, Key Signatures and Scales to fill a large circle of fifths

by



Gilbert DeBenedetti
www.gmajormusictheory.org

These pages show the keys, key signatures and scales which belong on a graphic of the circle of fifths. This graphic is available at

http://www.gmajormusictheory.org/Fundamentals/workbooks.html

You can print the jpg of the circle of fifths at FedEx Kinko's or anywhere that has an oversized printer.

To help position the information on these pages onto the circle, keep in mind the following:

- The information on these pages begins on the inside of the circle, with the names of keys to be placed in rectangles, and progresses outward to melodic minor scales.
- On staffs in the circle, always read left to right (counter-clockwise).
- Indented staffs and keyboards on these pages are continuations of staffs and keyboards on the circle of fifths.
- Clock times (for example, 12:00) on these pages refer to the position of hours on an analog clock and correpond to positions on the circle of fifths. The short staffs for the keys of C and A minor are on top, at 12:00.

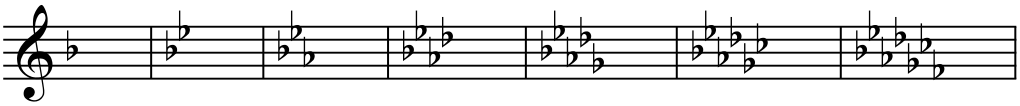
Keys, Key Signatures and Scales to fill a large circle of fifths

1. KEYS

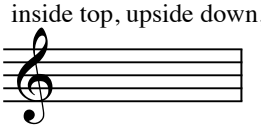
In the boxes near the center of the circle:
Inside left pairs of boxes starting at 11:00
  Inside boxes: F, B♭, E♭, A♭, D♭, G♭, C♭
  Outside boxes: d, g, c, f, b♭, e♭, a♭
the pair of boxes on top, upside down at 12:00
  Inside box: C
  Outside box: a
pairs of boxes on bottom, starting at 7:00, and going right
  Inside boxes: C#, F#, B, E, A, D, G
  Ouside boxes: a#, d#, g#, c#, f#, b, e

2. KEY SIGNATURES

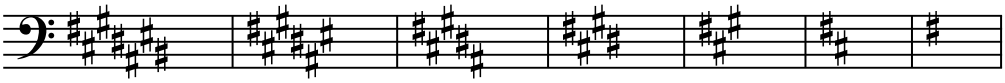
inside left, beginning at 11:00



inside top, upside down, at 12:00

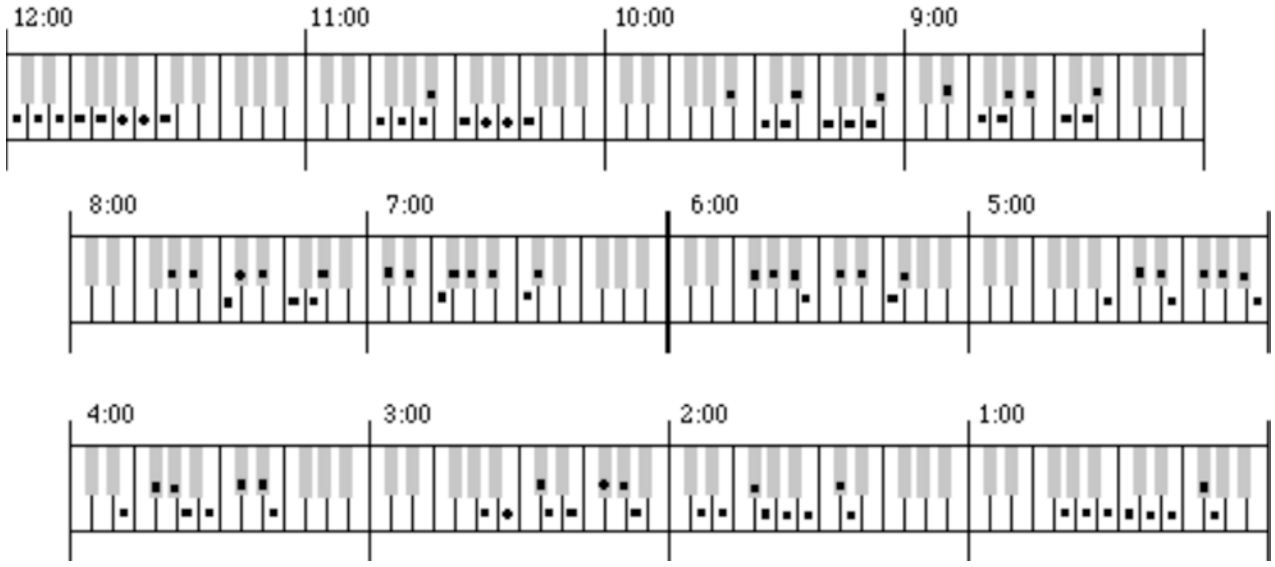


starts at bottom (7:00) and goes right

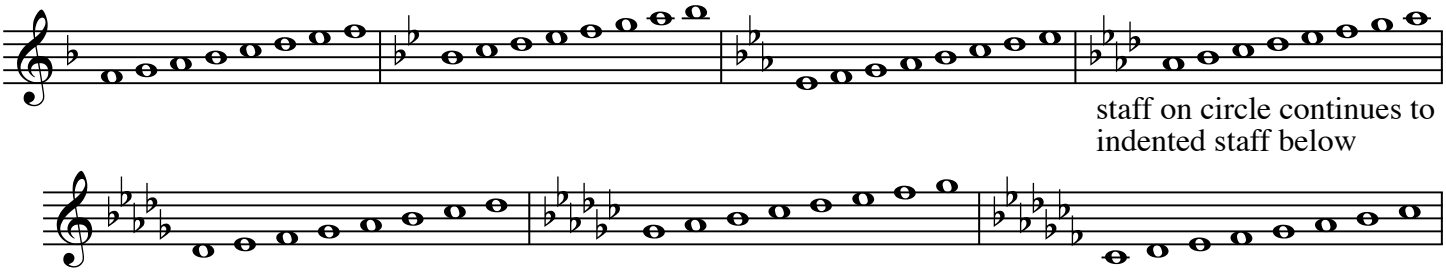


3. MAJOR SCALES

Inner keyboard

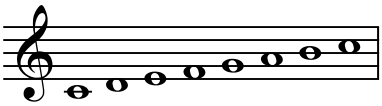


left, beginning at 11:00

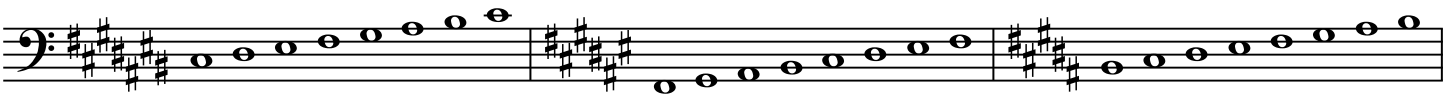


staff on circle continues to
indented staff below

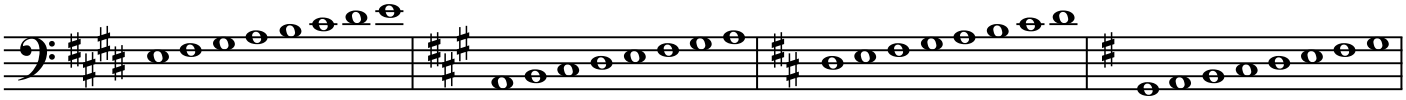
top, upside down, at 12:00



starts at bottom (7:00) and goes right

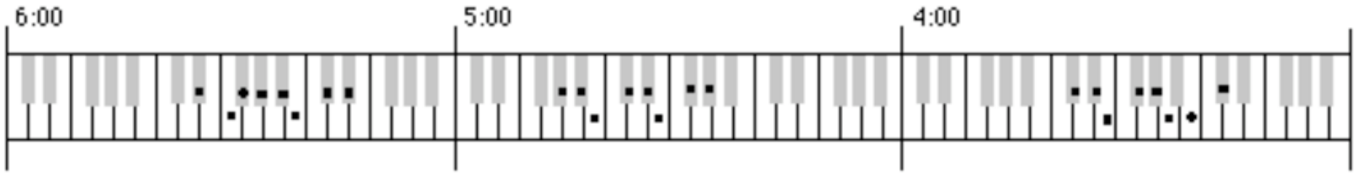


This is the most crowded scale

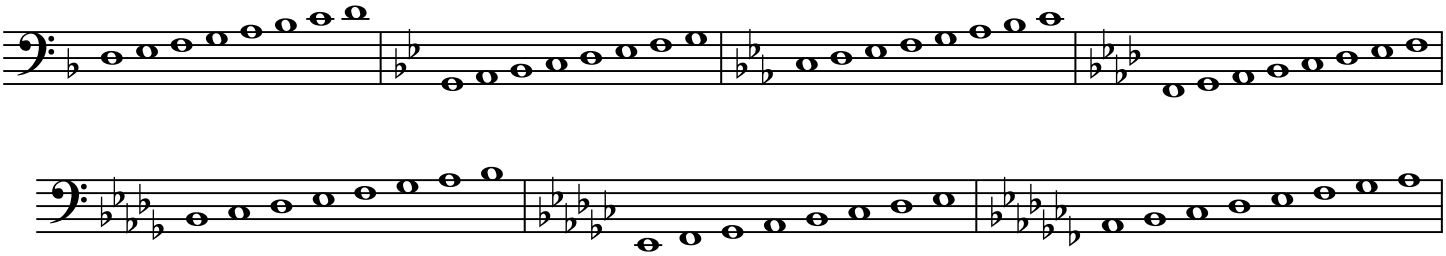


4. MINOR SCALES

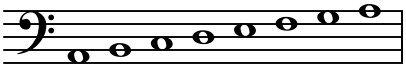
Outer keyboard



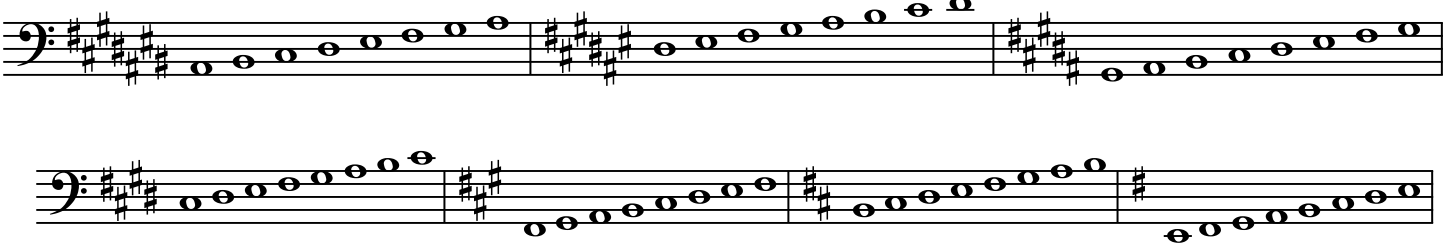
left, beginning at 11:00



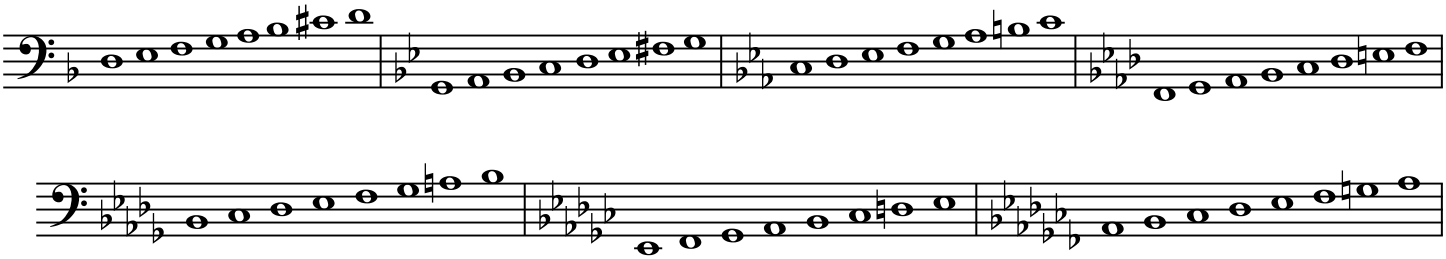
top, upside down, at 12:00



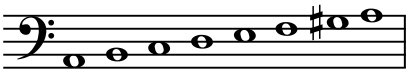
starts at bottom (7:00) and goes right



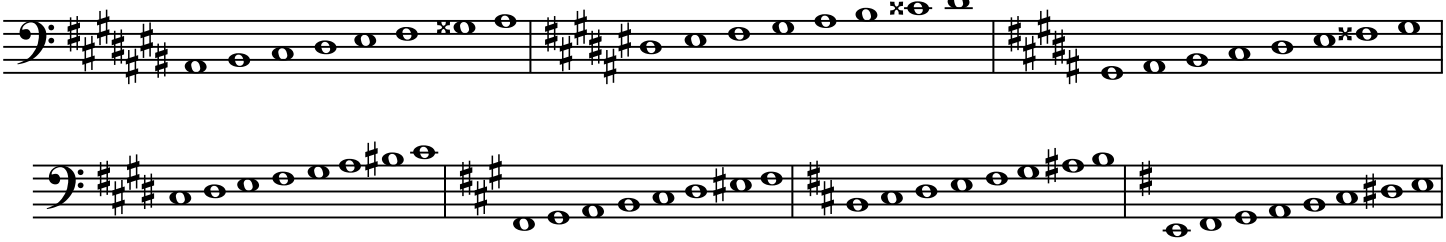
left, beginning at 11:00



top, upside down, at 12:00



starts at bottom (7:00) and goes right



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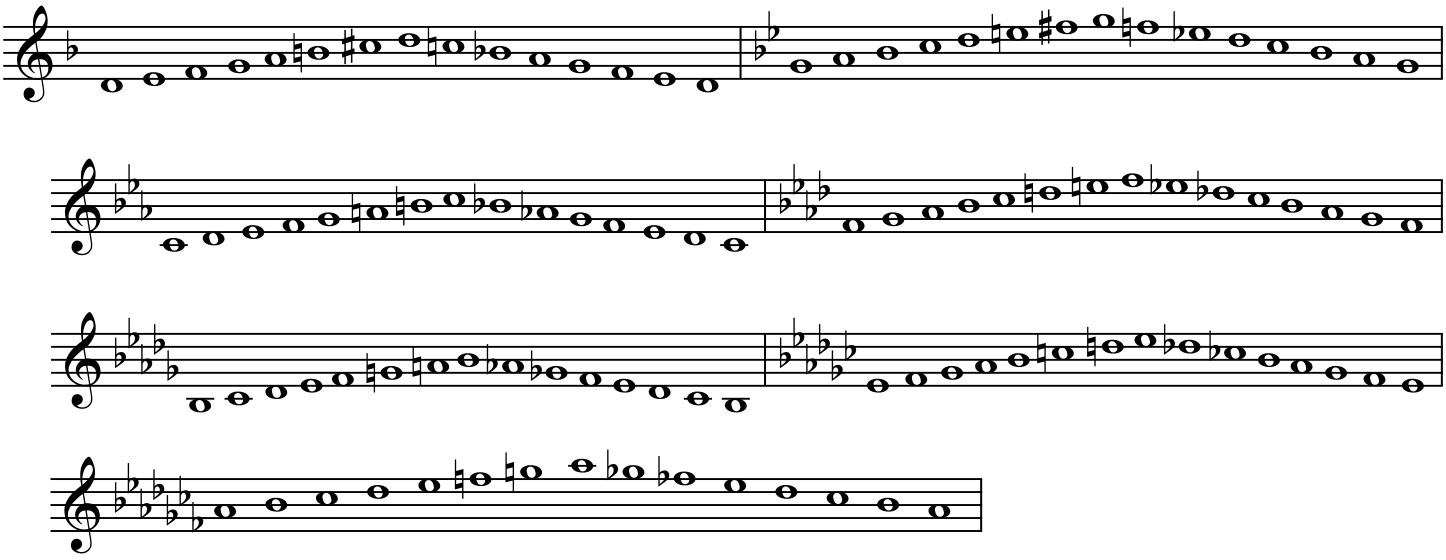
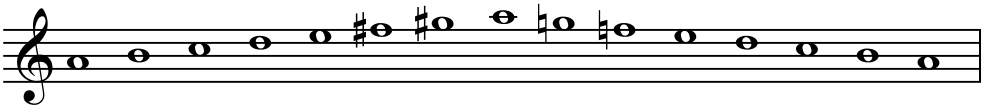
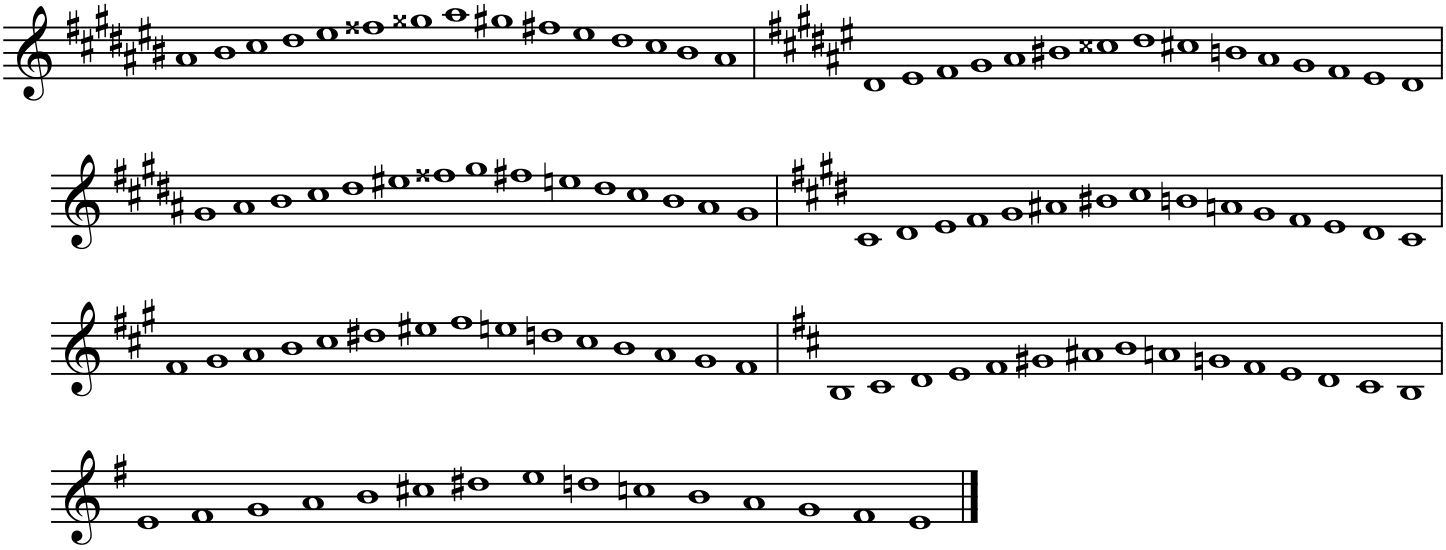
left, beginning at 11:00

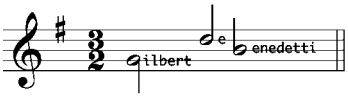


top, upside down, at 12:00



starts at bottom (7:00) and goes right.

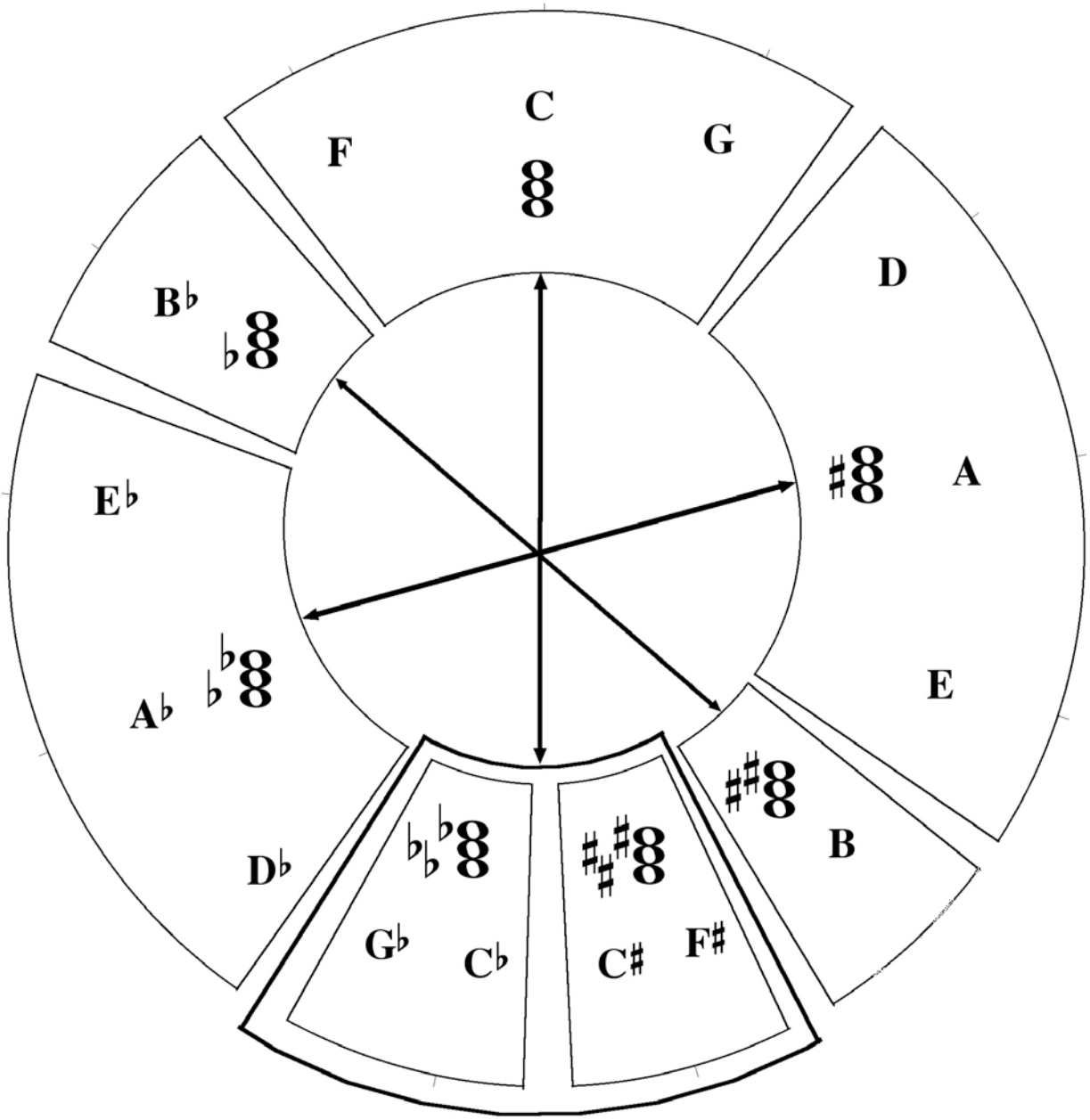




Circle 7. Major Triads

For use with: www.gmajormusictheory.org/Fundamentals/workbooks.html
Chapter 10B, Worksheet 10B.4

Purpose: To show relationships among major triads. Arrows relate "opposite" triads in terms of the configuration of sharps and flats. Arrows also show that the triads' roots have the same letters in opposite groups.



Graphics by ExpFlash
expflash@hotmail.com

ANSWERS TO CHAPTER ONE, PATHWAYS TO HARMONY

By Gilbert DeBenedetti
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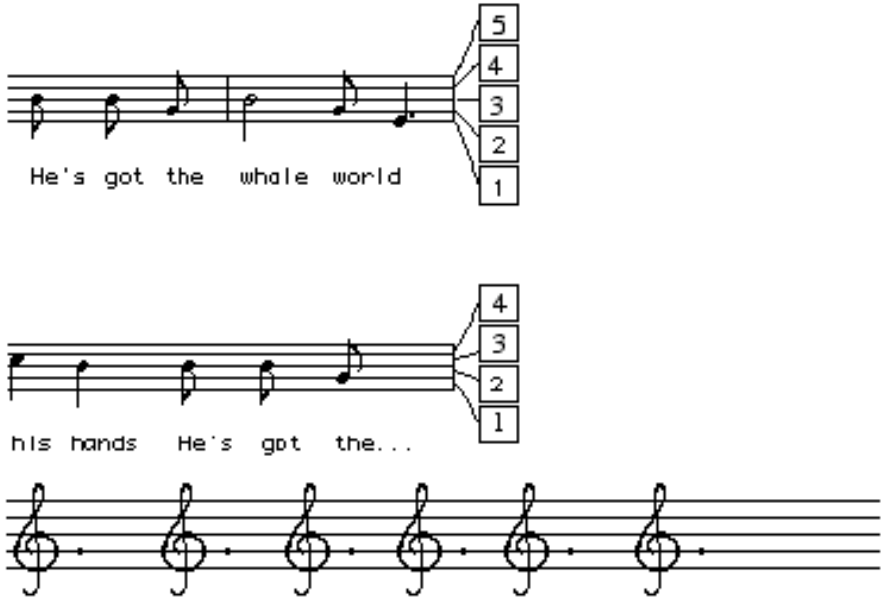
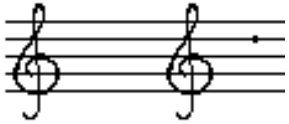
1.2

1.3



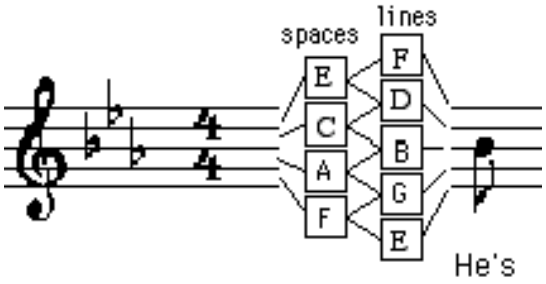
1.4

1. A staff is a set of five lines and four spaces.
2. The note letters are A, B, C, D, E, F, G
3. A clef is a symbol which identifies a line and space with a letter.
4. The G or treble clef identifies the second line as the note G above the piano's middle C.
5.



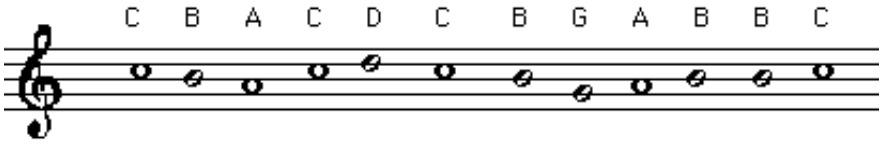
6.higher
7. lower

1.5



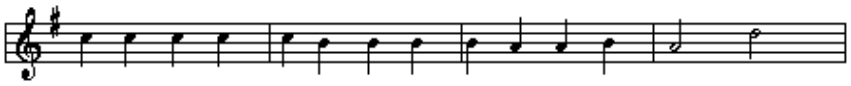
1.6

1. D E D C B C D, A B C, B C D
2. G C E D C A A G G C, D E D E D C A
3.



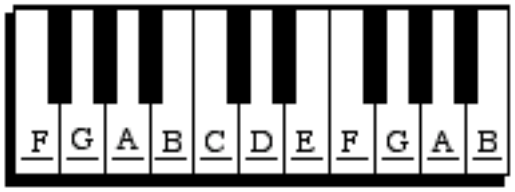
1.7

1. Quarter
2. quarter
3. half
4. Whole



1.8

1.



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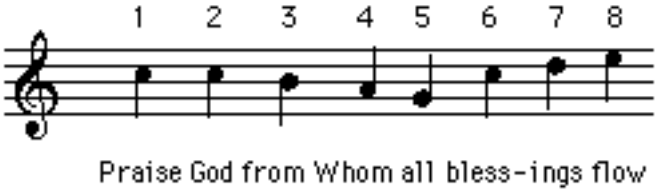
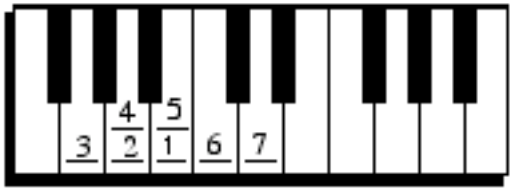
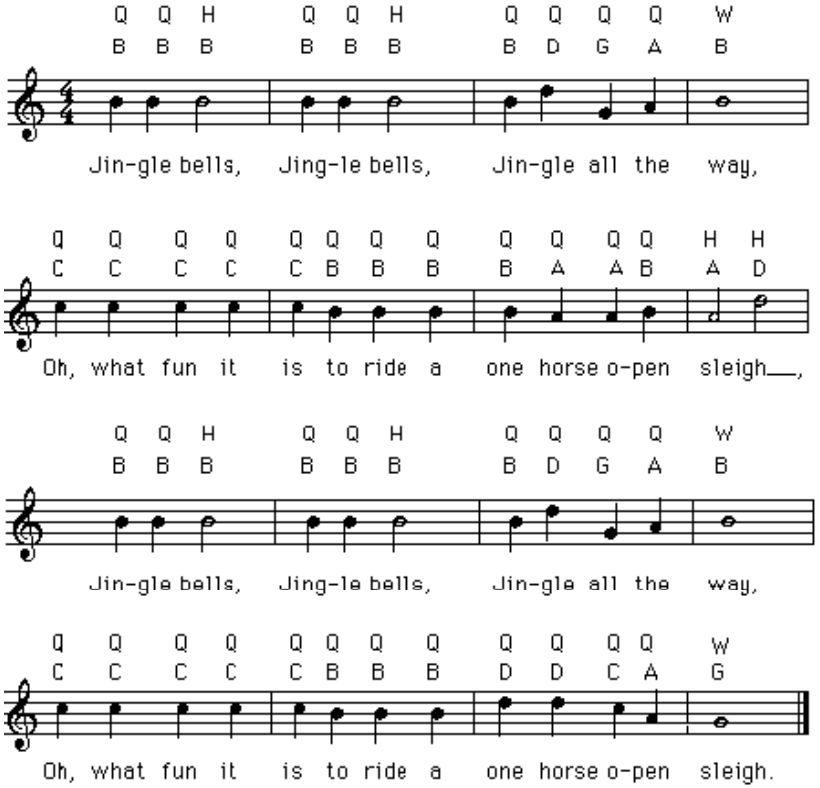


3.



1.9



ANSWERS TO CHAPTER TWO
PATHWAYS TO HARMONY

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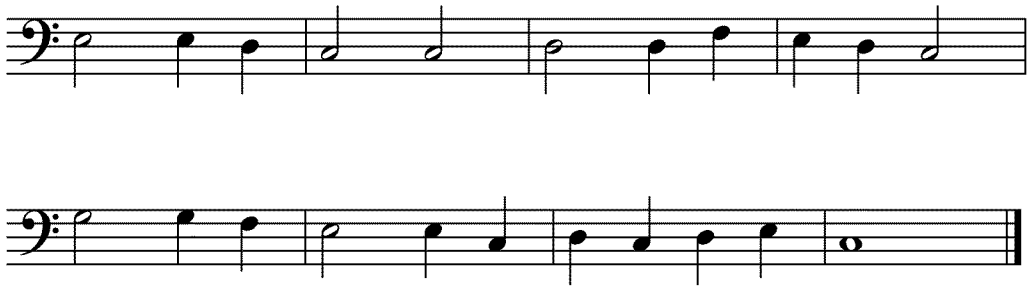
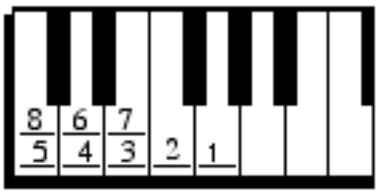
2.2

1. G E G | G E G | A G F E | D E F
2.



2.3

A.



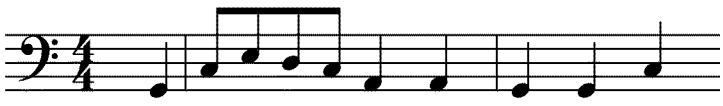
B.

1. Good Boys Do Fine Always
2. FACE
3. Every Good Boy Does Fine
4. All Cows Eat Grass

2.4

1.

2.



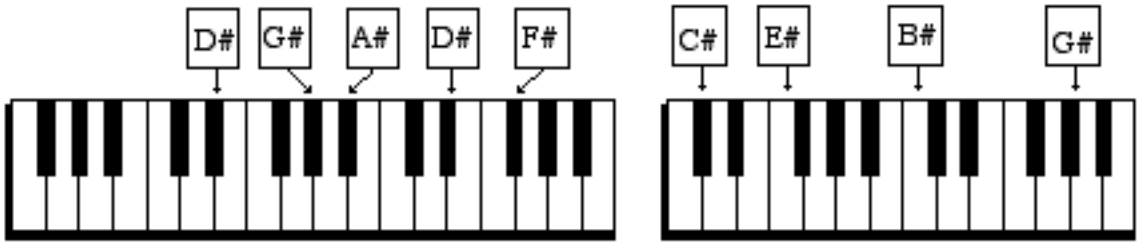
2.5

B B C D D C B A G G A B B A A

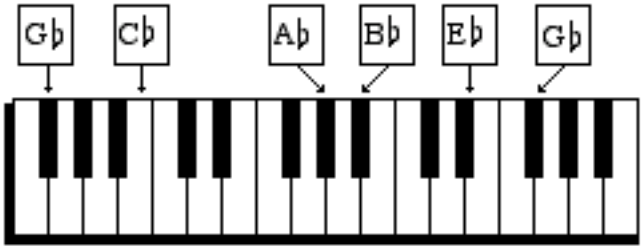
B B C D D C B A G G A B A G G

2.6

1.



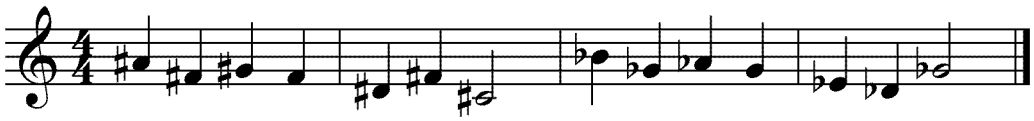
2.



2.7 A.

1. higher
2. lower
3. right
4. left
5. right
6. left
7. higher
8. lower

B.

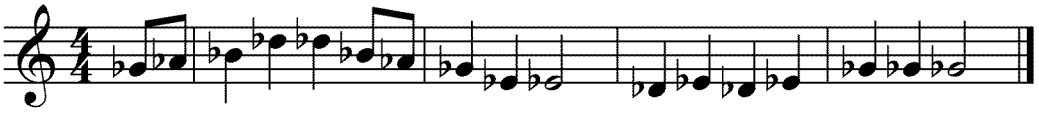


2.8

1.

G#	A#	B
C#	Eb	Gb
C	Db	Bb

2.



ANSWERS TO CHAPTER THREE
PATHWAYS TO HARMONY

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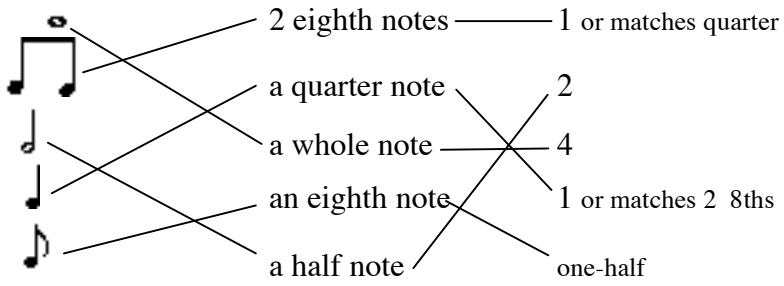
3.1

1. A beat is <u>a steady pulse which underlies the music</u>

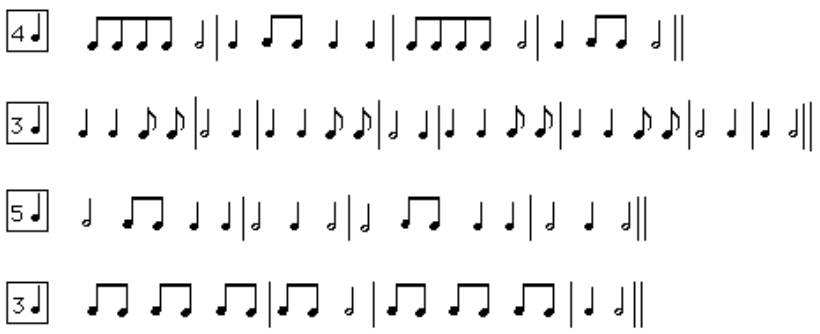
2.



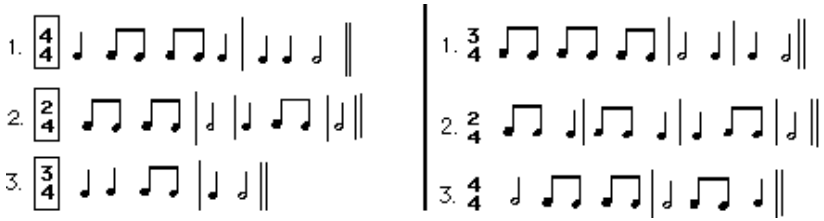
3.

a.
b.
c.
d.
e.

3.2



3.3



3.4 No written work

3.5

1.

a.
b.
c.

2. a. 3/4 b. 2/4 c. 6/4

3.6

1.
2.
3.
4.
5.

ANSWERS TO CHAPTER FOUR
PATHWAYS TO HARMONY

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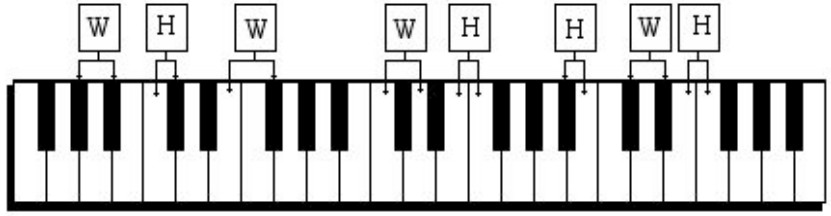
4.1



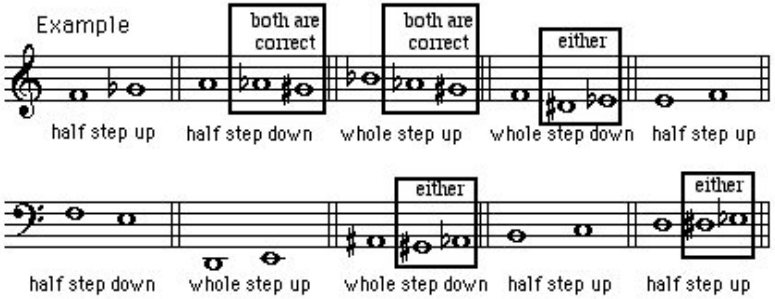
4.2

2. W H W E H
   W W H E E

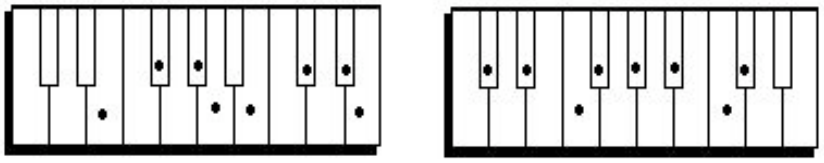
4.3

1. H W H W W W H

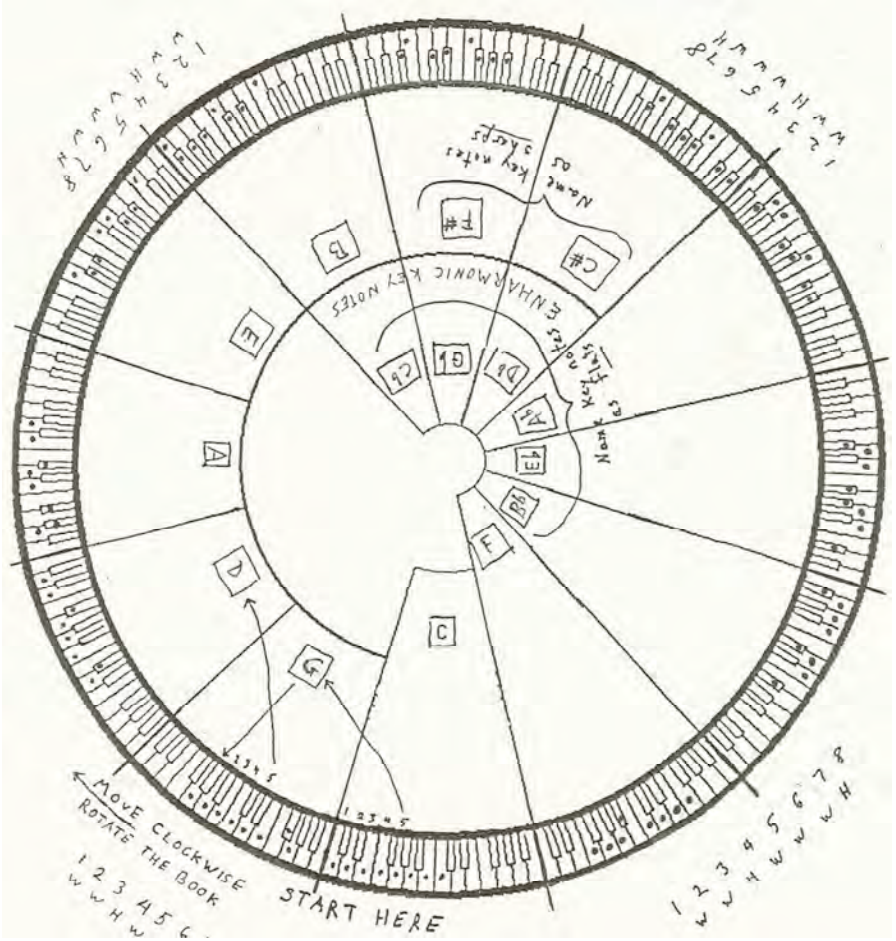
2.



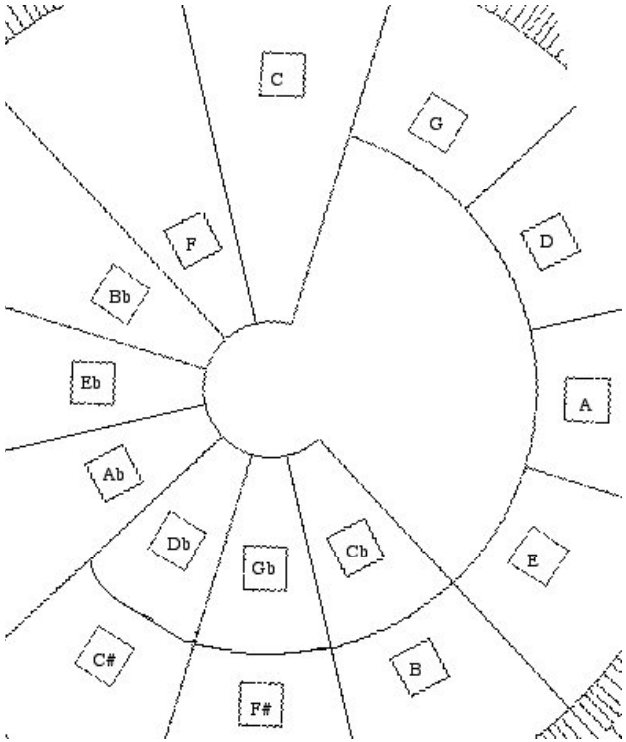
4.4



4.5



4.7



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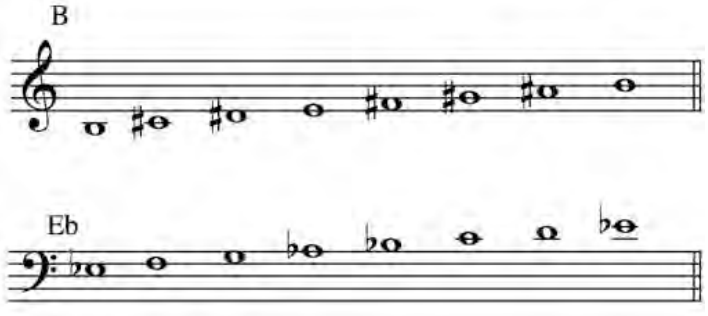
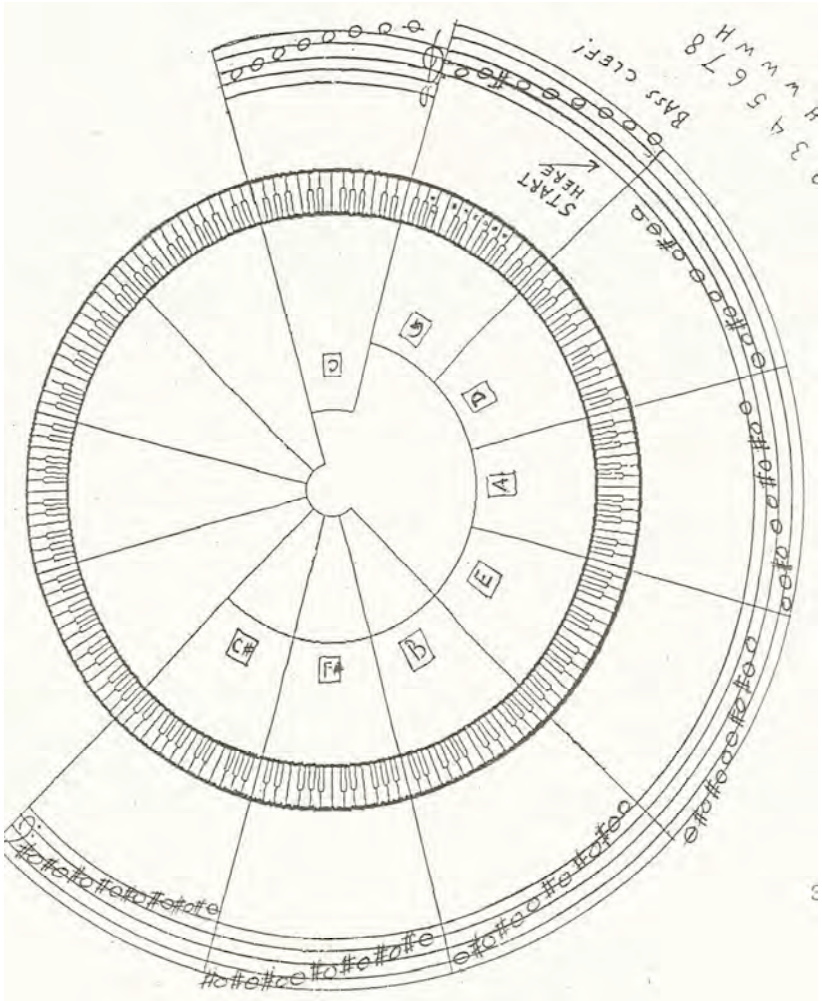
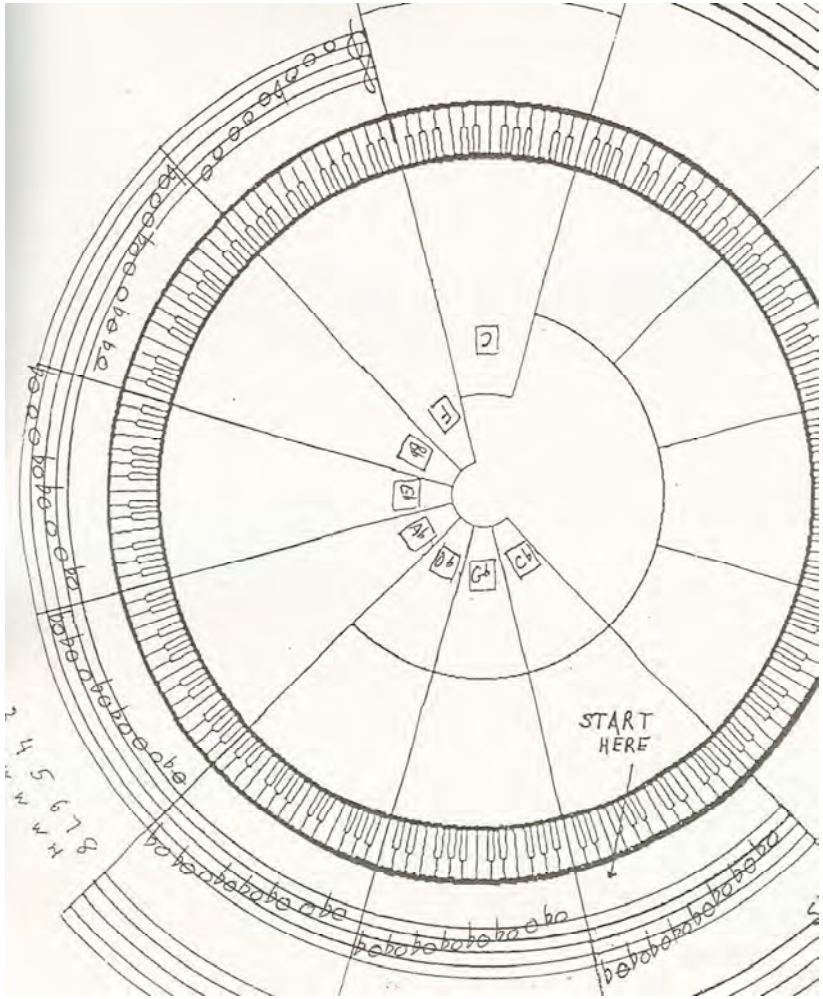


4.9



4.10



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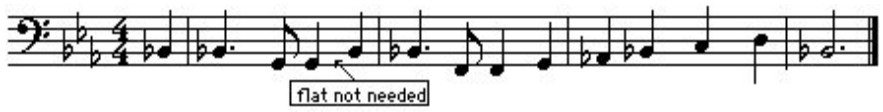
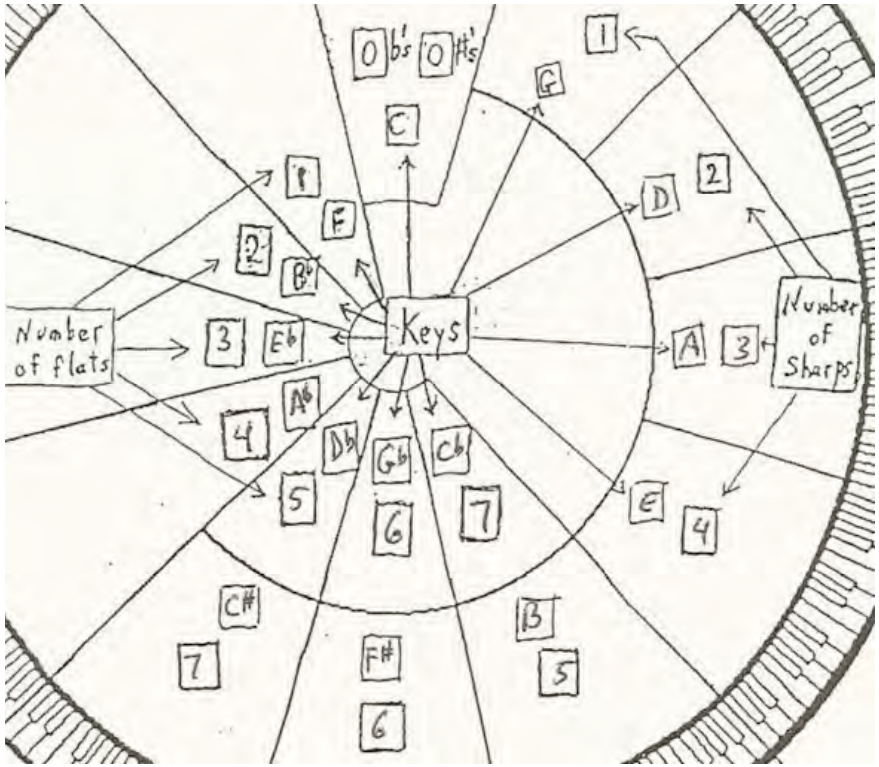
5.1



5.2



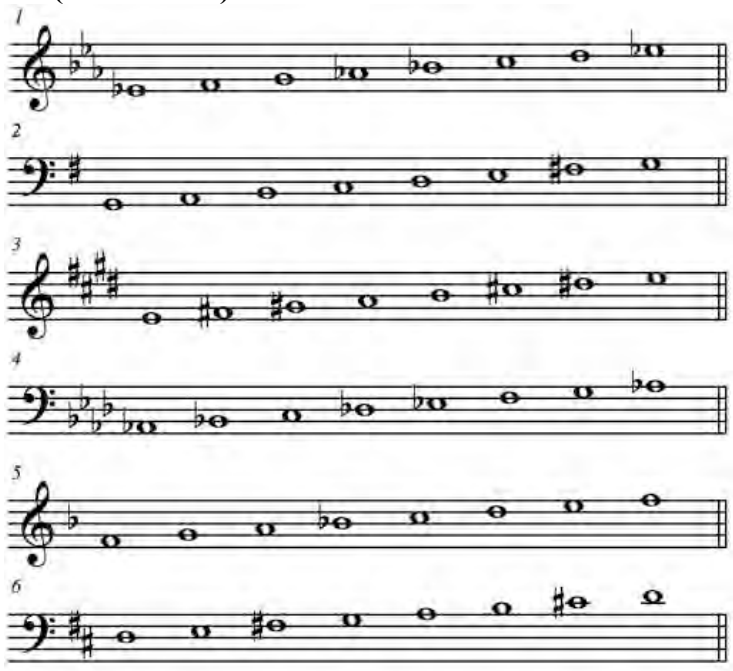
5.3

1. G E Eb Db D F
   Bb Cb A F# Ab E
2. a. 5
   b. 6

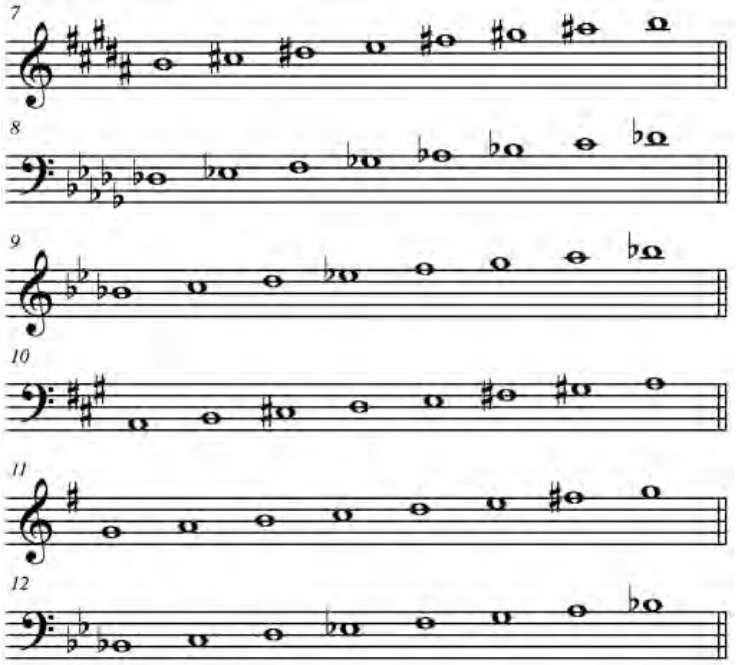
5.4

1. Eb (example) Db Bb Cb Gb
2. E (example) G F# C# B

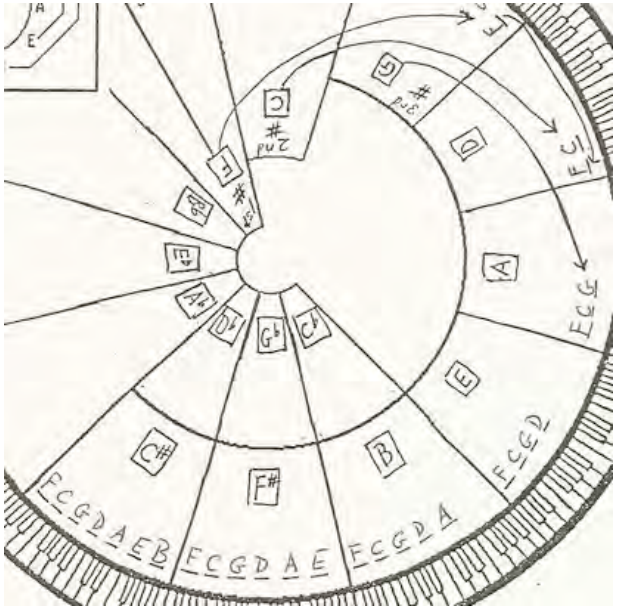
5.5 (column one)



5.5 (column two)

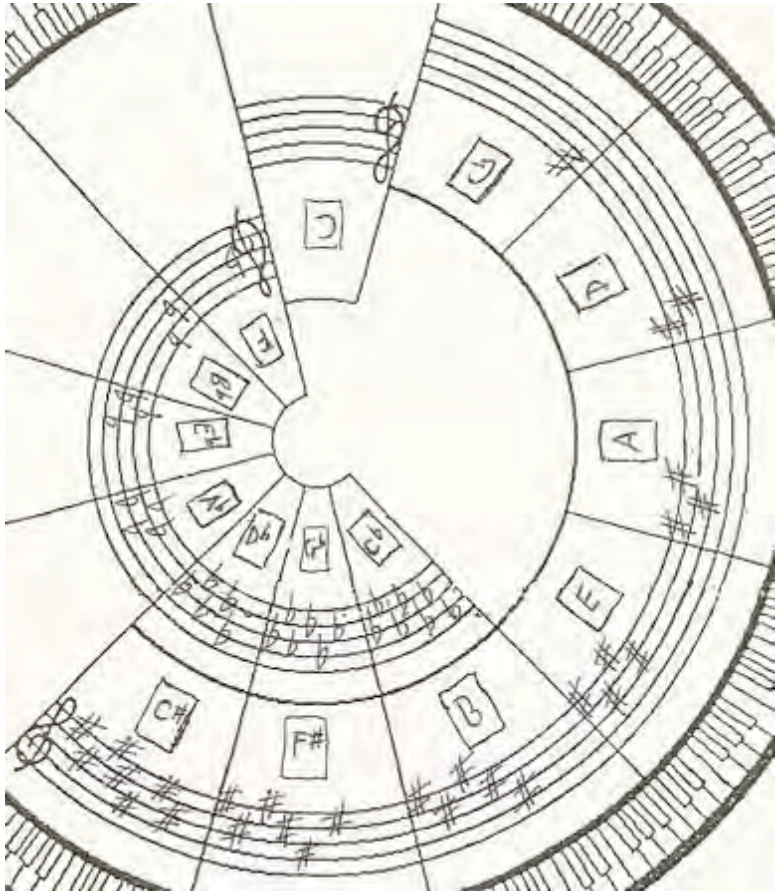


5.6

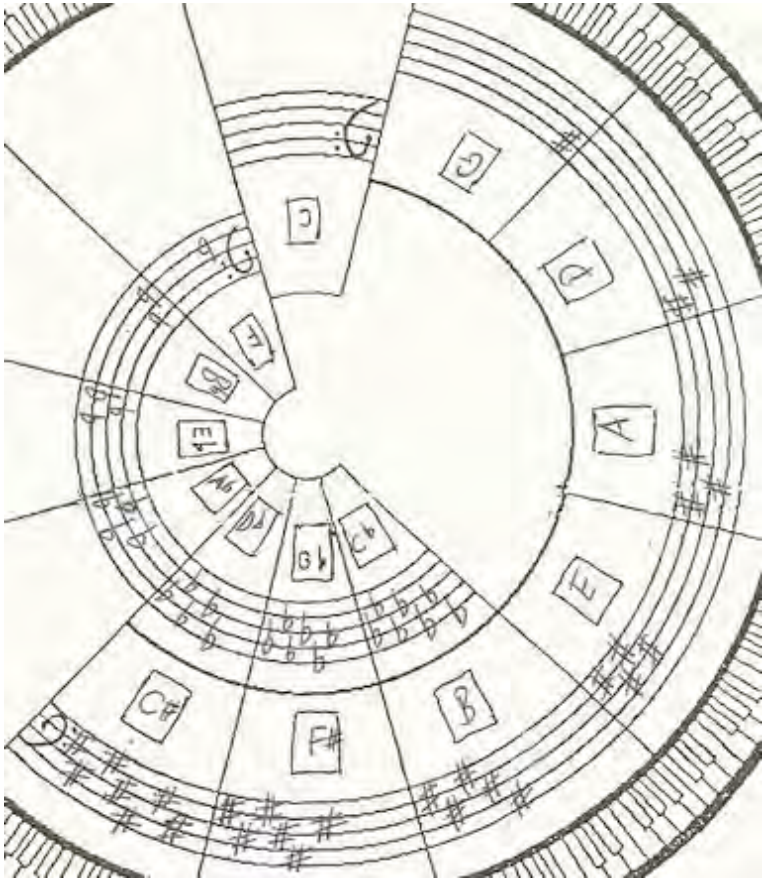


5.7

5.8



5.9



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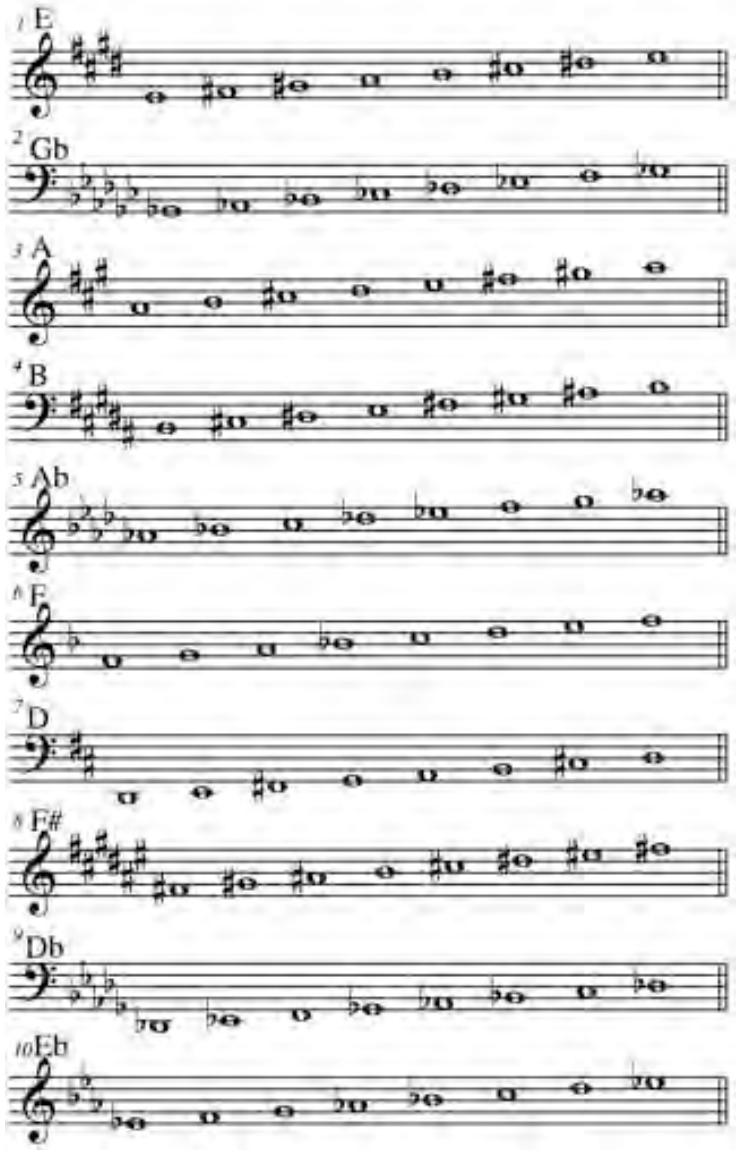

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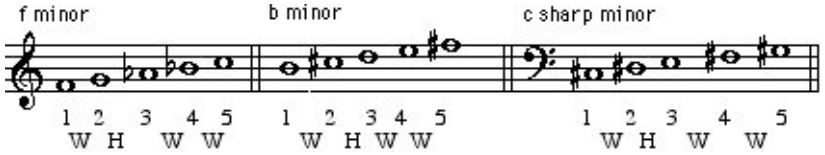
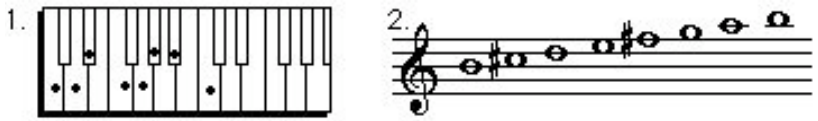
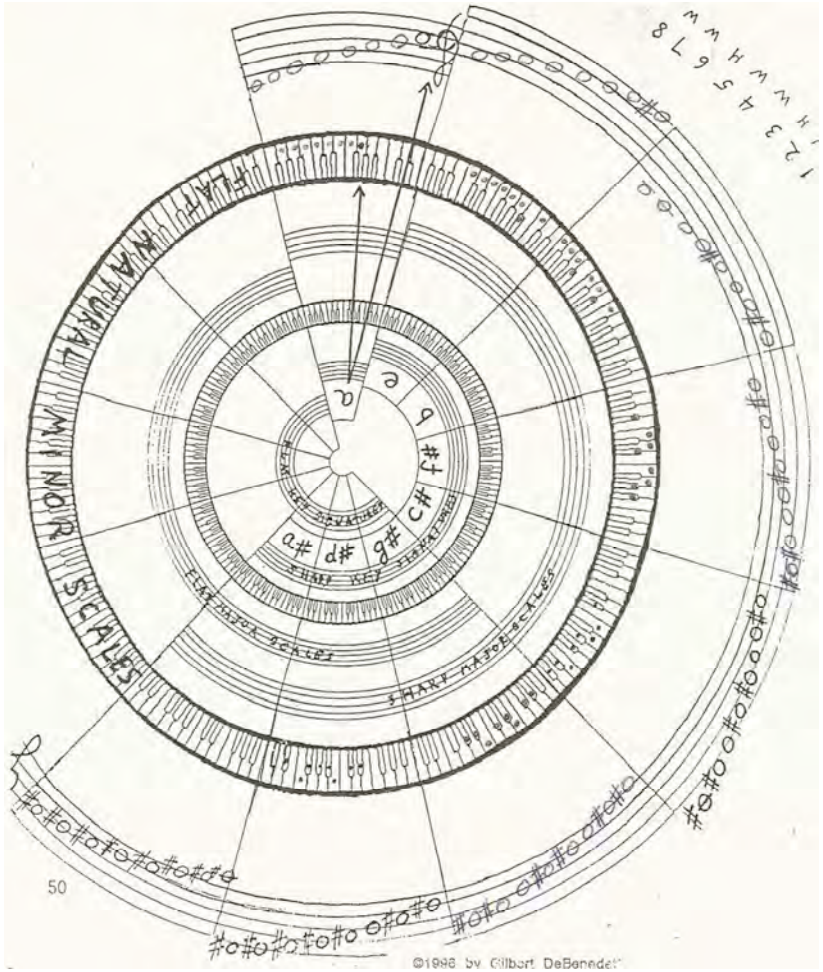
6.1



6.2



6.3



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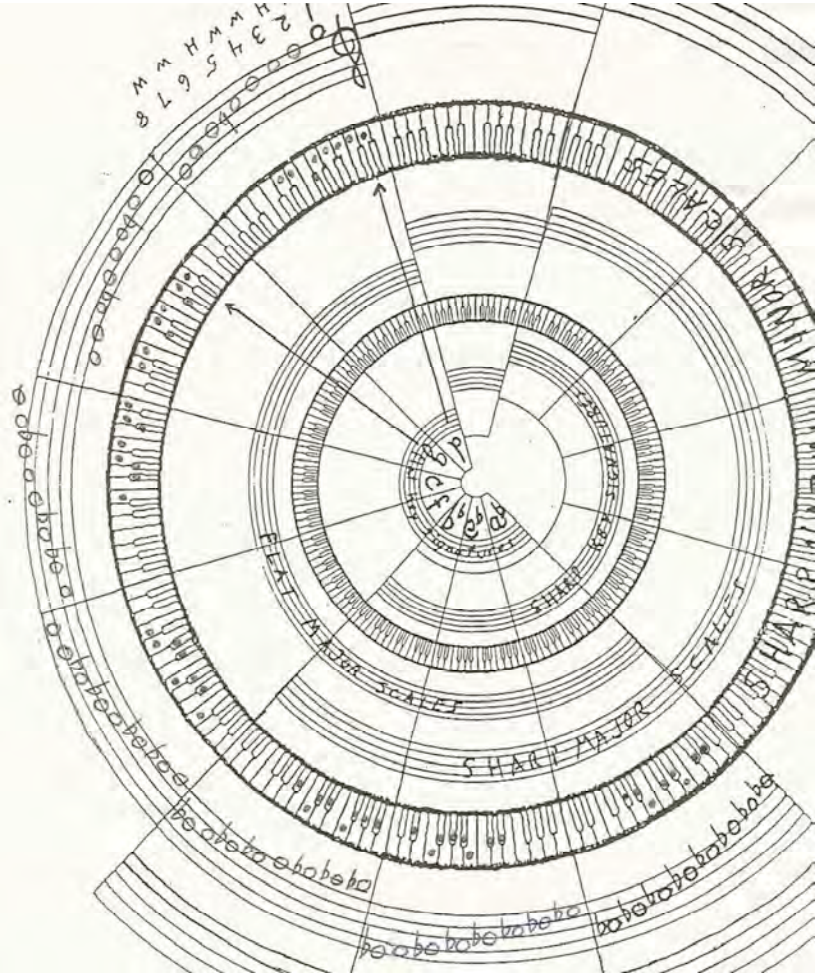
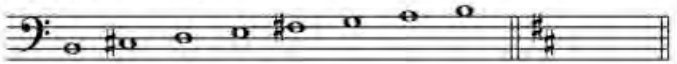


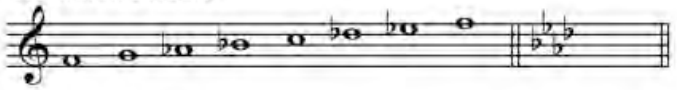
6.5

a. b natural minor



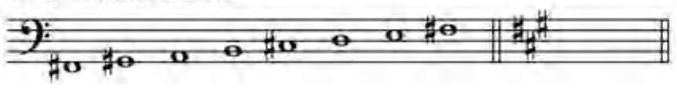
same as D Major

b. f natural minor



same as A♭ Major

c. f# natural minor



same as A Major

6.6

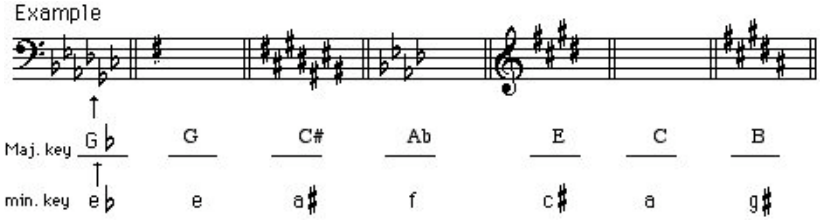
Major keys	B♭	A	G	E	D	F#	E♭
Minor keys	g	f#	e	c#	b	d#	c

6.7

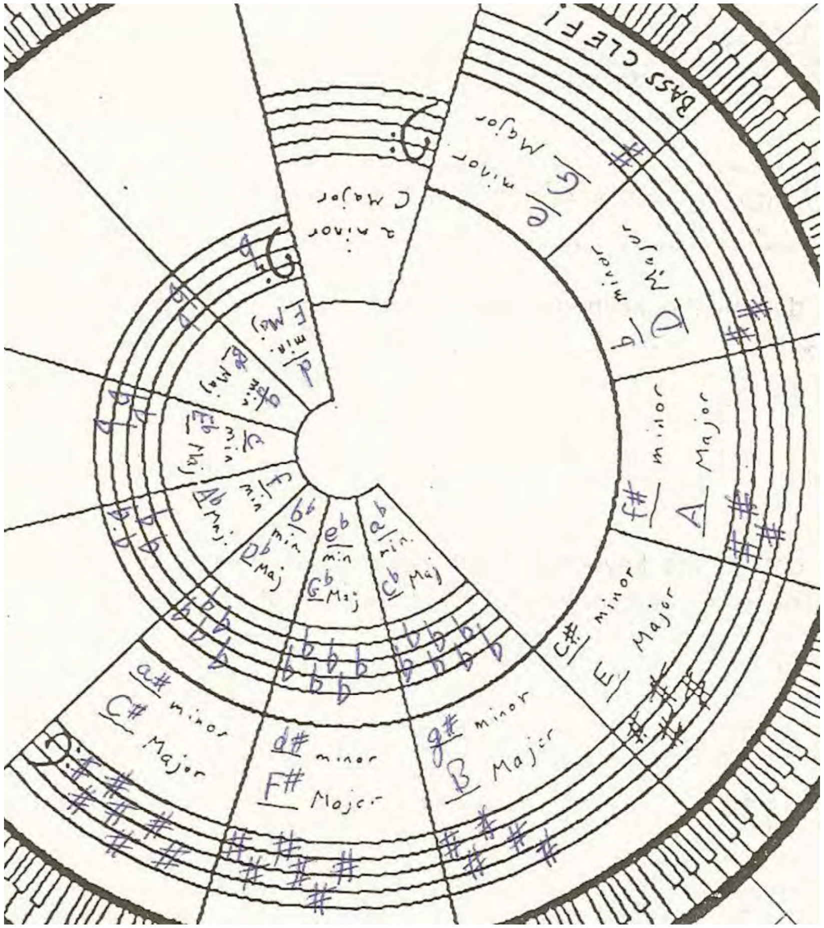
1.

Maj. key	F	F#	E♭	A	D	D♭	B♭
Min. key	d	d#	c	f#	b	b♭	g

2.



6.8



ANSWERS TO CHAPTER SEVEN
PATHWAYS TO HARMONY

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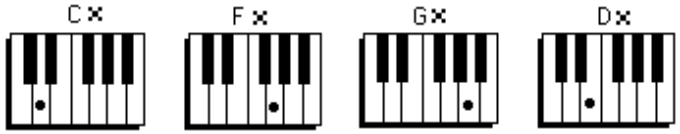
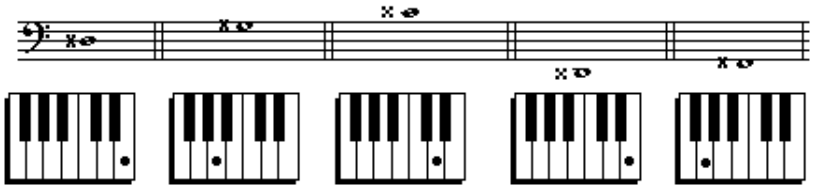
7.1

1.



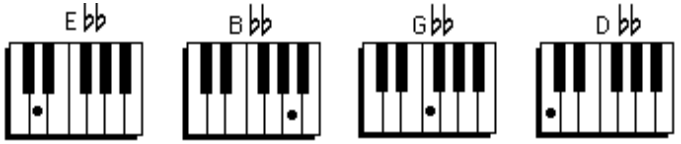
2.



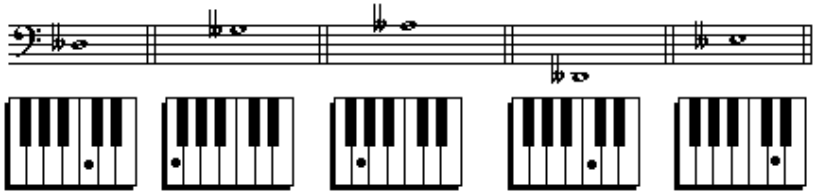
3. F**x** C**x** G**x** A**x** D**x**

7.2

1.



2.



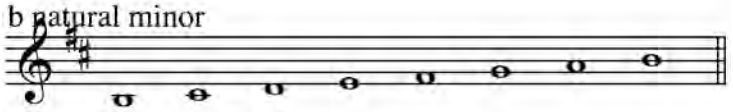
3. Az Ez Bz Gz Dz

7.3 B D B D C# E C# E C F# C F# B D G D G

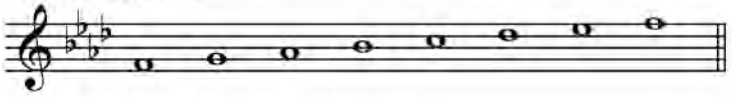
7.4

1.

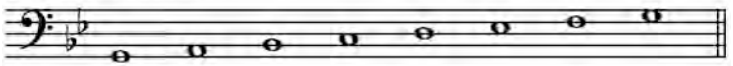
b natural minor



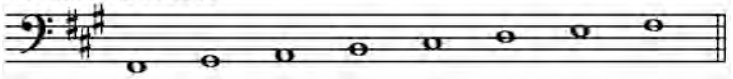
f natural minor



g natural minor

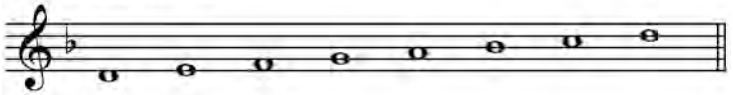


f# natural minor

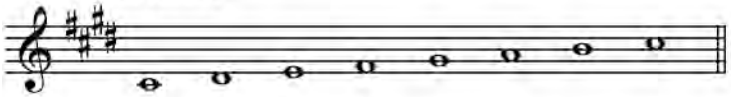


2.

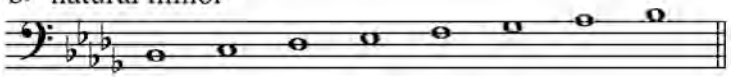
d natural minor



c# natural minor



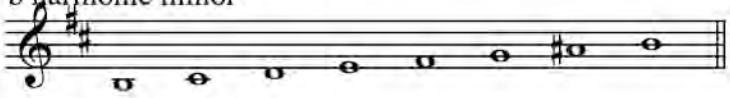
b♭ natural minor



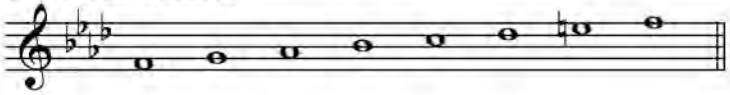
7.5

1.

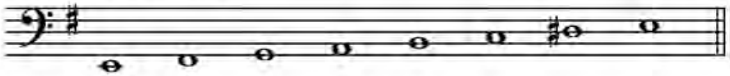
b harmonic minor



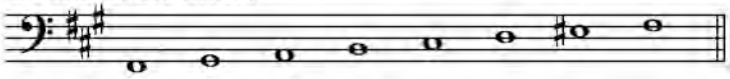
f harmonic minor



e harmonic minor

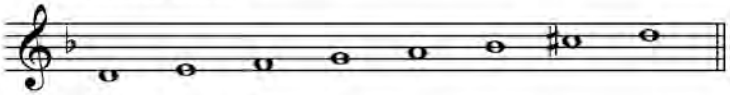


f# harmonic minor

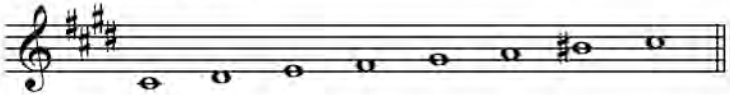


2.

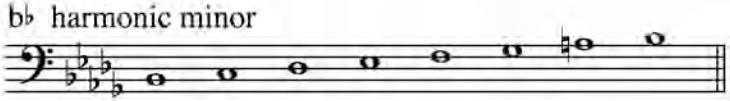
d harmonic minor



c# harmonic minor



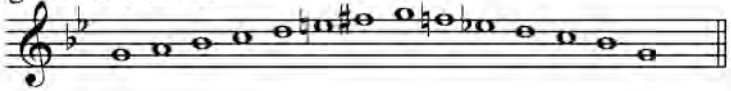
b♭ harmonic minor



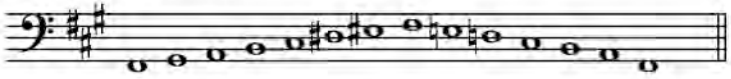
7.6

1.

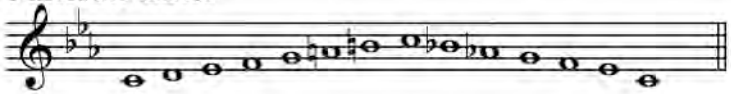
g melodic minor



f# melodic minor

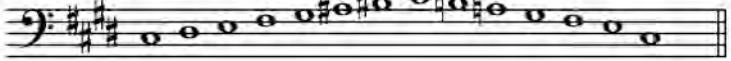


c melodic minor

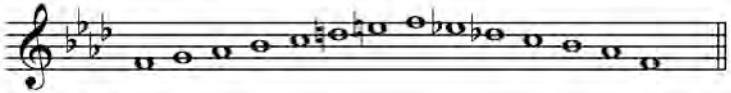


2.

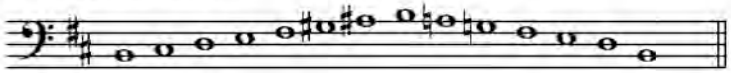
c# melodic minor



f melodic minor



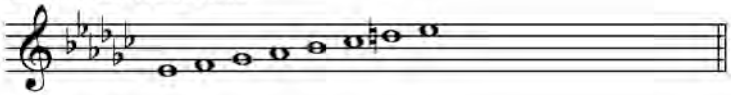
b melodic minor



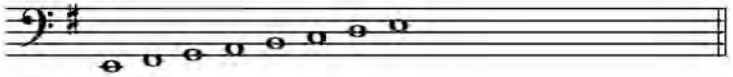
7.7

1.

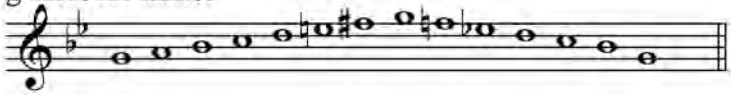
e♭ harmonic minor



e natural minor

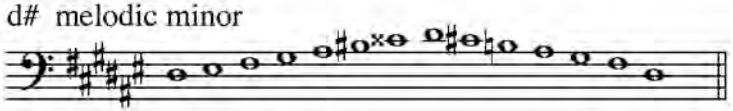


g melodic minor

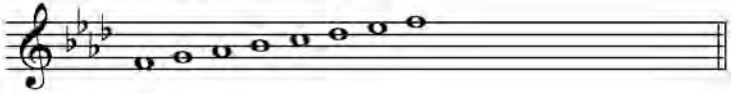


2.

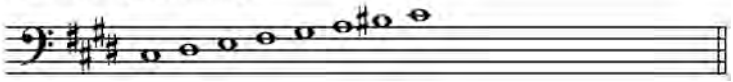
d# melodic minor



f natural minor



c# harmonic minor



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PATHWAYS TO HARMONY
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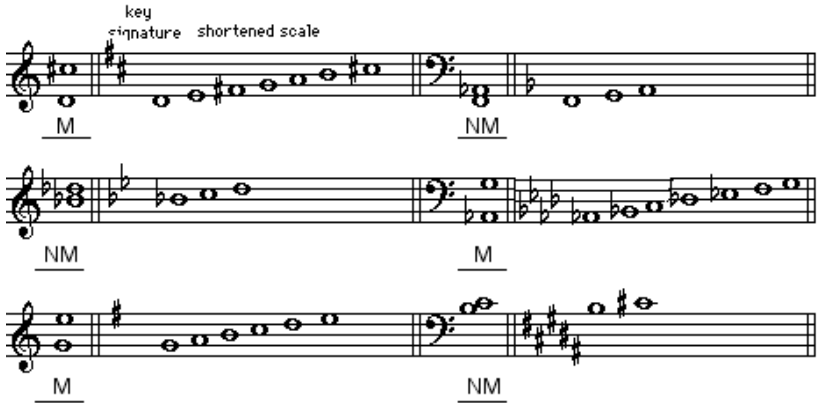
8.1

B	G	B	G		G	C	E	E
F	E	C	B		C	C	D	D
4th	3rd	7th	6th		5th	8ve	9th	2nd

8.2 See answer for 5.9

8.3 See answer for 5.8

8.4

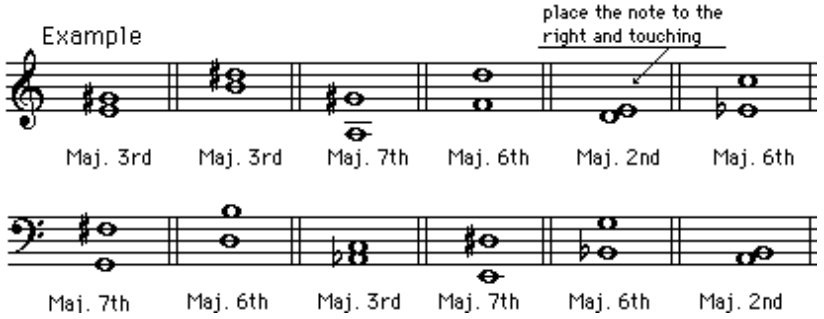


8.5

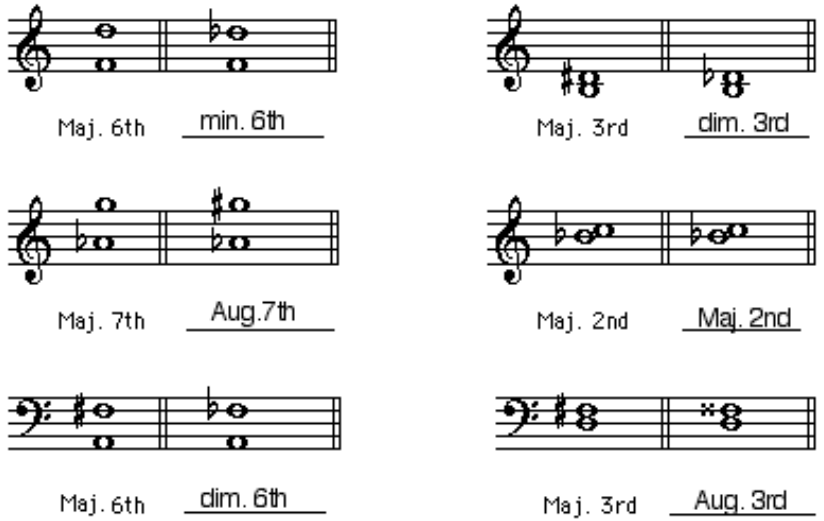
1.

NM	M	M	NM	NM	M
NM	NM	M	NM	NM	M

2.



8.6

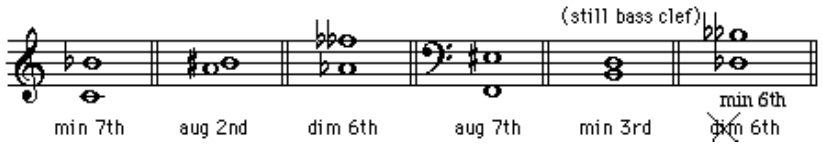


8.7

1.

min 3rd Maj 3rd Aug 6th Maj 7th min 2nd dim 2nd
Aug 3rd min 3rd dim 6th min 3rd min 3rd dim 3rd

2.



8.8

1.

Perf 5th Aug 4th dim 8ve perf 4th Aug 5th dim 5th

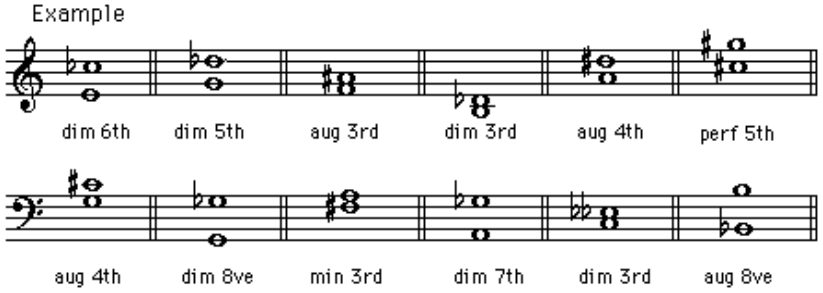
2.

Perf 8ve min 7th Maj 3rd dim 6th Perf 5th Maj 2nd
Aug 7th Perf 5th min 3rd dim 3rd Perf 8ve Aug 3rd

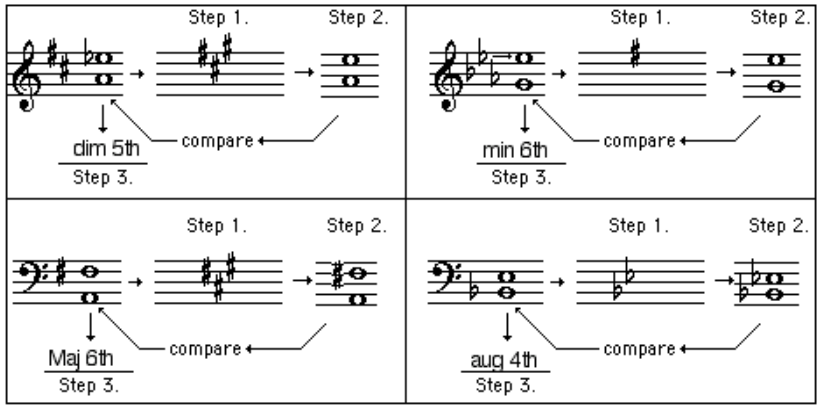
8.9

1. See 8.8 of workbook

2.



8.10



8.11

1.

m3rd M3rd M3rd M6th M3rd m6th m3rd

2.

M2nd m3rd P4th P5th m3rd M3rd P5th m6th M6th M6th

3.

m3rd M3rd P4th m3rd d5th m6th

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PATHWAYS TO HARMONY
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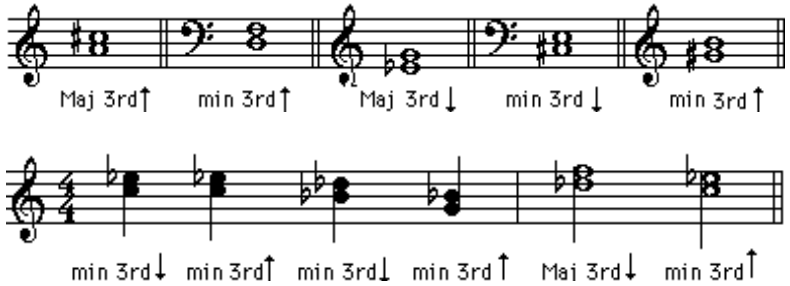
9.1

1. 3, 5, 4
2.

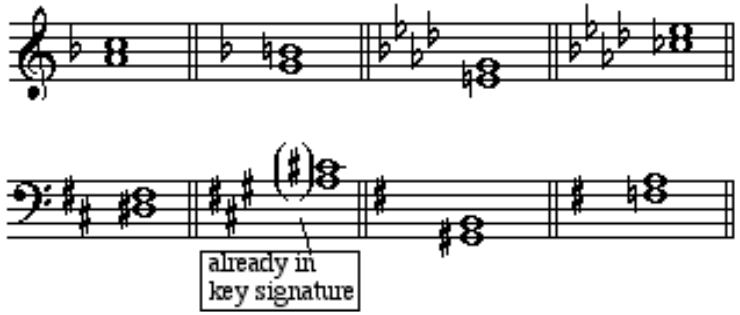
3. maj, min, min, min, maj
   min, maj, maj, min, min

9.2



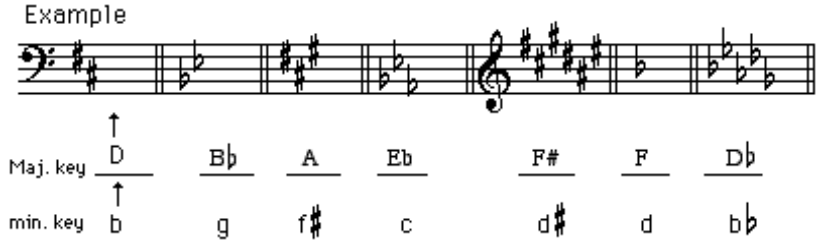
9.3

1. min, min, maj, min, min, maj
2.

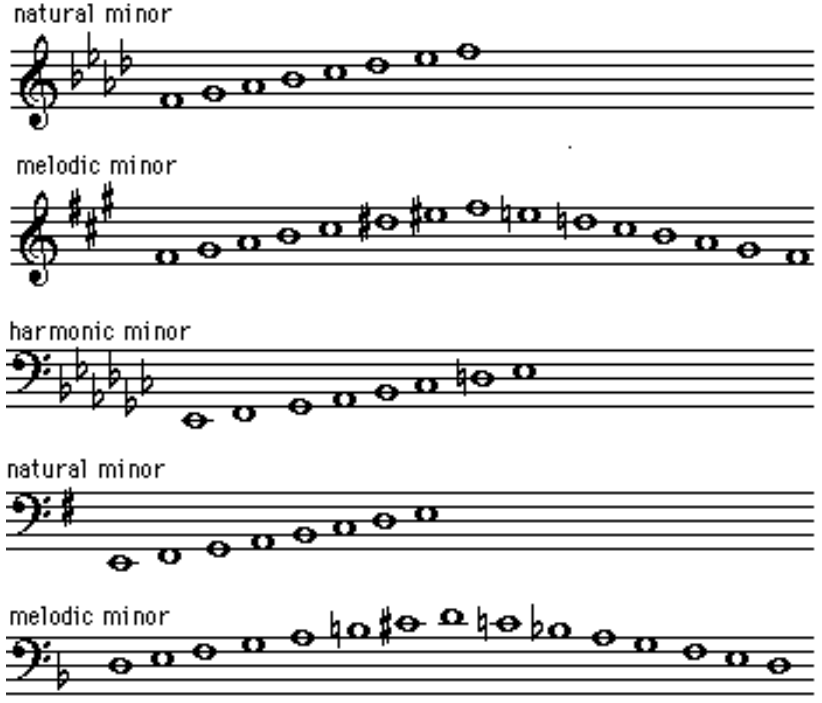


9.4

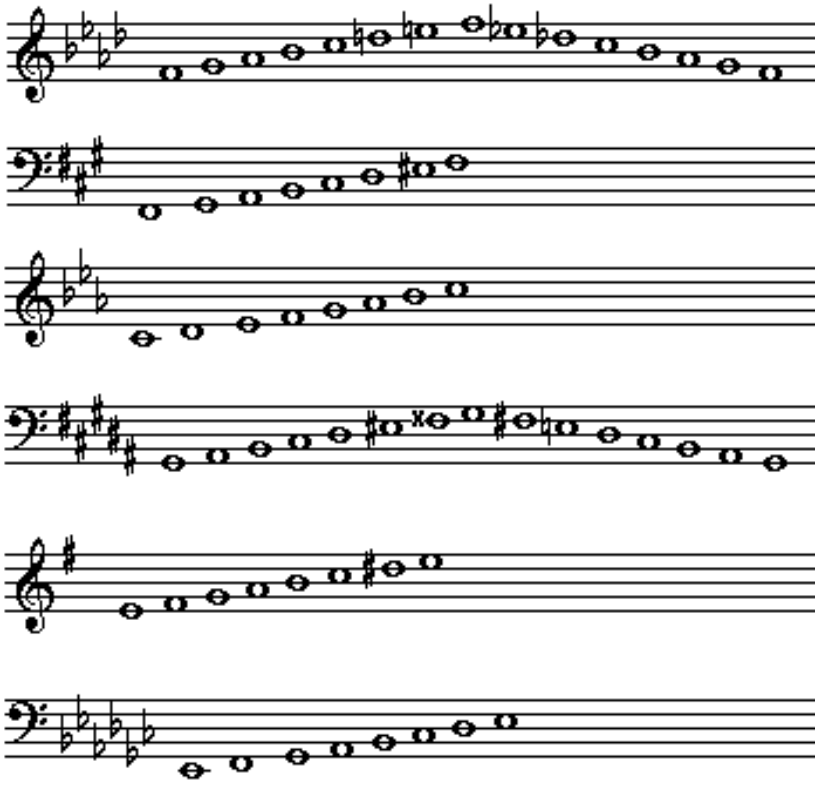
1. Ab, B, C, C#, Gb, G, E
   f, g#, a, a#, eb, e, c#
2.



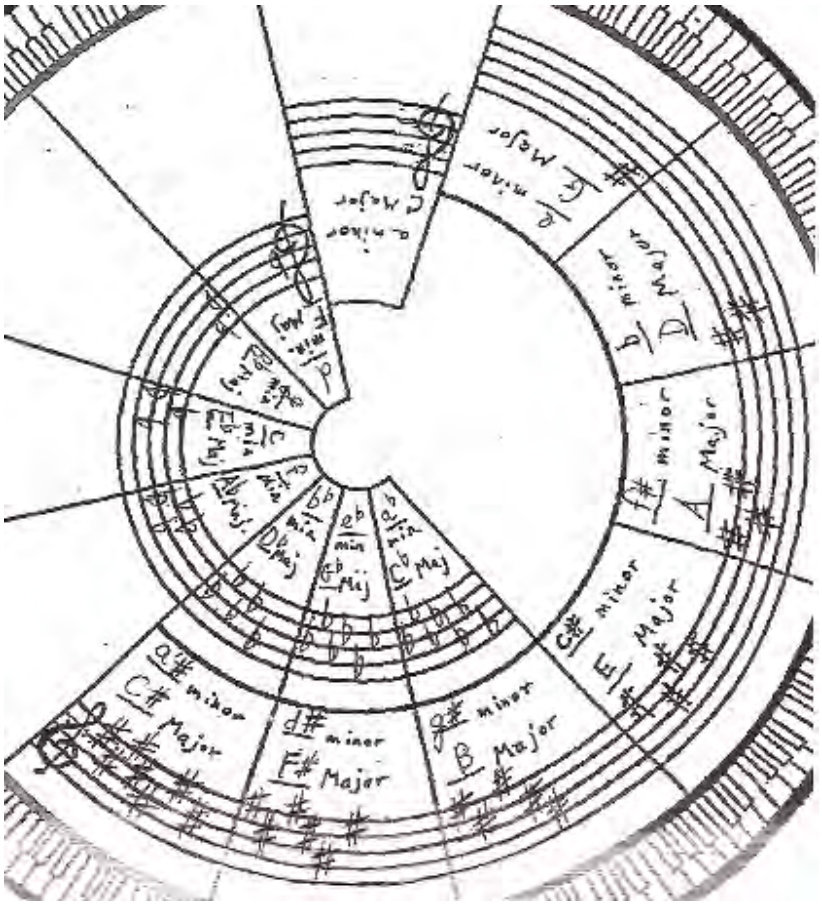
9.5



9.6



9.7


C Major
a minor
G Major
e minor
D Major
b minor
A Major
f# minor
E Major
c# minor
B Major
g# minor
F# Major
d# minor
C# Major
a# minor
F Major
d minor
Bb Major
g minor
Eb Major
c minor
Ab Major
f minor
Db Major
bb minor
Gb Major
eb minor
Cb Major
ab minor

ANSWERS TO CHAPTERS TEN AND TEN B
PATHWAYS TO HARMONY

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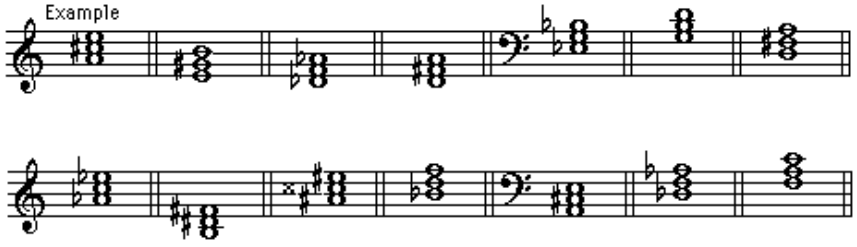
10.1

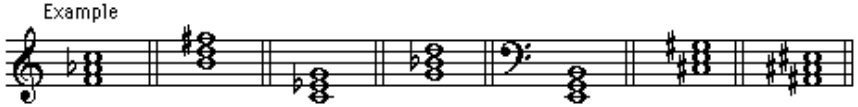
1.	maj	maj	min	min	maj	min	min
2.	min	min	maj	min	min	min	min
3.	maj	min	min	maj	maj	min	min

10.2

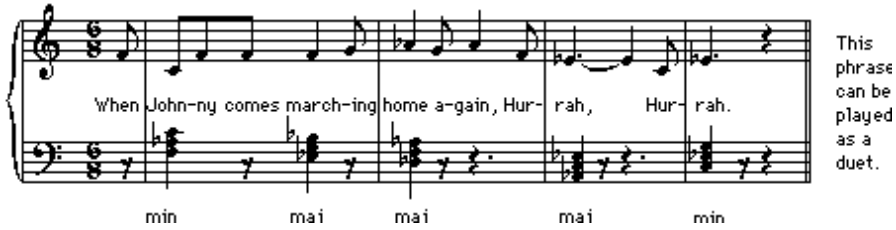
1.



2.



3.

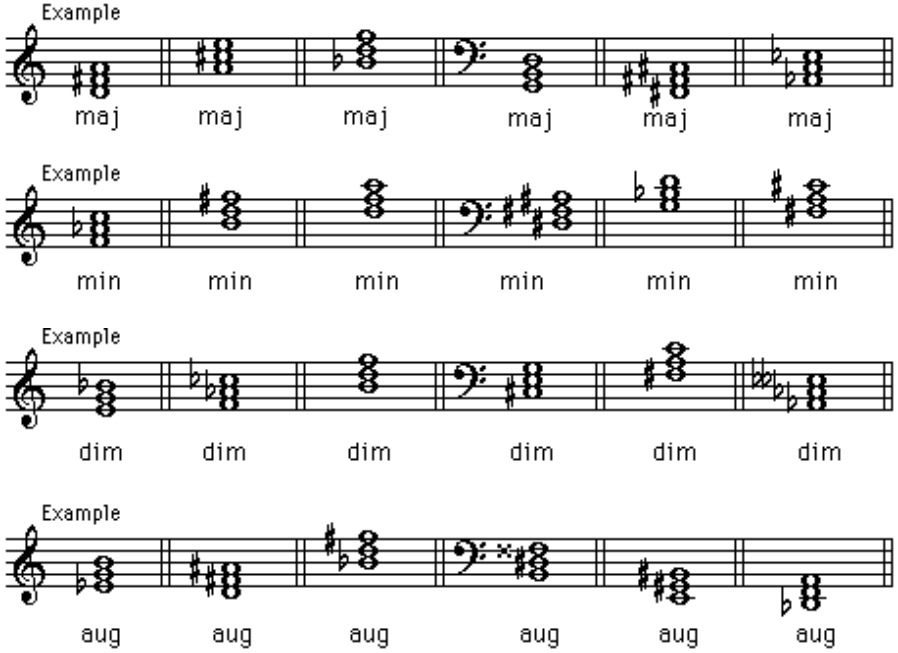


10.3

1.	Aug	dim	min	Maj	Maj	Aug
	min	min	Aug	dim	Maj	Min
2.	Aug	Maj	dim	min	Maj	min

10.4

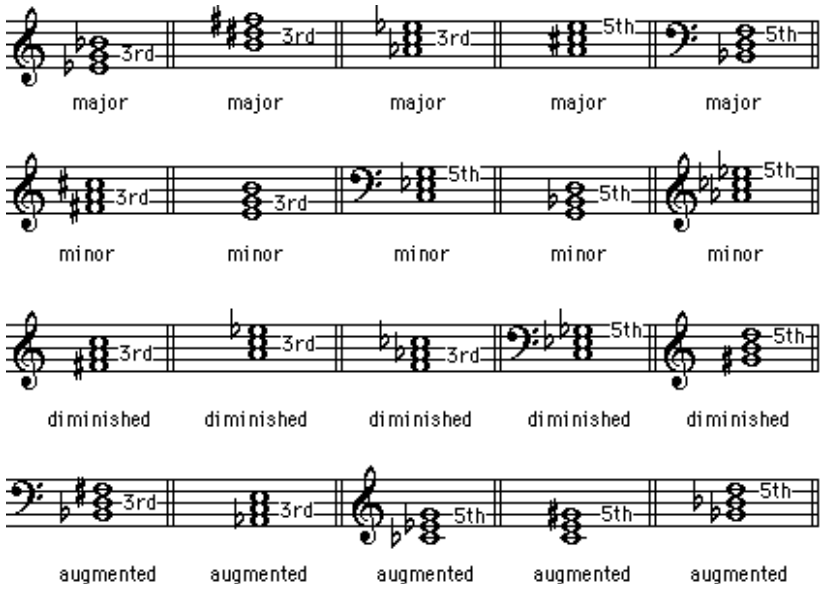
2.



10.5

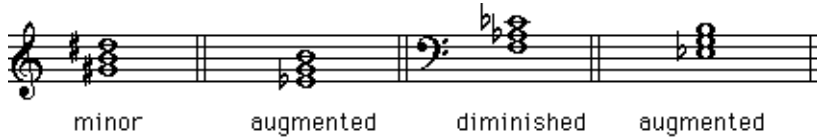
	Maj	min	Maj	Maj	dim	Maj
	Maj	dim	min	min		
	Aug	Maj	dim	min		

10.6

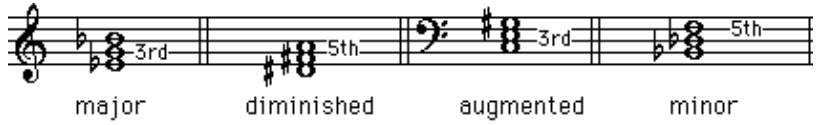


10.7

1. See 10.3 of workbook
2. dim Aug dim Maj
3.



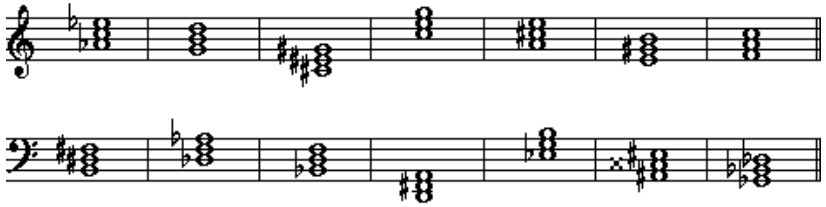
4.



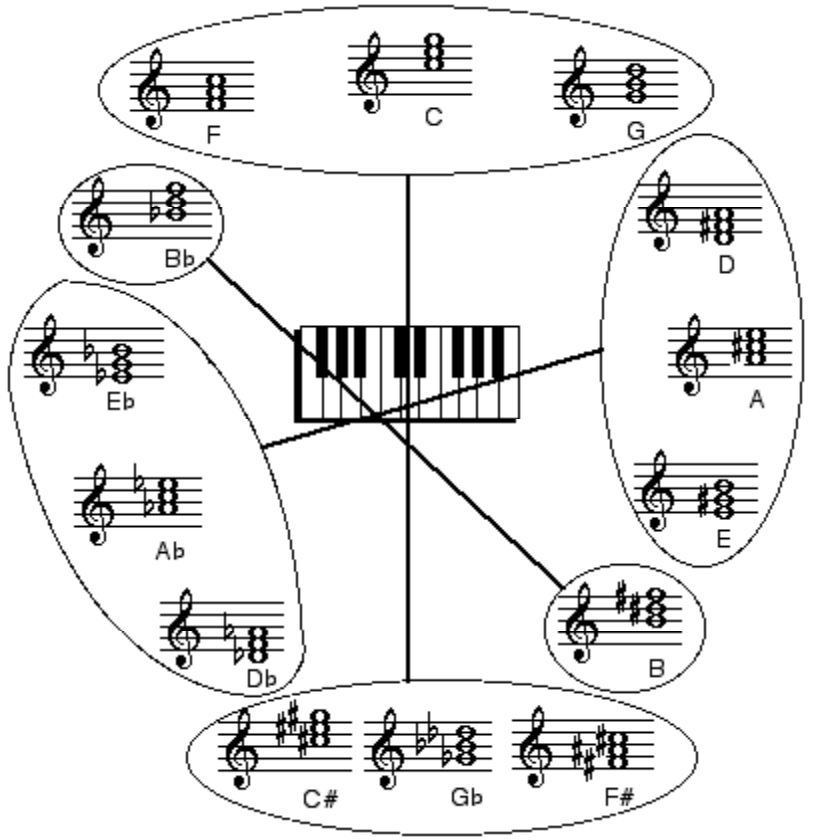
5. dim Aug dim min

CHAPTER 10B

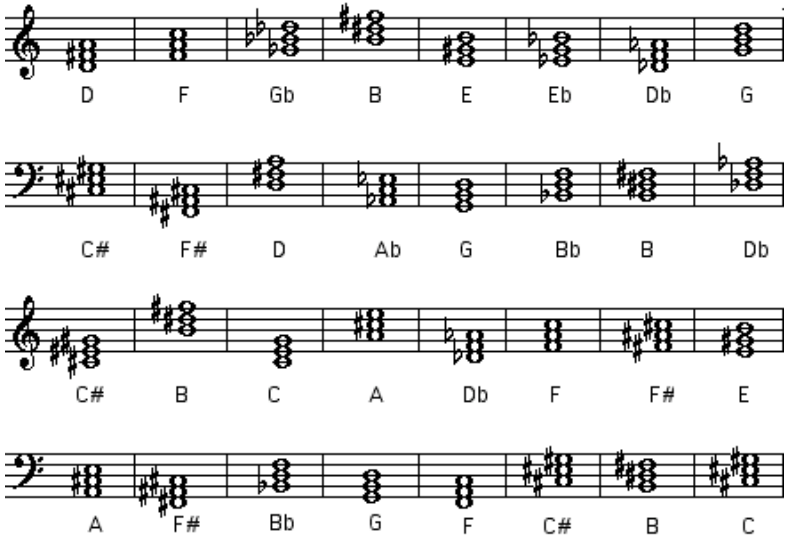
10B.1



10B.2 and 10B.3



10B.4

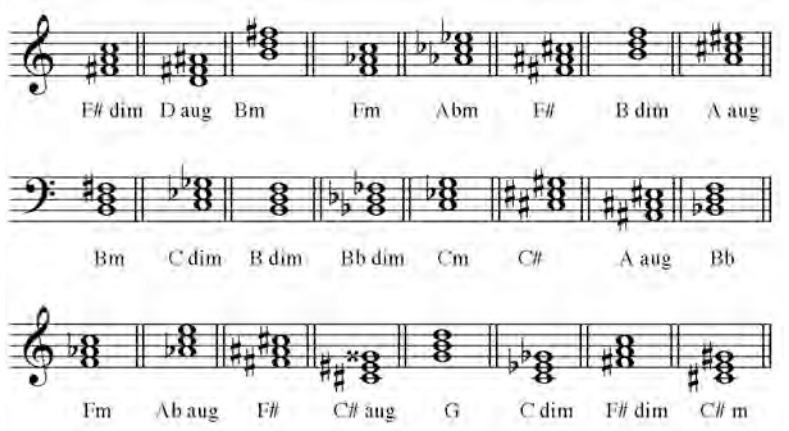


10B.5

1.

Aug	dim	Aug	Maj	min	min	Aug	min
Maj	dim	Aug	min	maj	Aug	dim	maj
dim	min	dim	aug	Maj	Aug	Maj	dim

2.



10B.6

1. See 10B.4 in workbook

2.

a. a fifth a half step higher
b. a third and fifth a half step lower
c. a third a half step lower

3.

	type of triad			
	major	minor	diminished	augmented
top 3rd	minor	major	minor	major
bottom 3rd	major	minor	minor	major

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PATHWAYS TO HARMONY
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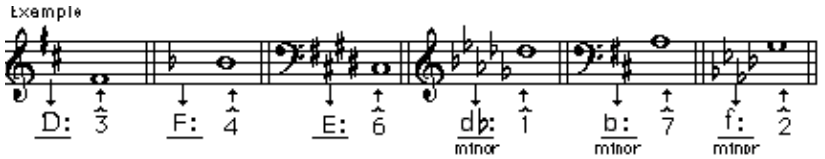
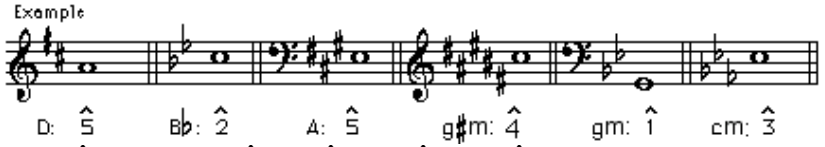
11.1
$\hat{3}$ $\hat{2}$ $\hat{1}$ $\hat{5}$ $\hat{6}$ $\hat{7}$ $\hat{1}$ Bass clef: $\hat{1}$ $\hat{3}$ $\hat{5}$ $\hat{4}$ $\hat{2}$ $\hat{7}$ $\hat{1}$
$\hat{1}$ $\hat{5}$ $\hat{3}$ $\hat{1}$ $\hat{2}$ $\hat{4}$ $\hat{3}$ $\hat{2}$ $\hat{7}$ $\hat{1}$
$\hat{1}$ $\hat{3}$ $\hat{2}$ $\hat{4}$ $\hat{5}$ $\hat{5}$ $\hat{1}$

11.2
1.



2.



3. B: $\hat{7}$ (ex.), Eb: $\hat{4}$, D: $\hat{7}$, fm: $\hat{5}$, em: $\hat{6}$

11.3

1. tonic	7. subdominant
2. dominant	8. mediant
3. submediant	9. supertonic
4. leading tone	10. leading tone
5. tonic	11. tonic
6. dominant	

11.4
1. tonic, supertonic (ex.), mediant, subdominant, submediant, dominant

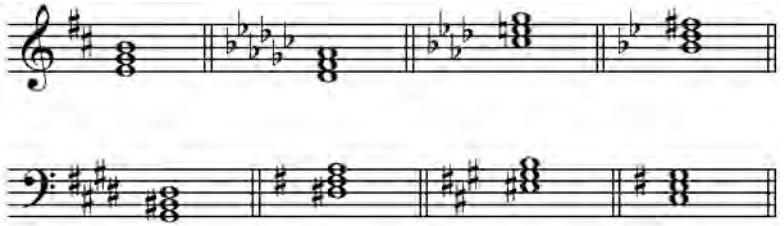
2. Bb: $\hat{5}$ maj., D: $\hat{5}$ maj., B: $\hat{7}$ dim.
em: $\hat{7}$ dim., cm: $\hat{7}$ dim., c#m: $\hat{5}$ maj.

11.5
I ii iii IV V vi vii°
The sequence of chords is the same for ALL major keys.

11.6
i ii° III+ iv V VI vii°
The sequence of chords is the same for all minor keys as well .

11.7
A: vii° (ex.), D: iii, Bb: I, F: vi
G: vii°, B: vii°, Bb: IV, G: IV, Eb: vii°
Minor keys:
bm: V, em: ii°, cm: vii°, gm: VI, f#m: III+
dm: iv, fm: i, bm: III+, gm: V, c#m: iv

11.8
1.



2.
dm: III+, em: VI, fm: iv, f#m: ii°, cm: V(♮), bm: vii°
mediant submediant subdominant supertonic dominant leading tone

3. Heart and Soul!
C: I vi IV V

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PATHWAYS TO HARMONY
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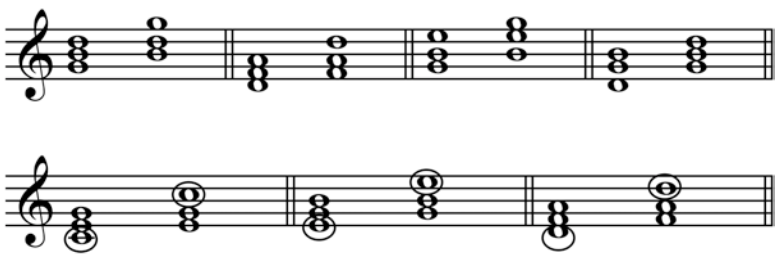
12.1



12.2

1.

root position	1st inversion	2nd inversion	1st inversion
$\frac{5}{3}$	$\frac{6}{3}$	$\frac{6}{4}$	$\frac{6}{3}$

2.

Root position	1st inversion	root position	2nd inversion
root	third	root	fifth

3.

$\frac{5}{3}\ \frac{5}{3}\ |\frac{6}{3}\quad \frac{5}{3}\ \frac{6}{3}\ |\frac{6}{4}\quad \frac{5}{3}\ \frac{6}{3}|\ \frac{6}{4}\ \frac{5}{3}\ \frac{6}{3}\ \frac{6}{4}\ \frac{5}{3}\ \frac{6}{3}\ |\frac{6}{4}\ \|$

12.3

E, B, A, G, C
F, C, E, G, D

12.4

See Reference Sheet after 12.2 in Workbook

12.5

1.

1st Inv	6	1st Inv	6	2nd Inv	$\frac{6}{4}$	Root Pos	
F	3rd	A	3rd	B	5th	A	Root

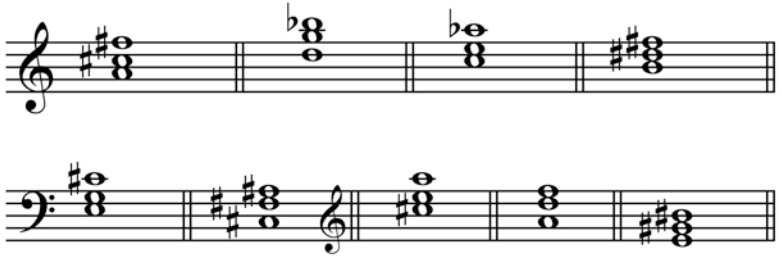
Root Pos		1st Inv	6	2nd Inv	$\frac{6}{4}$	1st Inv	6
E	Root	B	3rd	D	5th	A	3rd

2.

6 $\frac{6}{4}$ 6 6 6 [blank] [not a triad] $\frac{6}{4}$

1. mediant
2. leading tone
3. tonic
4. tonic
5. mediant
6. subdominant

12.6



12.7

1.

2nd inv 5th $\frac{6}{4}$, 1st inv 3rd 6 , 2nd inv 5th $\frac{6}{4}$, root root [blank], 1st inv 3rd 6

2.

G: ii, Eb: IV, D: V, F: IV, E: vii°

gm: vii°, fm: iv, f#m: i, em: vii°, dm: III+5#

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13.1

1.

F: vii° $\frac{6}{4}$ (ex.) , Eb: V , G: IV $\frac{6}{4}$ Bb: iii 6 , G: iii $\frac{6}{4}$
E: iii , F: I 6 , Ab: IV 6 , G: V $\frac{6}{4}$, Bb: vii°6

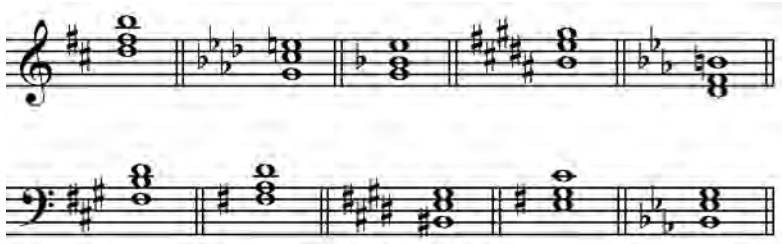
2.

bass clef phrase: E: I6 | I$\frac{6}{4}$ IV6 iii$\frac{6}{4}$ vii° | iii6 V I6 ||

3.

gm: V $\frac{6}{4}$, em: III^{+}, Em: iv $\frac{6}{4}$, em: i
f#m: III^{+} $\frac{6}{4}$, f#m: vii° , f#m: V 6, bm: III^{+} 6
cm: ii° , cm: vii° 6 , dm: VI 6, dm: ii°

13.2



13.3

A $\frac{6}{4}$, C , D 6 , E $\frac{6}{4}$
D $\frac{6}{4}$, C , A 6 , F# $\frac{6}{4}$

13.4

1. In major

G: iii6 , Db: iii , D: IV$\frac{6}{4}$, Bb: V6

2. In minor

fm: V$\frac{6}{4}$, bm: iv , dm: iv $\frac{6}{4}$, gm: ii°6 , f#m: iv

3. Musical phrase, “Oh, beautiful...”

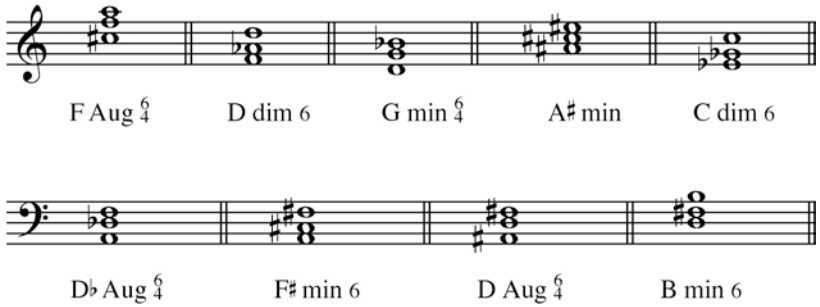
G: I | I I6 I$\frac{6}{4}$ I | V6 V V ||

13.5

1.

Eb Aug 6, F Maj $\frac{6}{4}$, D min , F# min 6
C Maj $\frac{6}{4}$, A dim , C min 6, B min 6

2.



ANSWERS TO CHAPTER FOURTEEN
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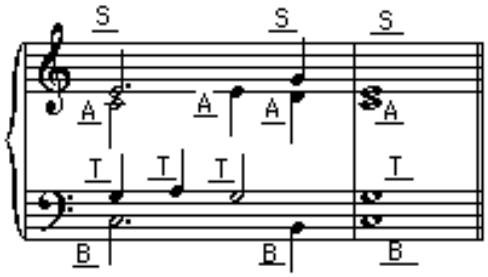
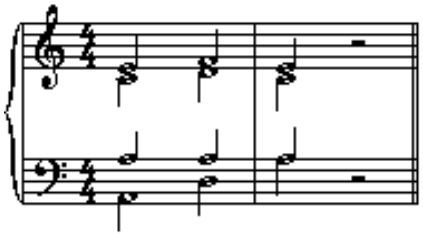
14.1

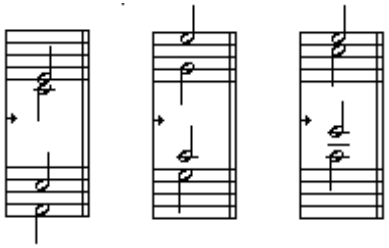


14.2

Alto, correct, tenor



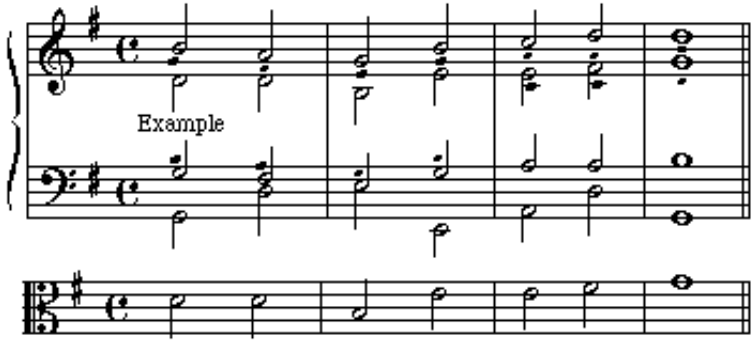
14.3



(Ex: third), fifth, root, root, fifth, third

$\frac{5}{3}$ fifth, $\frac{6}{4}$ root, $\frac{6}{3}$ fifth, $\frac{5}{3}$ third

14.4



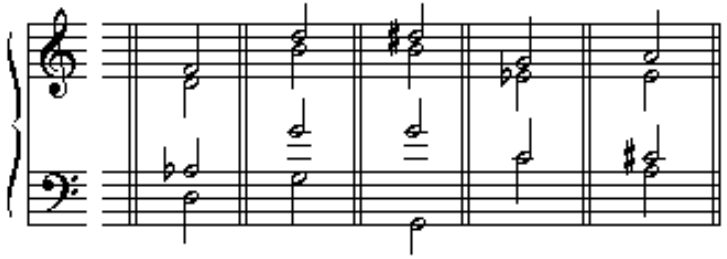
14.5

1. (Ex: close), open, close, open, close, close

2. F: I $\frac{5}{3}$, Bb: IV $\frac{6}{3}$, G: vii° $\frac{6}{4}$, A: iii $\frac{5}{3}$, Eb: I $\frac{5}{3}$

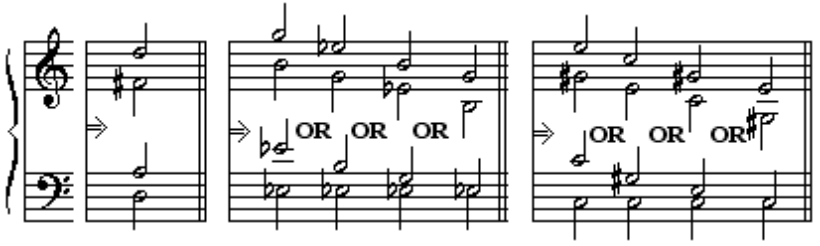
   fifth third fifth root root

3.



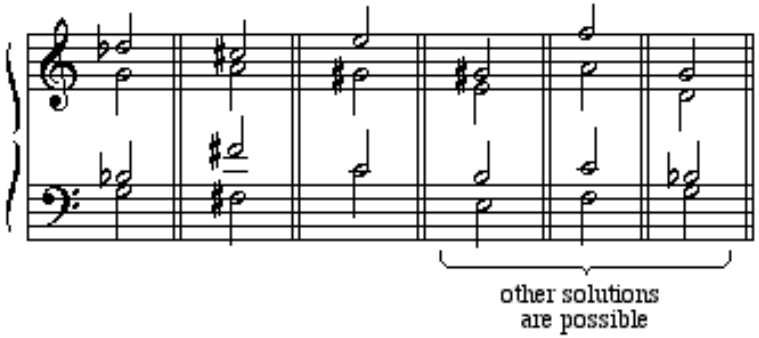
14.6

1.

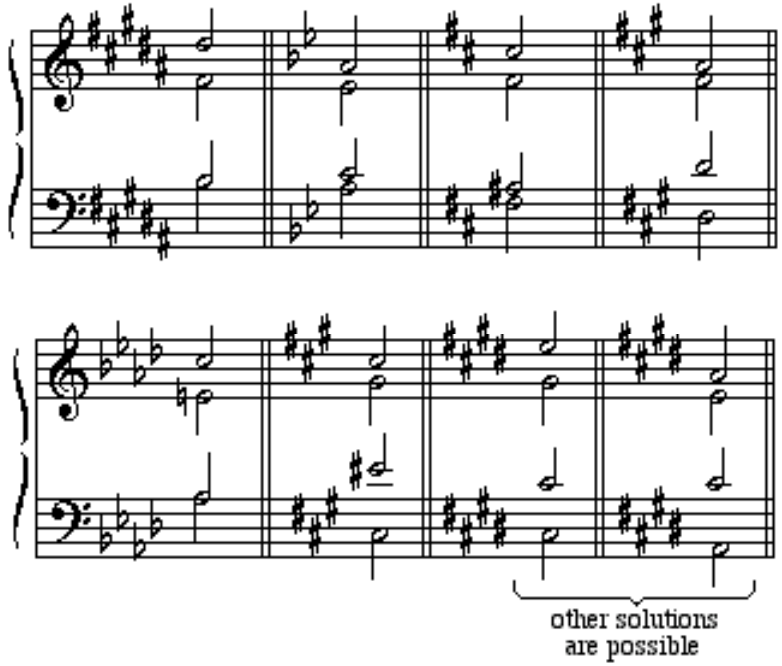


14.6 (continued)

2.



3.



14.7

A, F, B, B

D, G, E and G, G and B, G

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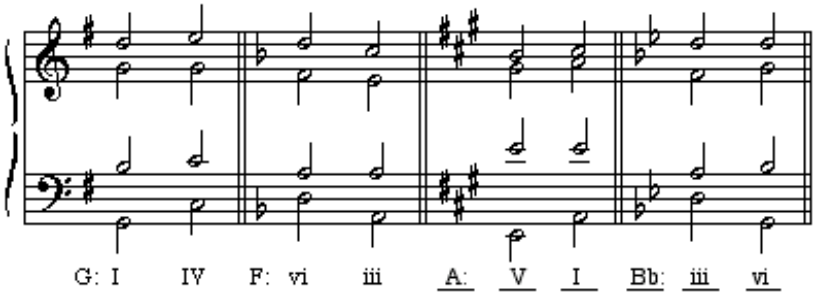
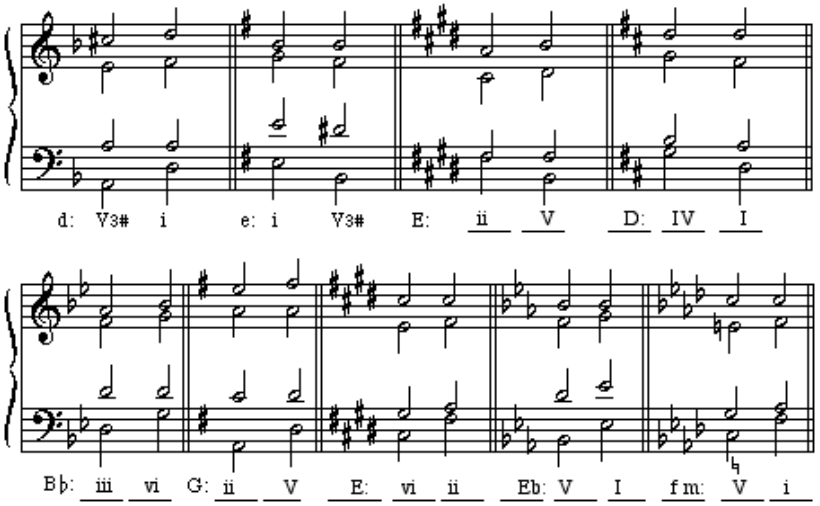
15.1

c min: i i V i i ii iv V

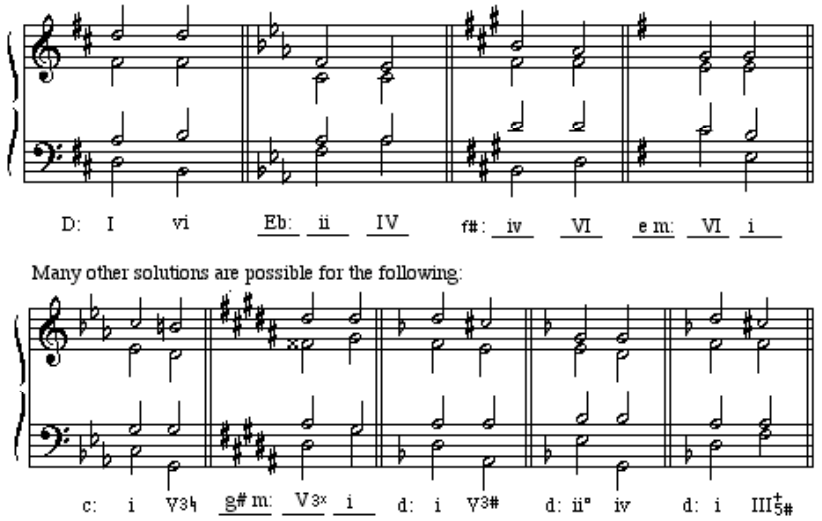
15.2



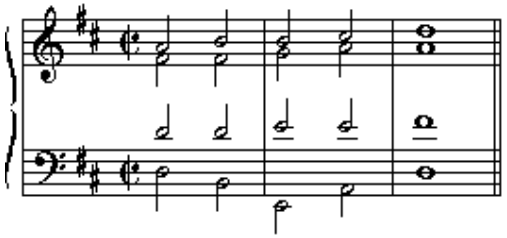
15.3



15.4



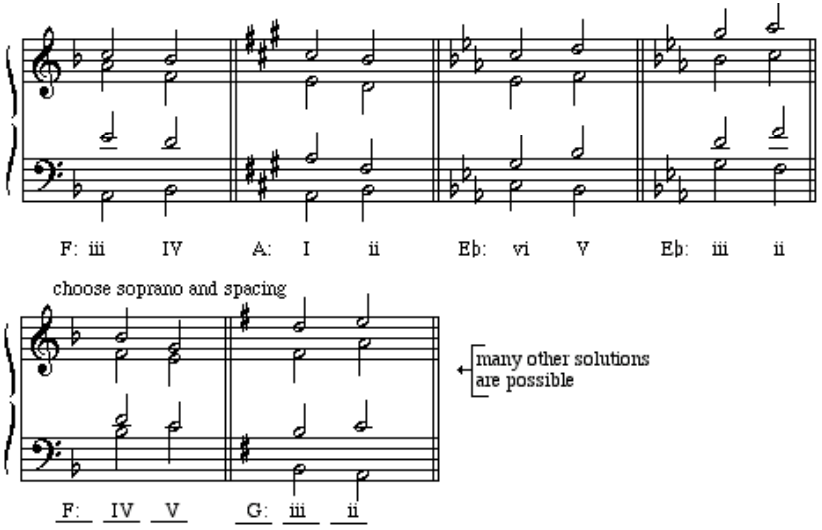
15.5



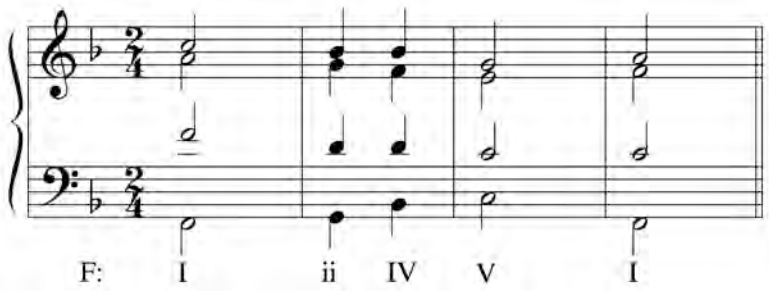
15.6

contrary, oblique, similar, oblique, parallel (or similar)

15.7


F: iii IV
A: I ii
E♭: vi V
E♭: iii ii
choose soprano and spacing
many other solutions
are possible
F: IV V
G: iii ii

15.8


F: I ii IV V I

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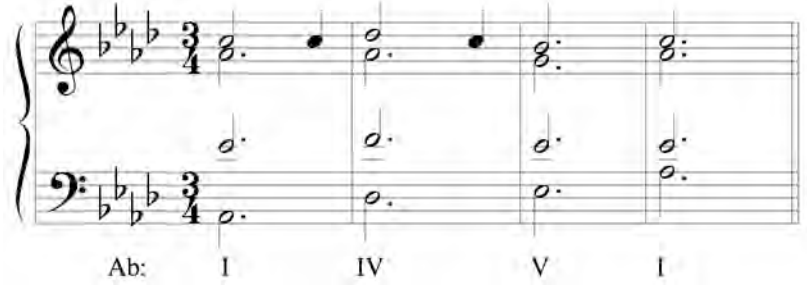
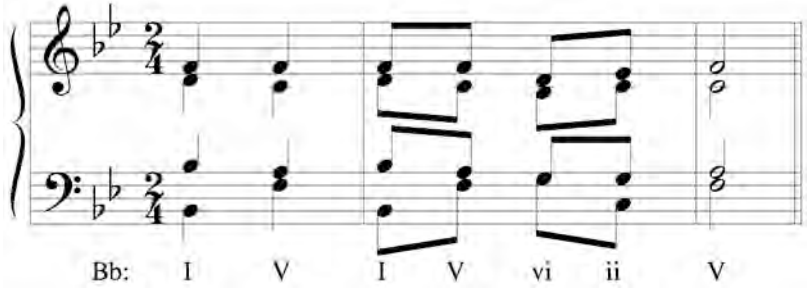
16.1
CTS, CTS, CTS, CTS, CMN

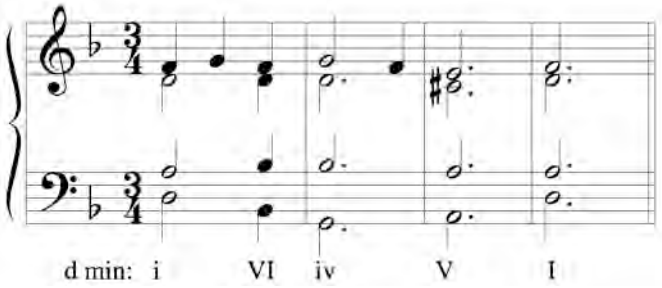
16.2
CTS, CMN, CTS, CTS, CMN, CMN

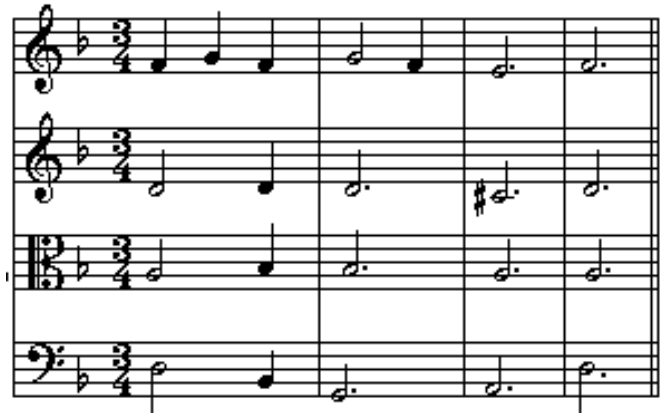
16.3



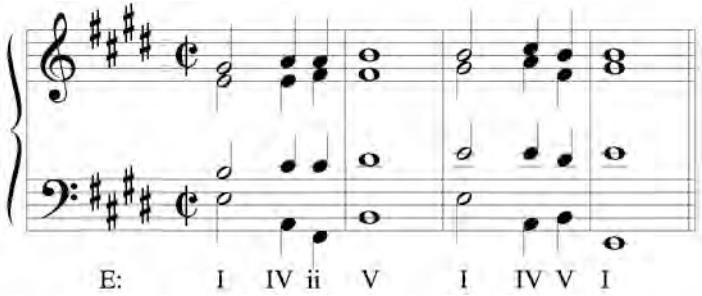


16.4



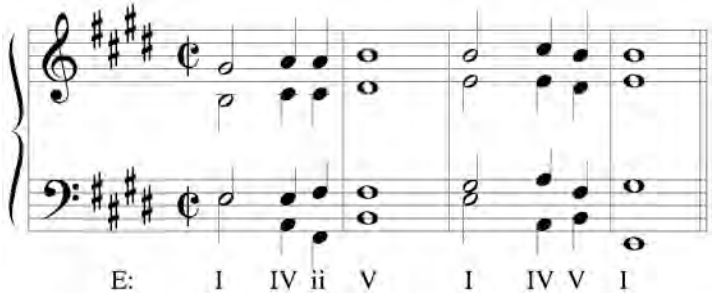


16.5
Two possible solutions only:
Solution 1



16.5

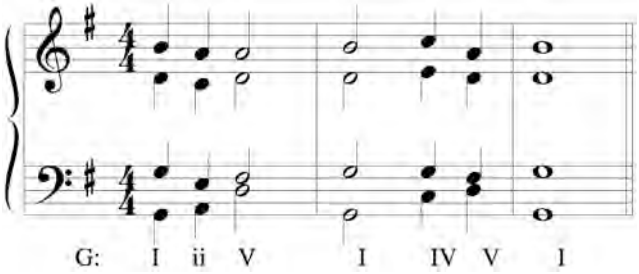
Solution 2



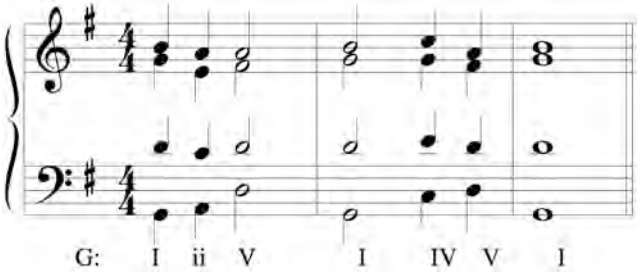
16.6

Two solutions are shown for each phrase . Others are possible.

Phrase 1, solution 1

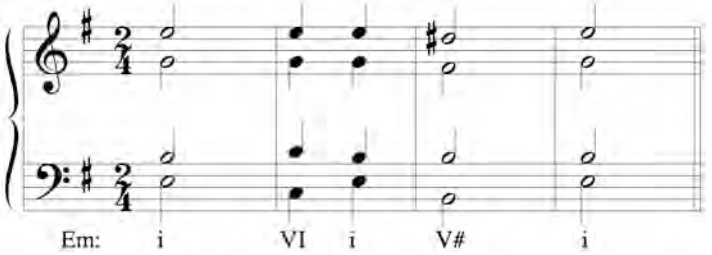


Phrase 1, solution 2

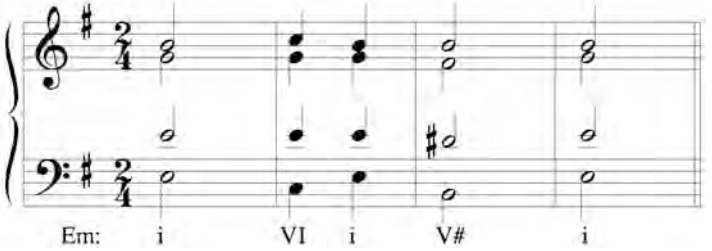


16.6 (continued)

Phrase 2, solution 1



Phrase 2, solution 2



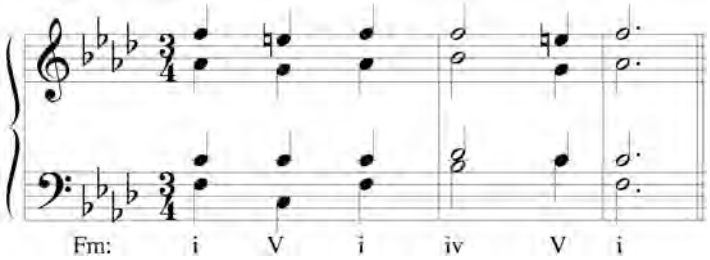
16.7

1. two and three
2. tenor and alto
3. one
4. bass and tenor

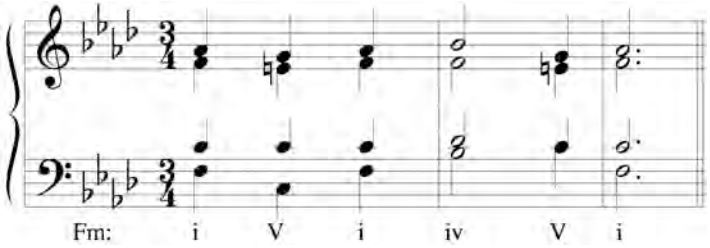
16.8

Two solutions are shown for each phrase . Others are possible.

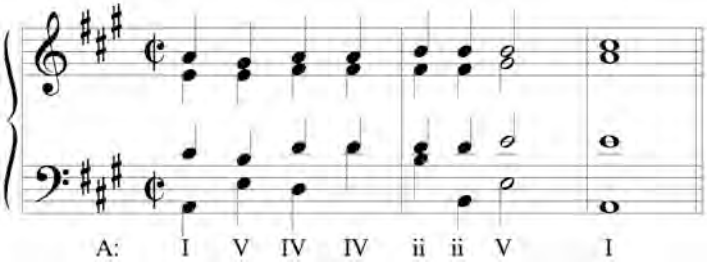
Phrase 1, solution 1



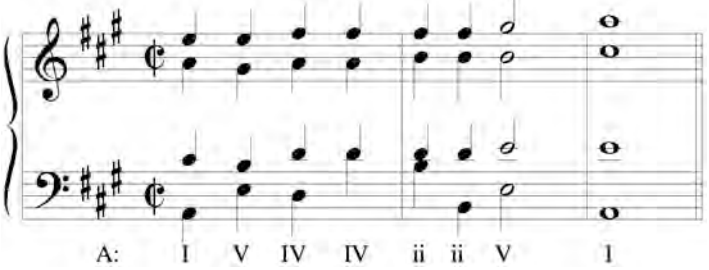
Phrase 1, solution 2



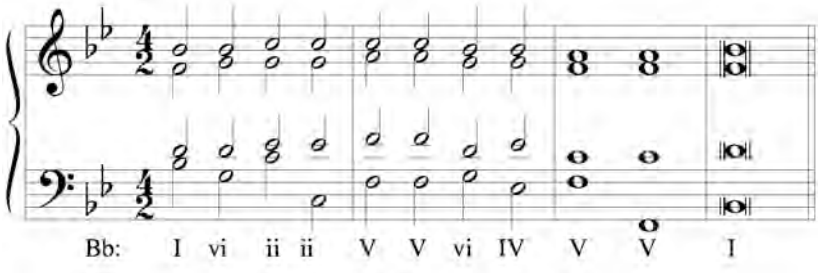
Phrase 2, solution 1



Phrase 2, solution 2

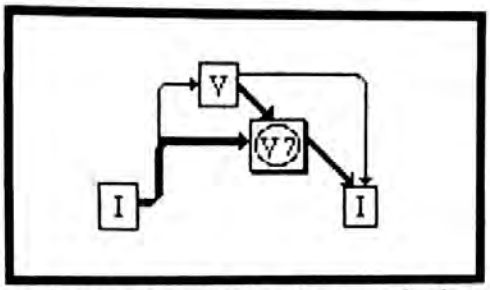


16.9



1	1	tonic
	2	submediant
	3	supertonic
	4	supertonic
2	1	dominant
	2	dominant
	3	submediant
	4	subdominant
3	1	dominant
	3	dominant
4	1	tonic

Chapter 19 The Dominant Seventh Chord, V7

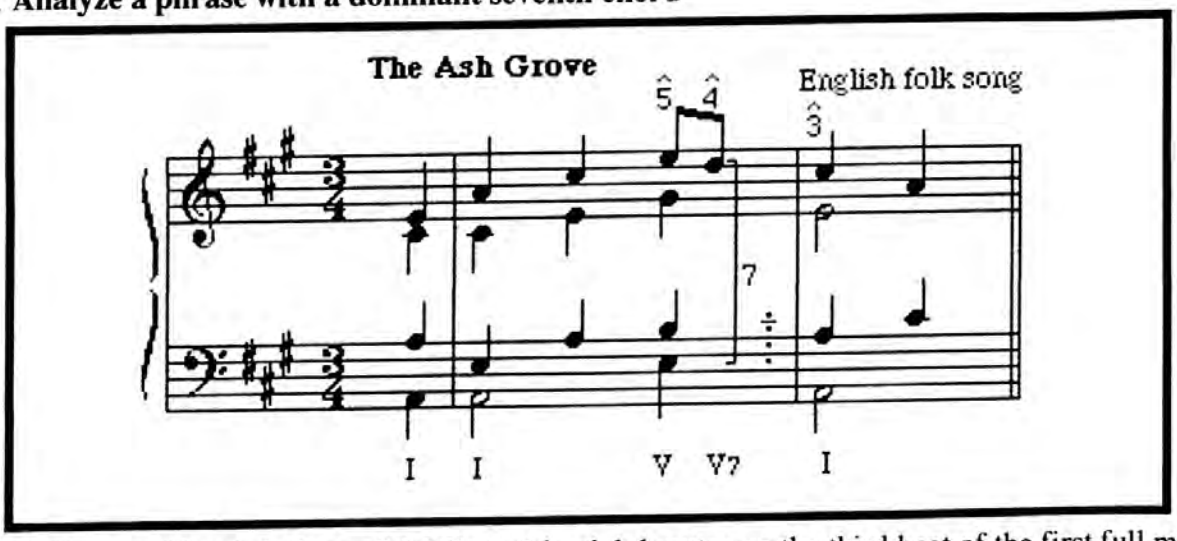


In the above chart, a V7, or dominant seventh chord, expands the chart of the fundamental harmonic progression which appeared on worksheet 17.5. This new chart shows that V7 follows V or I, but does not usually precede V. Highlighted arrows represent the new voice leading for V7.

In this chapter you will:

1. Analyze a phrase with a dominant seventh chord
2. Identify and write dominant seventh chords
3. Write dominant seventh chords in a key
4. Write V7 chords in four voices
5. Approach V7 by V and mark tendency tones
6. Resolve complete V7's to incomplete I's
7. Resolve incomplete V7's to complete I's
8. Resolve complete V7's to complete I's
9. Review resolving V7 chords
10. Approach V7 from I

19.1 Analyze a phrase with a dominant seventh chord



In the folk song "The Ash Grove," $\hat{5}$ falls to $\hat{4}$ in eighth notes on the third beat of the first full measure. In the above harmonization, $\hat{4}$ forms the interval of a seventh (plus and octave) with the bass of V. In this example the passing tone $\hat{4}$ expands or elaborates V.

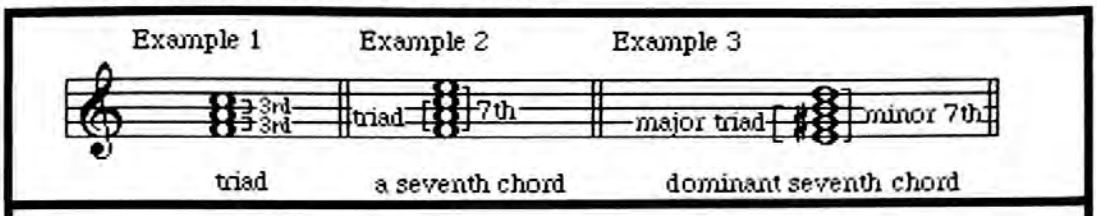
The brief chord which includes $\hat{4}$ on the last half of beat three is called a V7 or dominant seventh chord. See its chord tones at the end of the measure. In this chapter you will learn the voice leading for approaching and leaving this chord, and in the next chapter you will use it in harmonizing whole phrases of music.

---

1. A seventh above the dominant is what scale degree? $\hat{4}$

2. The chord tones of V7 chords correspond to which scale degrees? $\hat{5}\ \hat{7}\ \hat{2}\ \hat{4}$

19.2 Identify and write dominant seventh chords



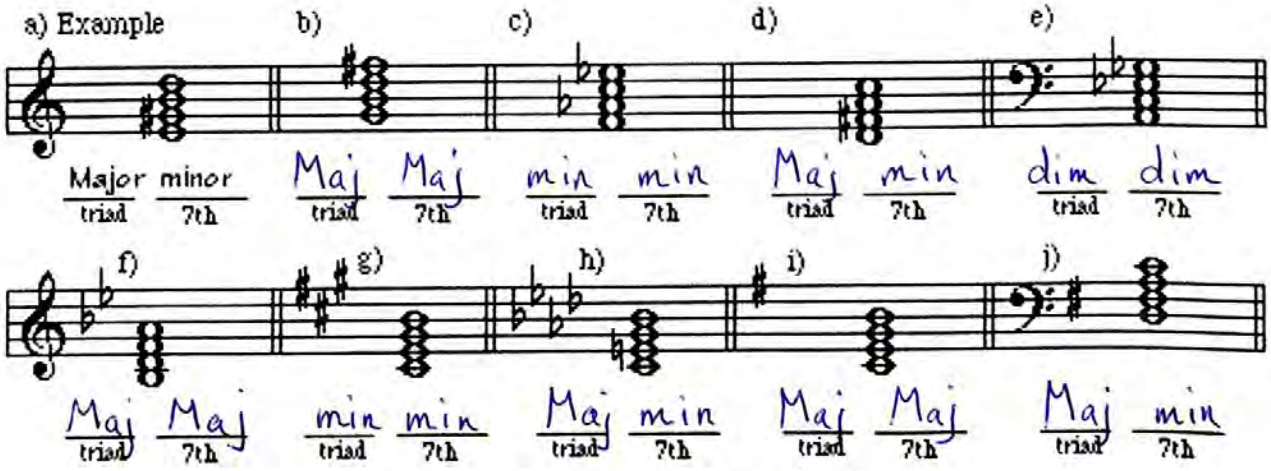
	type of triad			
	major	minor	diminished	augmented
top 3rd	minor	major	minor	major
bottom 3rd	major	minor	minor	major

•Recall from Chapter 10 that triads are chords with three chord tones separated by thirds. See example 1. Triads are named according to the chart at the bottom of the box above.
•Seventh chords have four, instead of three, chord tones separated by thirds . The name "seventh chord" comes from the interval of a seventh between the root and the top note. See example 2.
•You can distinguish various kinds of seventh chords by identifying the triad on the bottom as major, minor, diminished or augmented, and by identifying seventh interval as major, minor or diminished.
•One way to identify intervals of a seventh is by counting half steps down from the root to the note an octave below the seventh. An octave below a major seventh is one half step down from the root, a minor seventh is two half steps down and a diminished seventh is three half steps down.

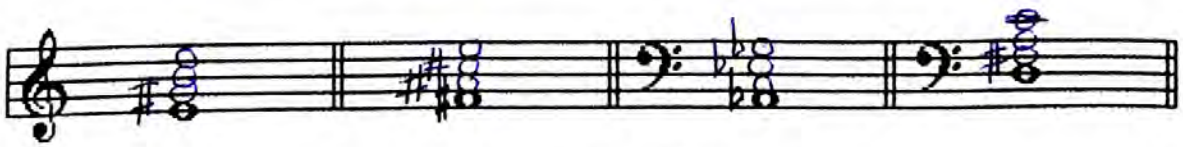
•A dominant seventh chord has a major triad and a minor seventh. See Example 3.

---

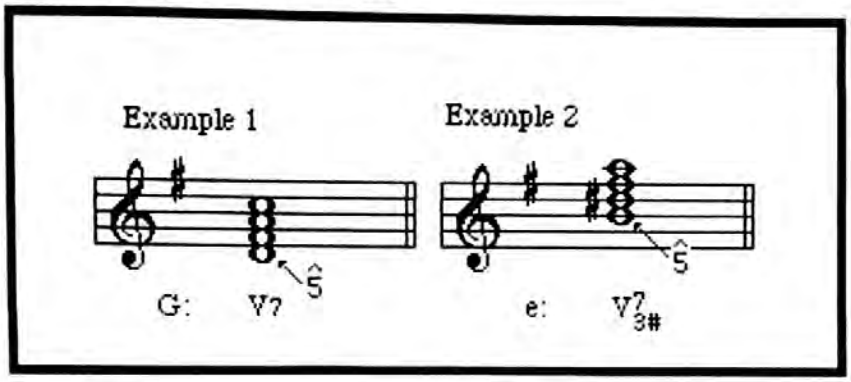
1. IDENTIFY the triads and the seventh intervals in these seventh chords:



2. Which of the above seventh chords are dominant sevenths? d, h, j
3. WRITE dominant seventh chords above the following roots. Do not use key signatures.



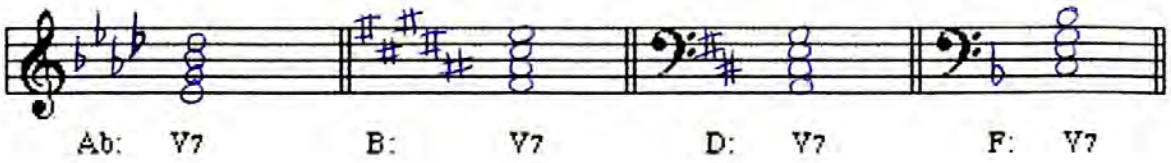
19.3 Write dominant seventh chords in a key



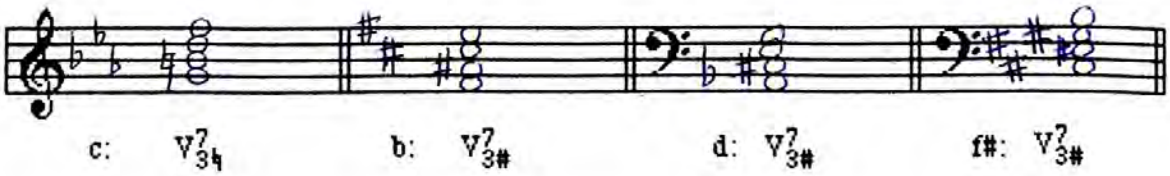
- The root of a dominant seventh chord is usually 5̂, as implied by the word "dominant" in the name.
- If the key is major and the root is 5̂, no accidentals are needed to write dominant seventh chords. See example 1.
- If the key is minor and the root is 5̂, the third of dominant seventh chords must be raised a half-step. See example 2. Recall that these workbooks notate raised chord tones in general with small sharp signs, so the general notation for a dominant seventh in minor is $V^7/_{3\#}$. However, there are some keys in which notes will be raised by a natural or a double sharp instead of a sharp.
- Raising the third of V7 is the same as raising 7̂. You have already been doing this with V# chords in minor.

---

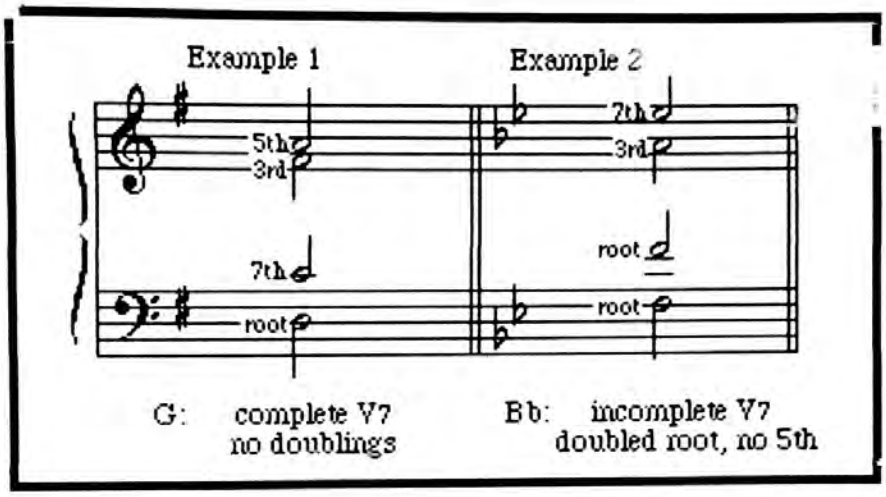
1. WRITE key signatures for these major keys and the V7 chords indicated below the staff.



2. WRITE key signatures for these minor keys and the $V^7/_{3\#}$ chords indicated below the staff.



9.4 Write V7 chords in four voices

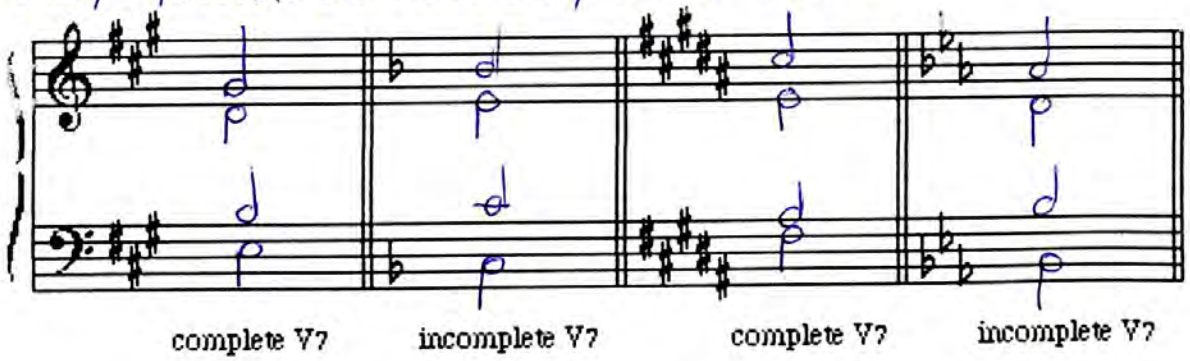


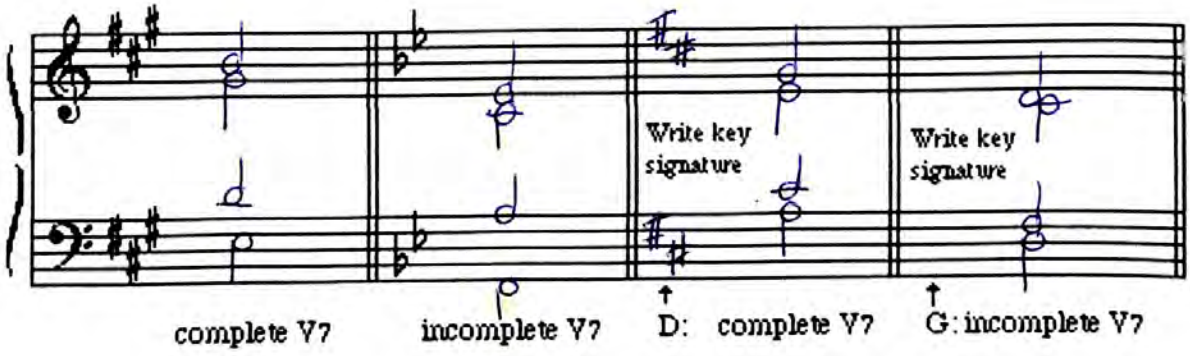
To write V7 chords in four voices... EITHER:
- Write a different chord tone for each voice, as in example 1. This is a complete V7. ...OR...
- Double the root and omit the fifth, as in example 2. This is an incomplete V7.

---

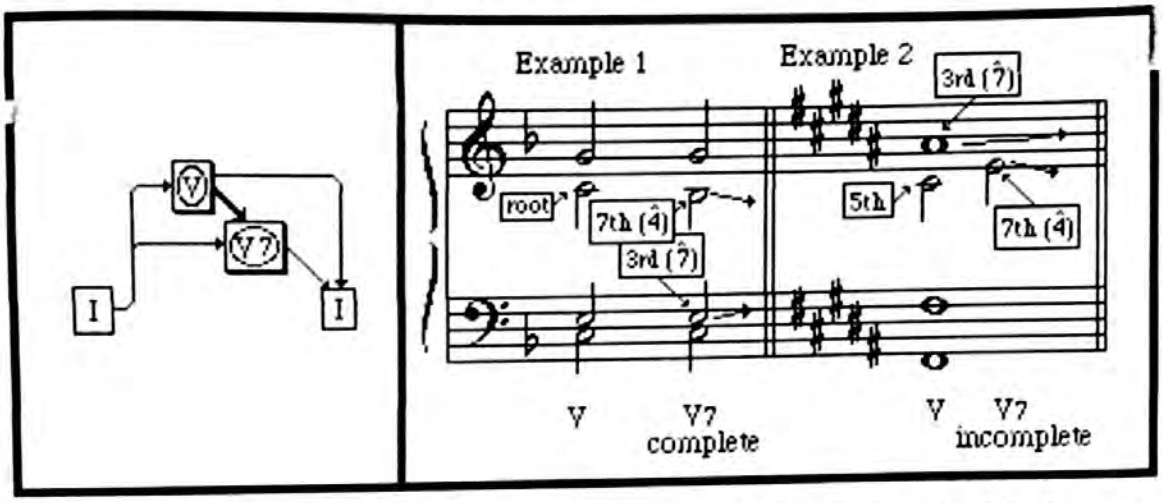
1. WRITE these complete and incomplete V7 chords in four voices.

many possible answers. Only one is shown.





19.5 Approach V7 by V and mark tendency tones



V7 often follows V as an elaboration or an expansion. See the chart on the left of the box above. You can approach V7 from V in either of these two ways:

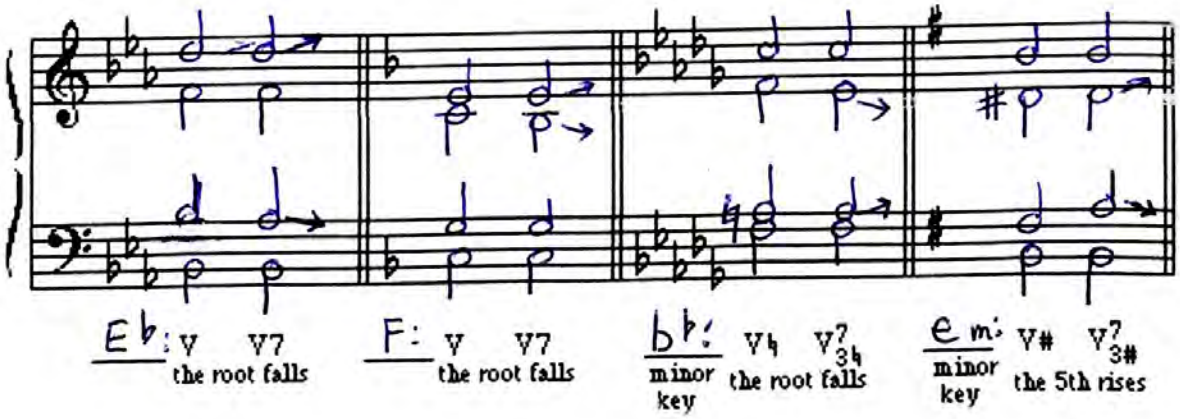
- Move the root of V down a step to a seventh above the bass. See example 1 above and worksheet 19.1. This is by far the more common voice leading and creates a complete V7 chord.
- Move the fifth of V up to the seventh above the bass. See example 2 above. This voice leading creates an incomplete V7 chord.

- Chord tones can be repeated, as in example 1, or sustained, as in example 2 and in worksheet 19.1.

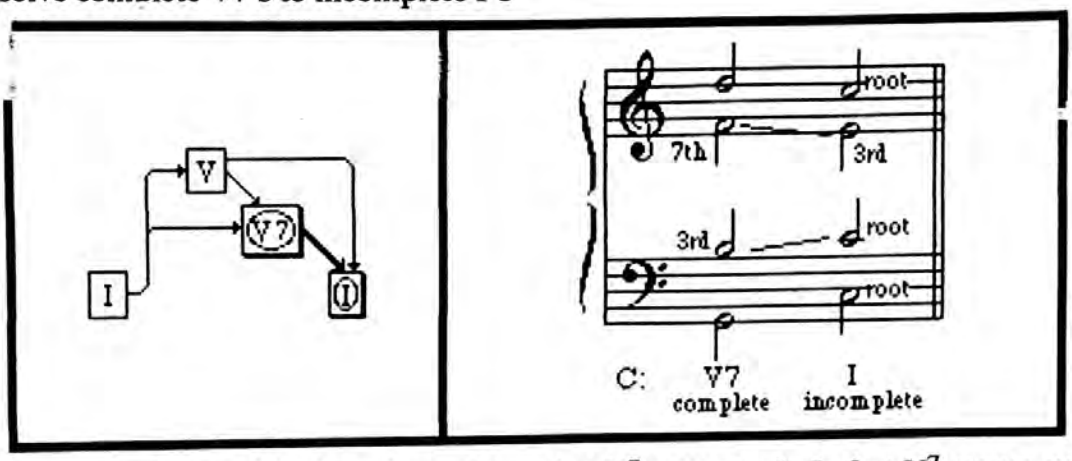
- $\hat{4}$ and $\hat{7}$ are called tendency tones because they tend to move to notes which are a step away: $\hat{4}$ (the seventh of V^7) tends to move down to $\hat{3}$, and $\hat{7}$ (the third of V^7) tends to move up to $\hat{1}$ (hence $\hat{7}$'s name, "the leading tone"). See the arrows after these notes in the examples at the top of the page

---

1. ELABORATE these V chords by following them with V7 chords. FOLLOW directions below the Roman numerals.
2. DRAW arrows from the tendency tones in V7 towards the next likely note.



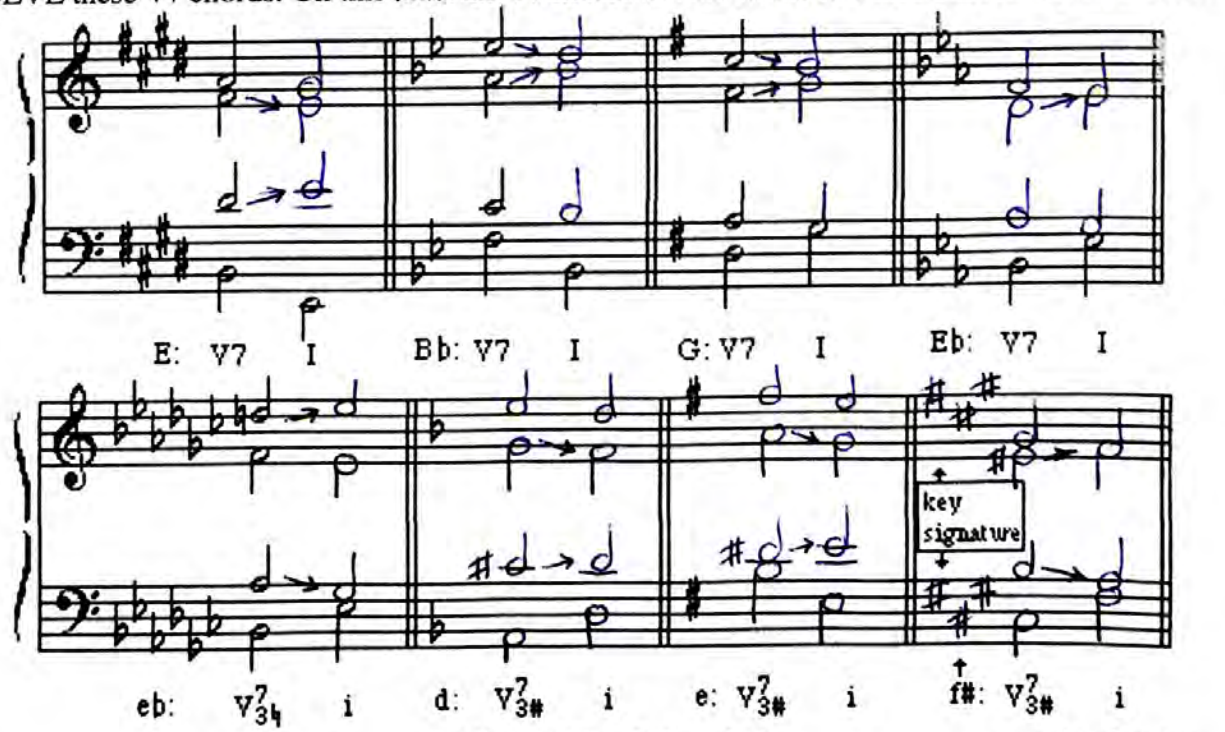
19.6 Resolve complete V7's to incomplete I's



The chart on the left side of the box above shows that V^7 moves to I. In fact V^7 moves even more strongly to I than does V. The reason for this is that V^7 includes the dissonant intervals of a seventh from the bass and a tritone between the third and seventh of the chord. This harmonic tension is resolved as the tendency tones move to their goals $\hat{3}$ and $\hat{1}$.

- An incomplete I chord is missing a fifth, like an incomplete V^7. Because of the missing fifth the incomplete I has a three roots and a third. See the second chord in the example on the right side of the box above.
- When moving from a complete V^7 to an incomplete I, the tendency tones move to their goals:
  1. The seventh of V^7 ($\hat{4}$) falls by step to the third of I.
  2. The third of V^7 ($\hat{7}$) rises by half step to the root of I.
- The remaining voice moves by step to the root of I.

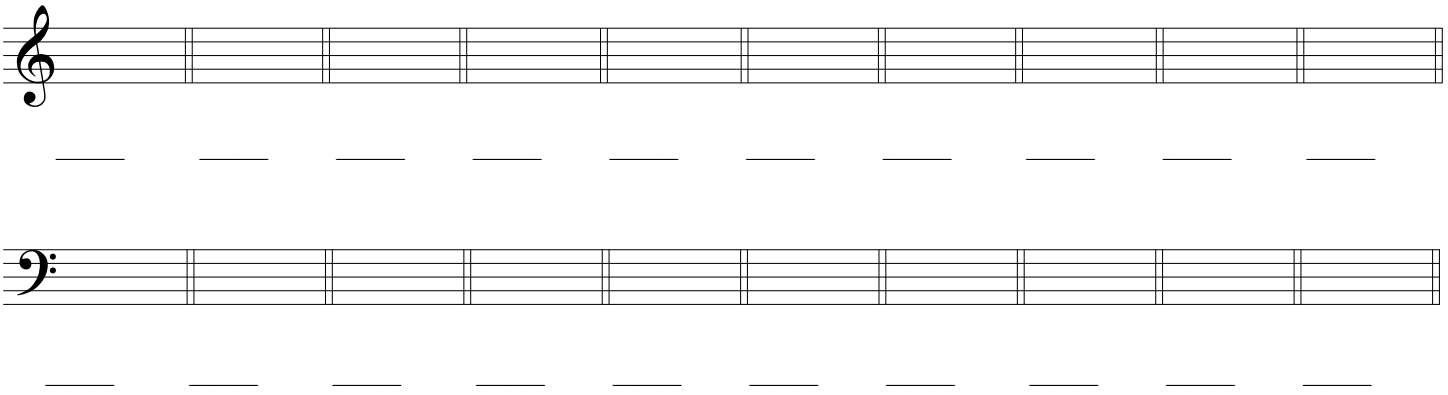
RESOLVE these V7 chords. On this page all V7 chords are complete and all I chords are incomplete.



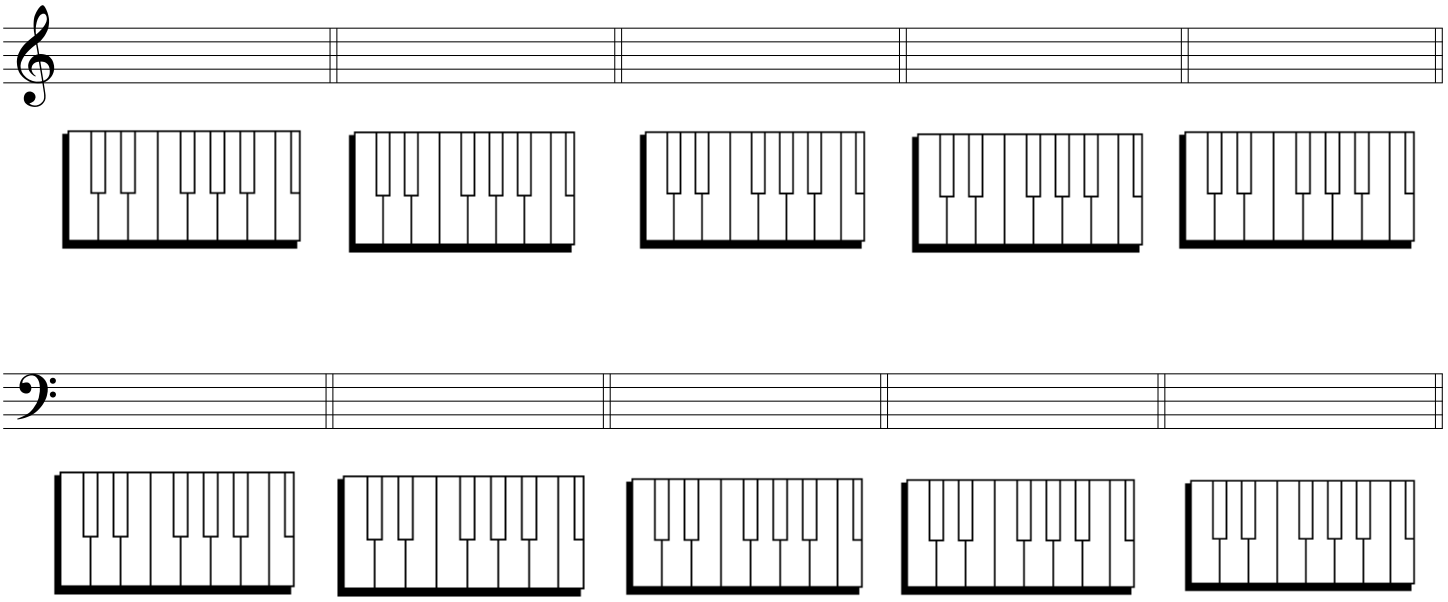
Name: _____
Date:_____

Test on Chapters 1 and 2

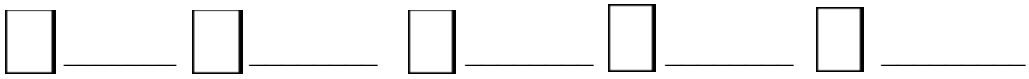
1. Write the letter names for these notes.



2. Draw dots on the keyboard for the notes on the staff.



3. Write enharmonic equivalents for these notes. (instructor writes letter names in boxes)

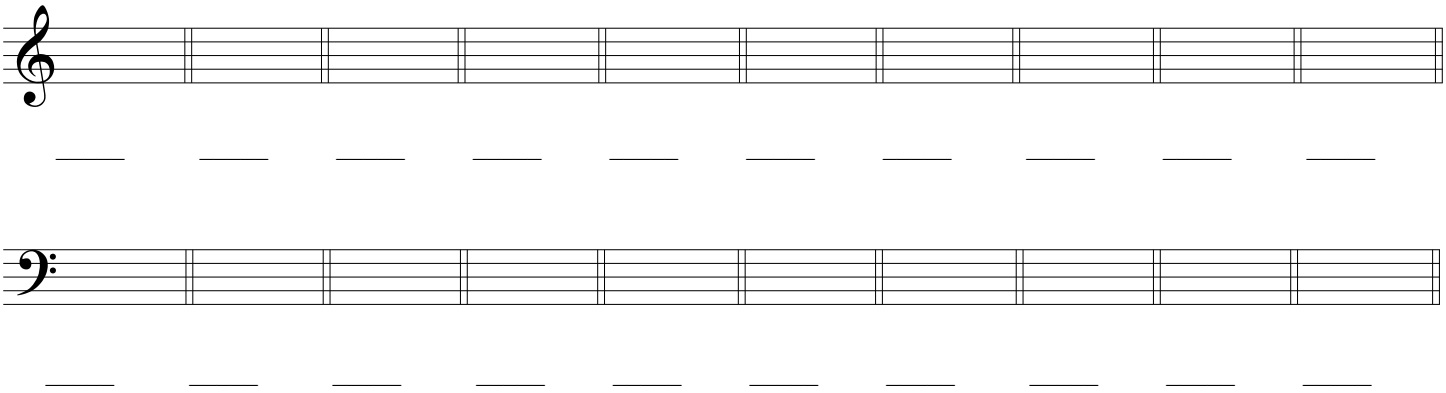


Name: _____
Date: _____

Test on Chapters 1, 2 and 3

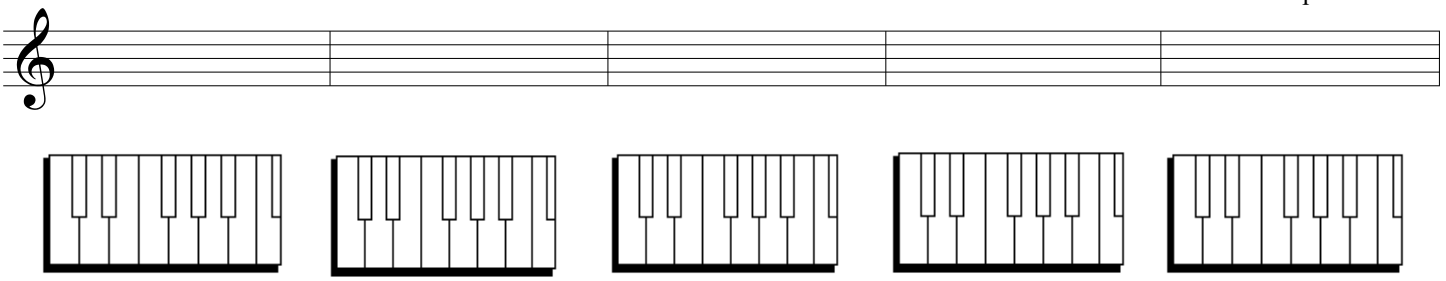
http://www.gmajormusictheory.org/Fundamentals/workbooks.html

1. Write the letter names for the notes shown on the staffs.



2. Draw dots on the keyboards for the notes on the staff.*

*Instructor writes notes on staff with sharps and flats.



3. For the notes in the boxes, write their names and answer the questions about their durations

☐ _____ How many in a quarter note? _____

☐ _____ How long (in quarter notes?) _____

☐ _____ How long (in quarter notes?) _____

☐ _____ How many in a quarter note? _____

☐ _____ How long (in quarter notes?) _____

4. Write the time signature in the box for the rhythm shown on the single-line staff.*

a. 

b. 

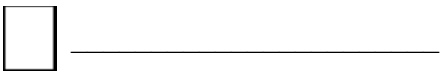
c. 

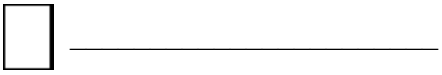
d. 

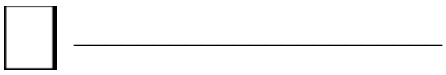
e. 

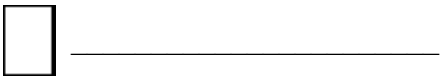
* Instructor writes 2 measure rhythm

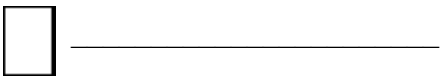
5. Name the rests which have been drawn in the boxes.

a. 

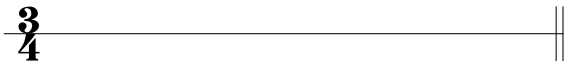
b. 

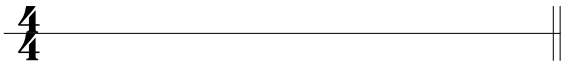
c. 

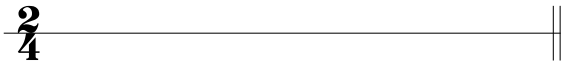
d. 

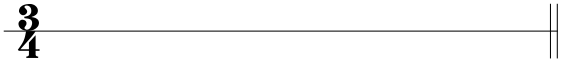
e. 

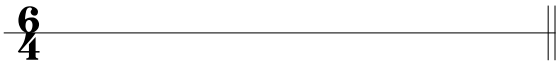
6. In the box provided by the instructor, fill in the note--one note only--to complete the measure.**

a. 

b. 

c. 

d. 

e. 

** Instructor writes 2 measure rhythm with a box in the place of a note. Student writes missing note in box.

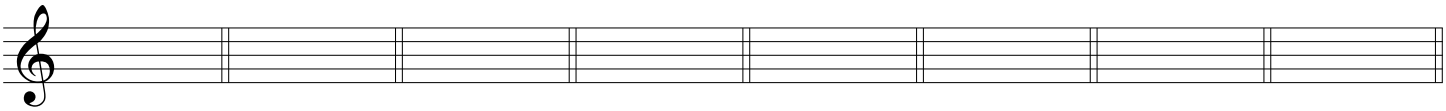
Test on Chapter 1

Name: _____
Date: _____

http://www.gmajormusictheory.org/Fundamentals/workbooks.html

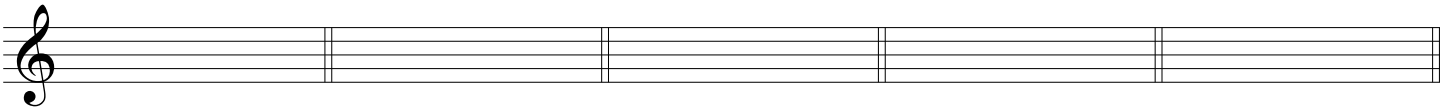
1. Write letter names on each white key on this keyboard.

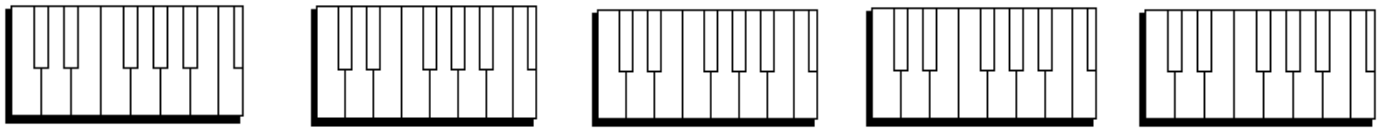
2. Write the letter names for these notes.



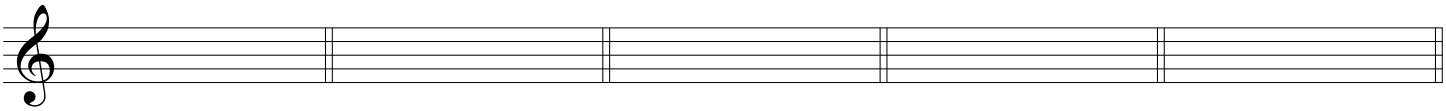
____ ____ ____ ____ ____ ____ ____ ____

3. Draw dots on the keyboards for the notes on the staff.





4. Write whole notes for the letter names given below the staff.



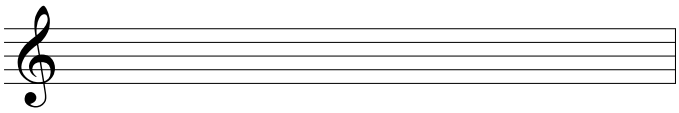
5. Identify the time value names for the notes in the boxes, and write the usual number of beats for each one.

a. ☐ _____ (name) _____ (beats)

b. ☐ _____ _____

c. ☐ _____ _____

6. Write stems on these noteheads.



7. Write the notes for this phrase.
   The top series of letters represents quarter notes (Q), half notes (H) and whole notes (W).
   The bottom series of letters represents the pitches for the notes.

rhythmic value:

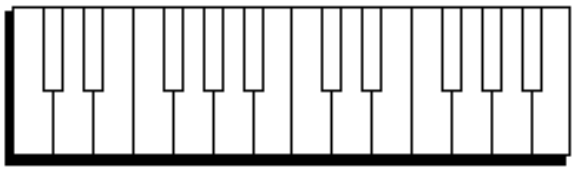
pitch letter:

Name _____
Date: _____

Test on Chapters 4 and 5
Scales and Key Signatures

http://www.gmajormusictheory.org/Fundamentals/workbooks.html
Instructor fills in information on the red lines

1. Write dots on the keyboard for the notes of a(n) _____scale.



7 points

2. Fill in the blanks:

a. There are _____ _____ in the key of _____.
(how many?) (sharps or flats?)

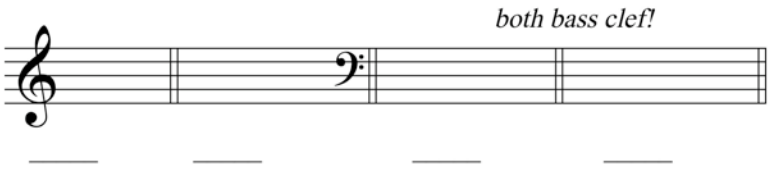
b. There are _____ _____ in the key of _____.

c. There are _____ _____ in the key of _____.

d. There are _____ _____ in the key of _____.

8 points

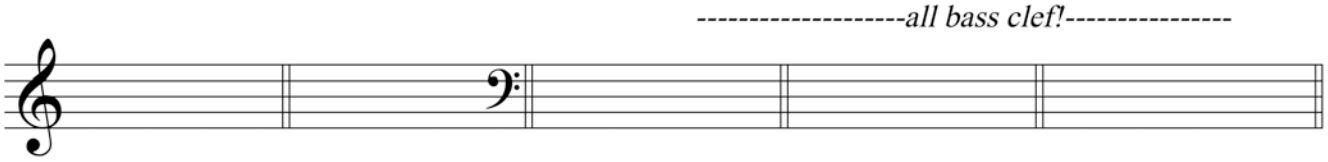
3. Give the key for the key signatures written by the instructor:



____ ____ ____ ____

2 pts. each x 4 = 8 points

4. Write the key signatures for the keys given by the instructor.



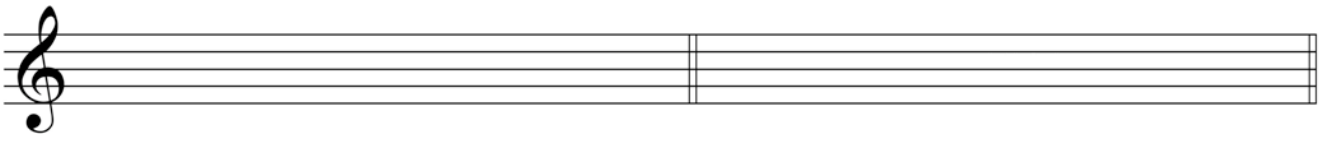
a. _____ b. _____ c. _____ d. _____ e. _____

2 pts. each x 5 = 10 points

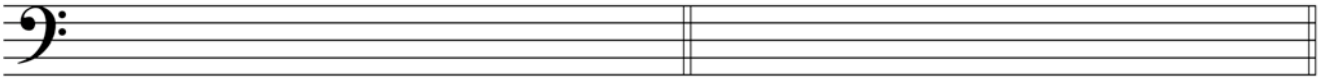
--next page →

5. Write these scales <u>with their correct key signatures.</u>

a. _____ b. _____

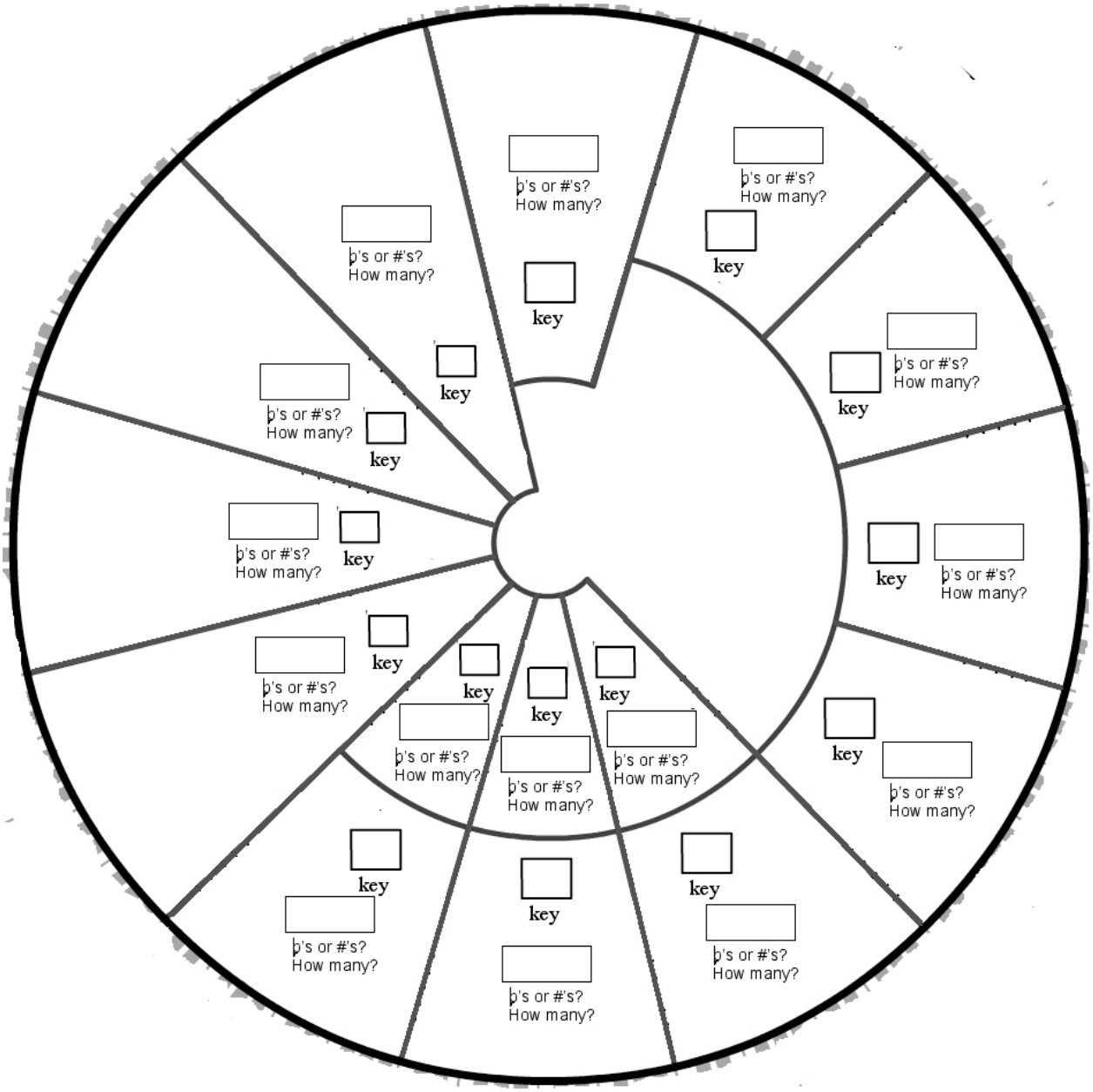


c. _____ d. _____



8 pts. per scale = 36 points

6. Fill in the keys. Also fill in the number of sharps or flats, and specify which they are: sharps or flats.



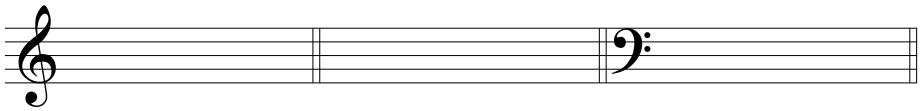
1 per box = 31 points

Name: _____
Date: _____

Test on Chapters 5, 6 and 7

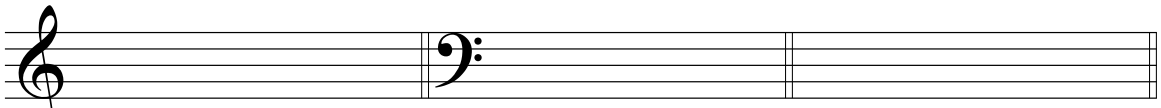
http://www.gmajormusictheory.org/Fundamentals/workbooks.html

1. Write the ***major*** key for the following key signatures.



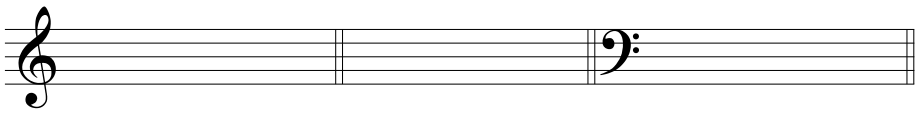
_____ _____ _____ instructor writes key signatures

2. Write key signatures for the ***major*** keys below the staff.



_____ _____ _____ instructor writes keys

3. Write the ***minor*** key for the following key signatures.



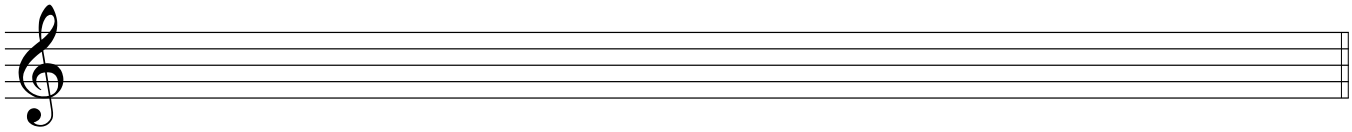
_____ _____ _____ instructor writes key signatures

4. Write signatures for the minor keys below the staff.

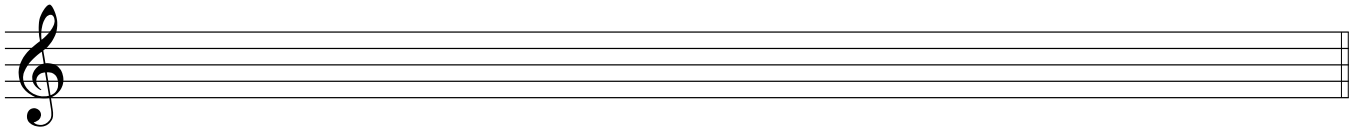
___ minor ___ minor ___ minor instructor writes keys

5. Write the minor scale given the key signature. instructor writes key signatures

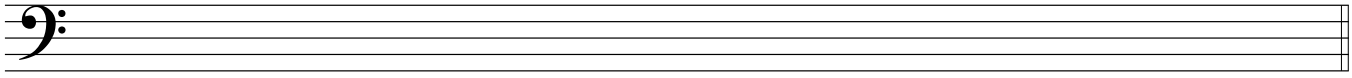
melodic minor



natural minor

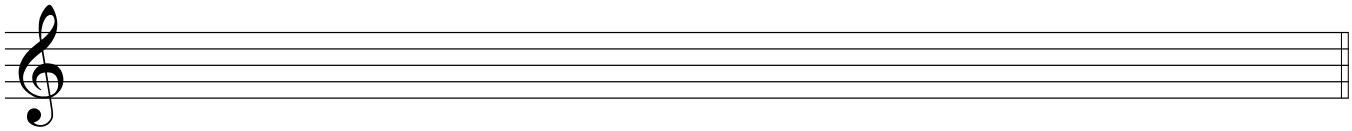


harmonic minor

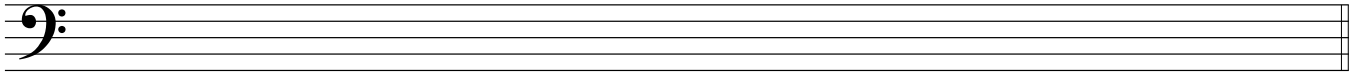


6. Write the key signature and minor scale given the minor key. instructor writes key

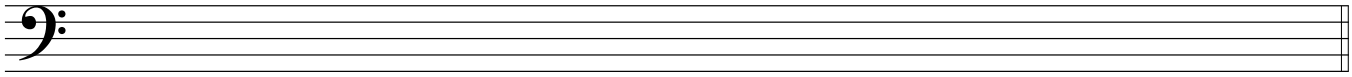
___ harmonic minor



___ melodic minor



___ natural minor



Probs 1 - 4: each key or
key signature = 3 pts = 36 pts total
Probs 5 - 6:
4 scales = 9 pts each = 36 pts total
2 scales = 14 pts each = 28 pts total
Test = 100 pts

Name_____

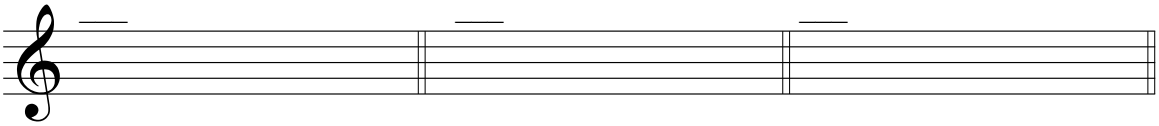
Date _____

Test on Chapters 8 and 10

http://www.gmajormusictheory.org/Fundamentals/workbooks.html

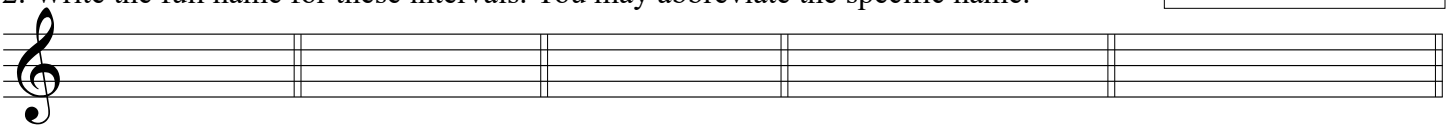
1. Write the key signatures for these major keys.

instructor writes keys



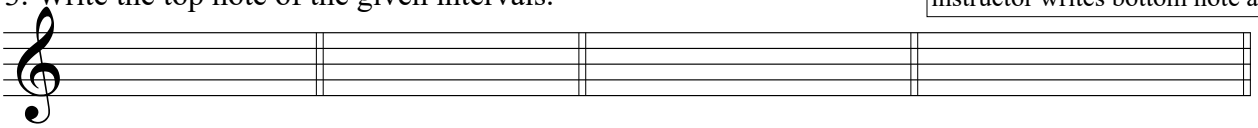
2. Write the full name for these intervals. You may abbreviate the specific name.

instructor writes intervals



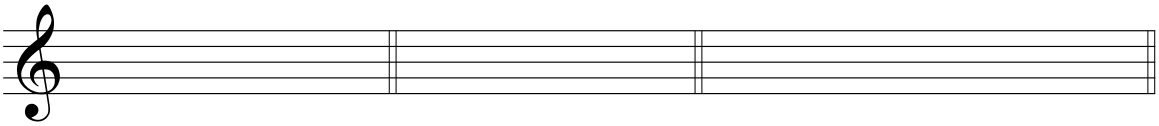
3. Write the top note of the given intervals.

instructor writes bottom note and interval name



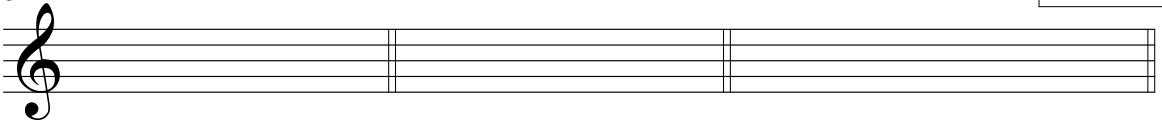
4. Identify these triads as major, minor, diminished or augmented.

insturctor writes triads



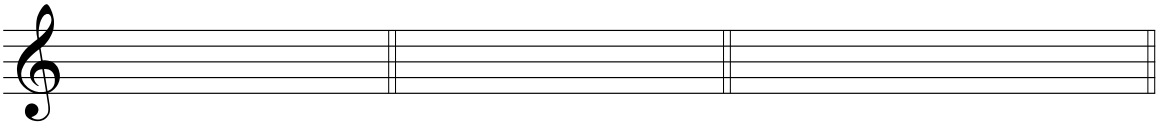
5. Construct triads above these notes.

instructor writes roots and triad types



6. Construct triads given the third or fifth.

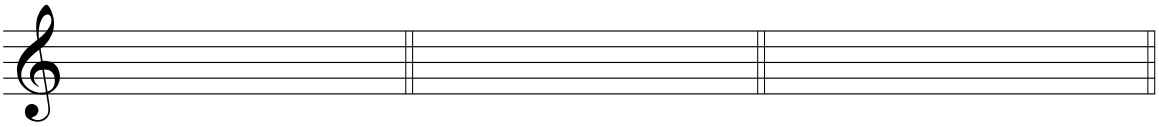
instructor writes and labels 3rd or 5th; writes triad type



_____ _____ _____

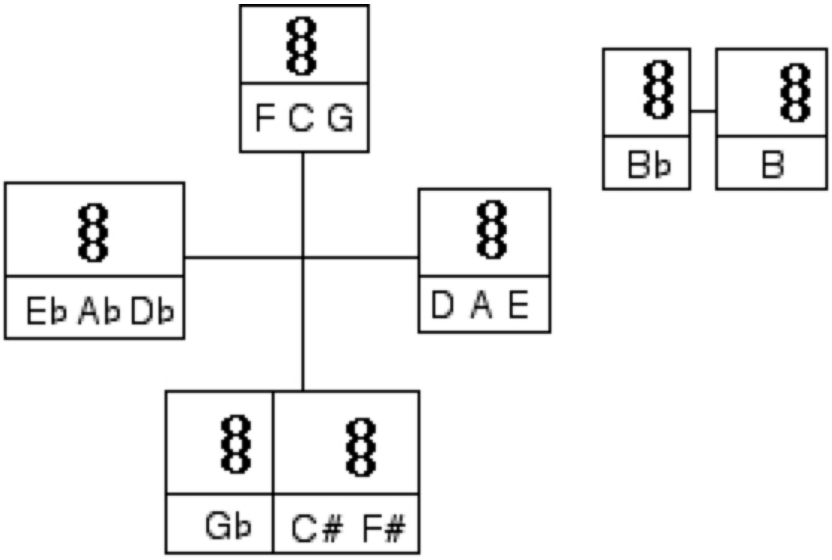
7. Identify the triads as major, minor, diminished or augmented.

instructor writes *key signature* and triad



_____ _____ _____

8. Write sharps and flats next to the appropriate notes in this chart to make all the triads major.
Circle the triads that need no alterations.



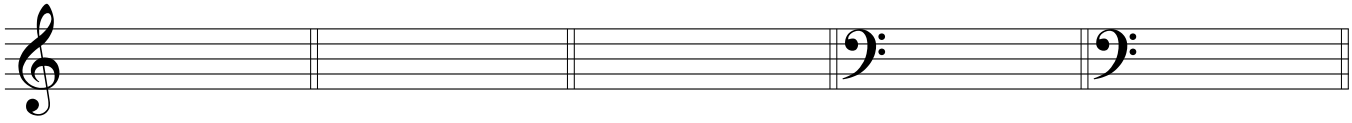
In 1 - 4 each problem = 3
In 5 - 7 each problem = 4
In 8 each triad = 2 (14 total)
Test = 45 + 36 + 14 = 95

Name_____
Date_____

Test on Chapters 11 and 12

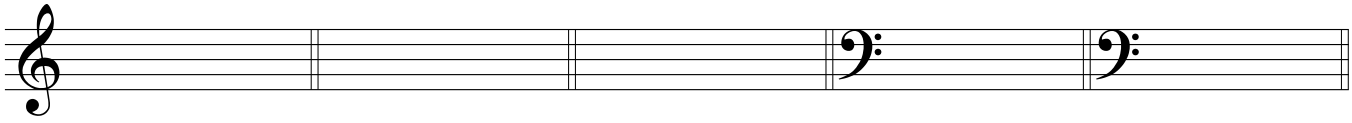
(Instructor writes information in parentheses and underlined in red.)

1. Write the key signature and the note. (Instructor writes key and scale degree.)



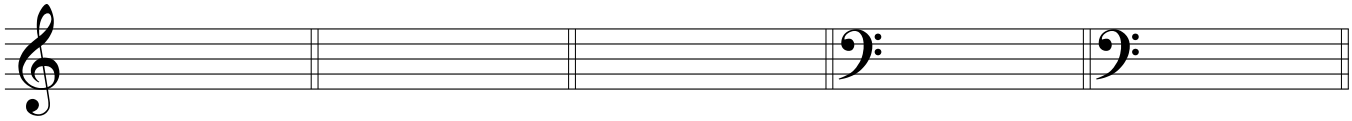
10 pts

2. Write the key and the scale degree of the note. (Instructor writes key sig. and note.)



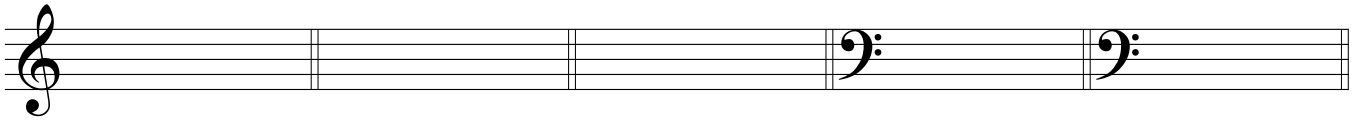
10 pts

3. Write the ***major*** keys and Roman numerals. Roman numerals should reflect the type of triad. (Instructor writes key sig. and triad.)



10 pts

4. Write the ***minor*** keys and Roman numeral. Roman numerals should reflect the type of traid. (Instructor writes key sig. and triad.)



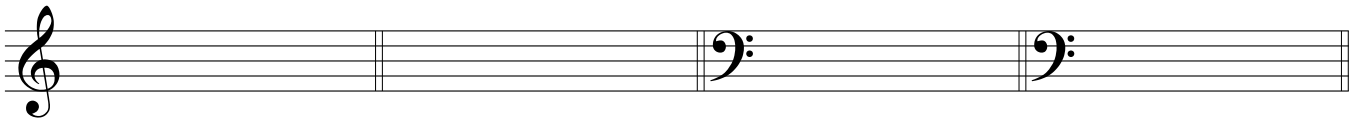
minor *minor* *minor* *minor* *minor*

10 pts

next page

5. For each triad:
   a) Identify the triad as root position (R), first inversion (1st), or second inversion (2nd)
   b) Give appropriate figures ($\frac{5}{3}$, $\frac{6}{3}$ or $\frac{6}{4}$)
   c) Identify the letter of the root
   d) Identify the bottom note as the root (R), third (3rd) or fifth (5th)

(Instructor writes triads in root pos. or inverted.)

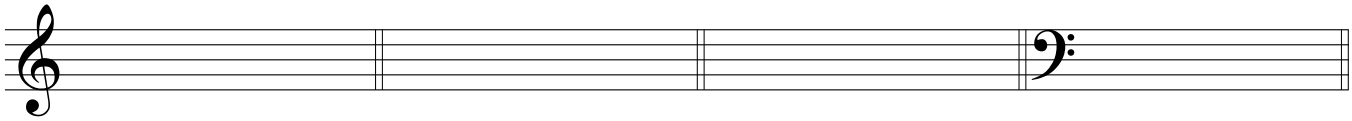


a) _____ b) _____ a) _____ b) _____ a) _____ b) _____ a) _____ b) _____

c) _____ d) _____ c) _____ d) _____ c) _____ d) _____ c) _____ d) _____

16 pts

6. Write these triads. (Instructor writes triads' letter names, qualities and inversion figures.)



_____ _____ _____ _____

12 pts

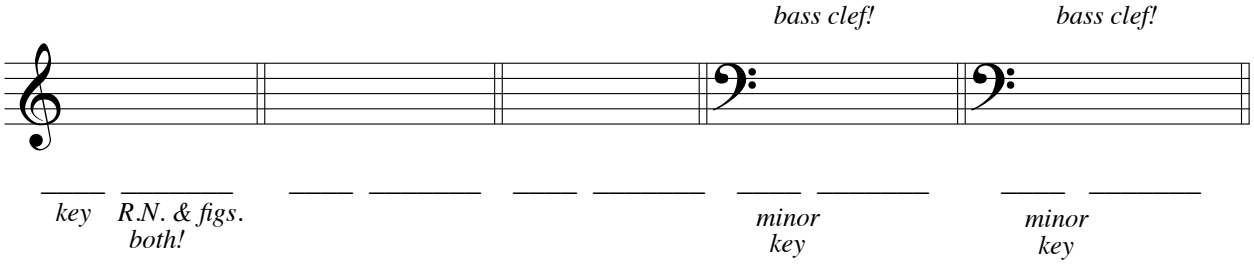
test = 68 pts

Name_____
Date_____

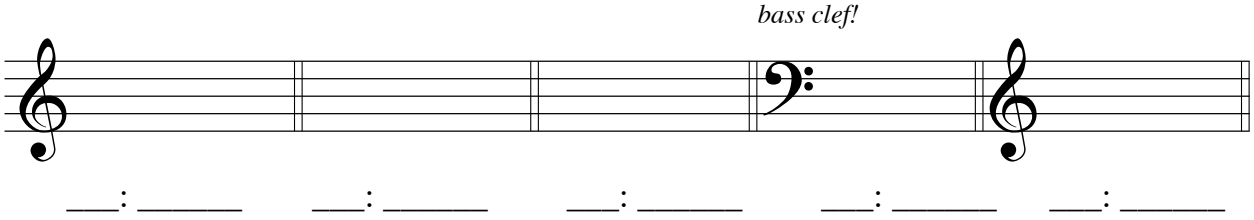
Test on Chapters 13 and 14

http://www.gmajormusictheory.org/Fundamentals/workbooks.html
(Instructor writes information in parentheses and underlined in red.)

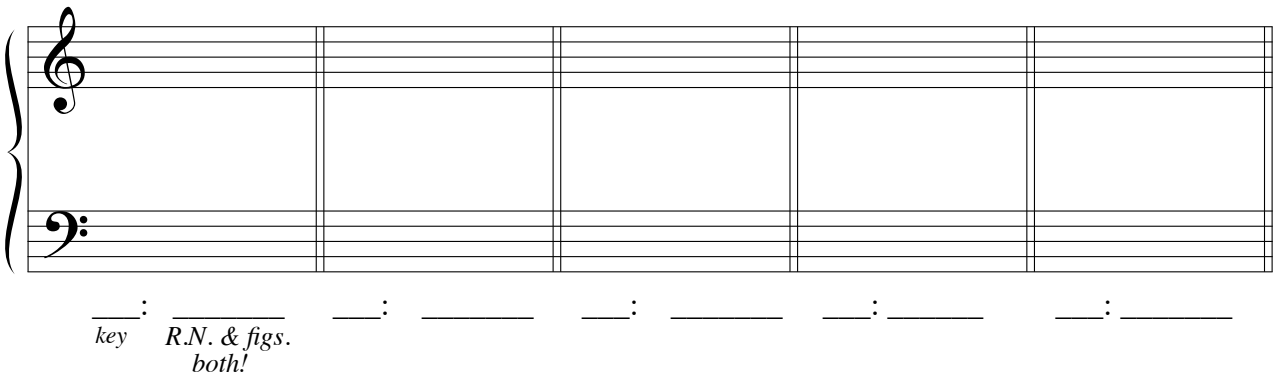
1. Write the key, Roman numeral and abbreviated inversion figures (when needed) for each triad.



2. Write the indicated key signatures and triads.

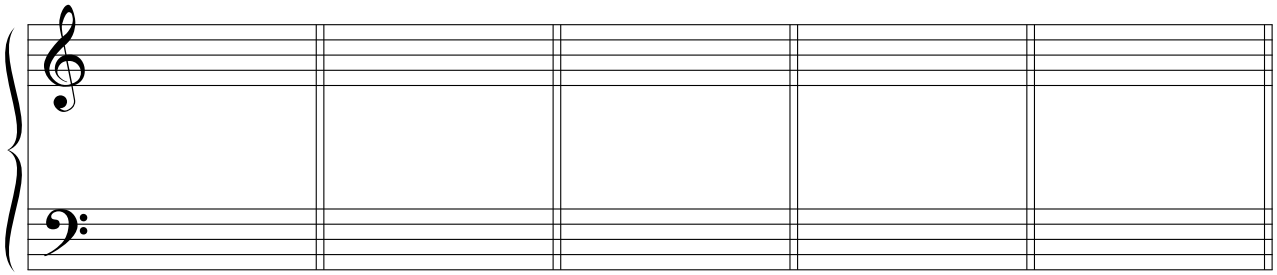


3. Write the key, Roman numerals and abbreviated inversion figures (when needed) for each triad.



Please go on to the next page.

4. For each triad:
   a) Write the key, Roman numerals and abbreviated inversion figures on the top lines.
   b) Write the doubling for each triad on the bottom line. For doublings choose from: root, third of fifth.

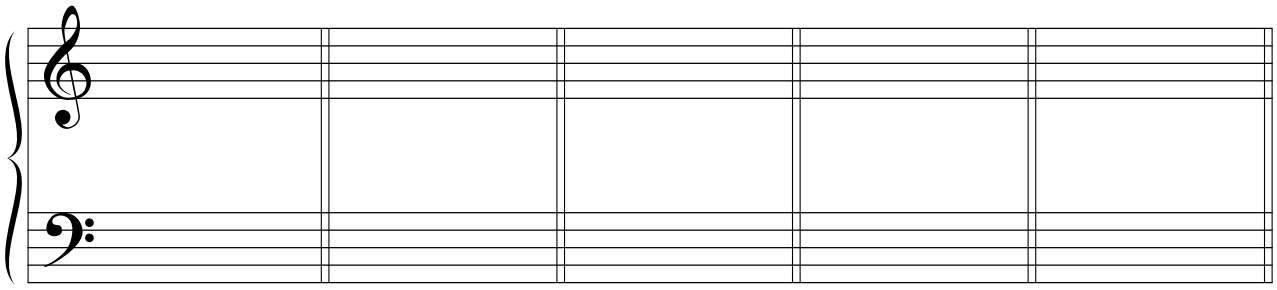


___: _____ ___: _____ ___: _____ ___: _____ ___: _____

_____ _____ _____ _____ _____

5. Given the chord tones, bass and spacing, write the top three voices of root position triads (several correct answers).

Spacing: close open close open close



1. 3 pts each = 15
2. 3 pts each = 15
3. 2 pts each = 10
4. 3 pts each = 15
5. 3 pts each = 15

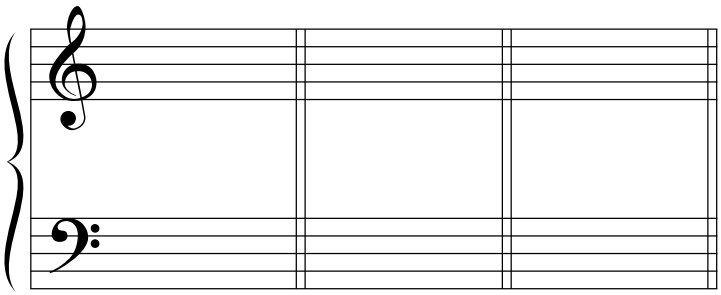
Test = 75 pts

Name:_____

Test on Chapters 14 and 15

Date:_____

1. Write the key, and the Roman and Arabic numeral(s) for the triad
   Arabic numerals may be abbreviated.

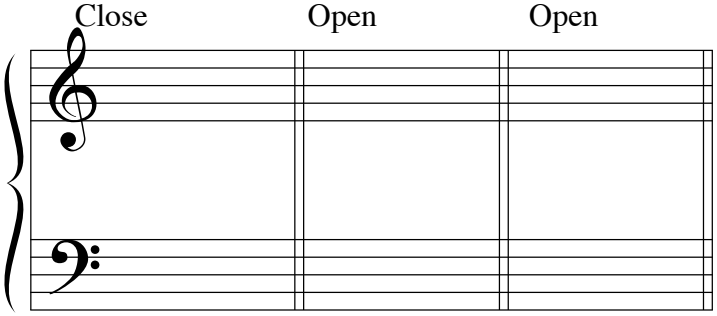


___ ___ ___ ___ ___ ___ ___ ___ ___

instructor writes key signatures
and inverted triads in four voices

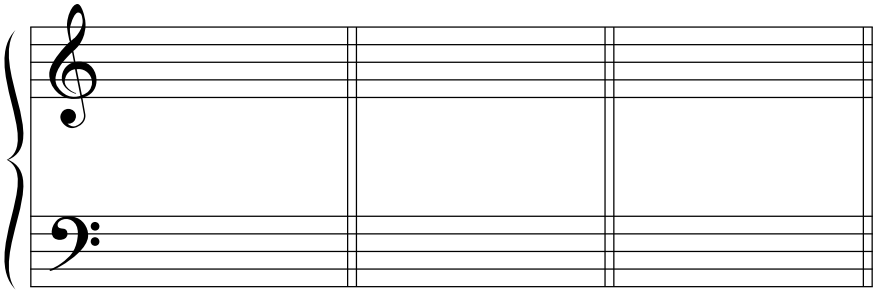
2. Given the bass note and spacing for ***root position*** triadswrite the top three voices.

Close Open Open



instructor writes
bass note

3. Complete the second triad using either Common Tone-Stepwise
   or Contrary Motion-Nearest voice leading, whichever is appropriate.



___: ___ ___ ___: ___ ___ ___: ___ ___

instructor writes key signature,
first chord, second bass note,
key and Roman numerals

Test on Chapter 15

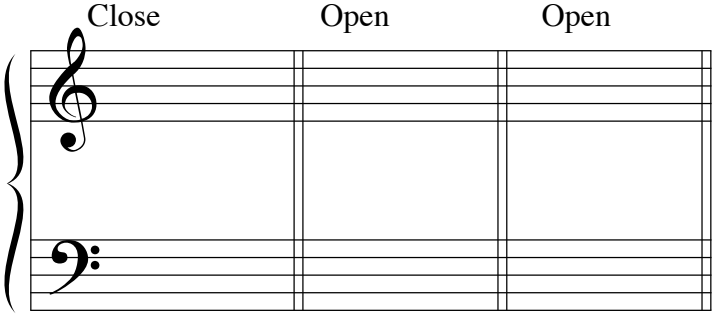
http://www.gmajormusictheory.org/Fundamentals/workbooks.html

Name:_____

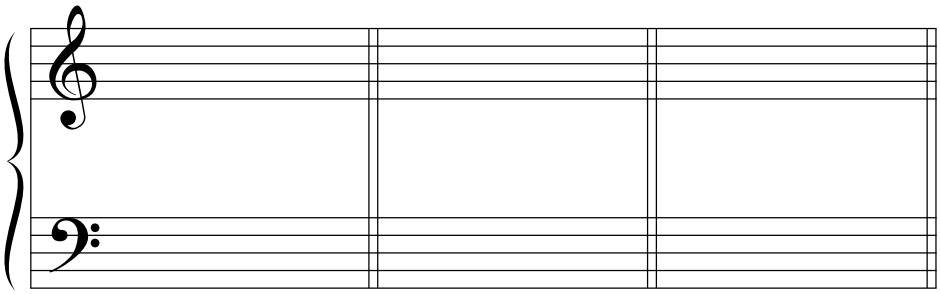
Date:_____

1. Given the bass note and spacing for ***root position*** triads, write the top three voices.

Close Open Open

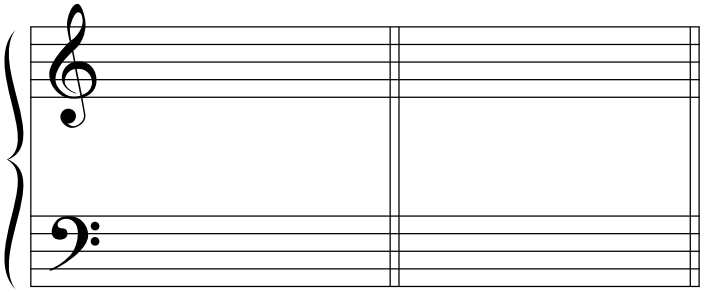


2. Given all four voices of the first triad and the bass of the second triad, write the top three voices of the second triad using either Common Tone-Stepwise or Contrary Motion-Nearest voice leading.



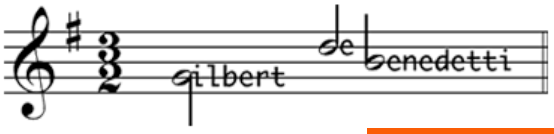
3. Given two bass notes and the spacing for the first triad, write the top three voices of both triads using either Common Tone-Stepwise or Contrary Motion-Nearest voice leading.

close close



4. Given two notes in each of two voices, label the motion of the voices in relation to each other.

_____ _____ _____ _____



INDEX OF TERMS

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