

Summer Work for AP Music Theory 2026-2027

Mr. Fraioli

What's in your packet?

1. Textbook pages
2. Workbook pages
3. Answers to textbook pages for chapter 2 of Tonal Harmony: With an Introduction to Twentieth Century Music by Kostka/Payne/Almén, 8th ed.

What do I do with the packet of pages?

1. Do textbook reading and examples first!
 - a. Skim through sections and highlight big ideas/definitions/italicized terms
 - b. Complete all Self-tests and Checkpoints in pencil (every other item will do for most- but if you struggle with the concept, do all)
 - c. Complete workbook sections as directed by the Textbook pages (do all). If you email (PDF) your work I will grade it and give feedback.

Tasks☺

Students must complete the following assignments by or before return to school in September.

1. Chapter One - Textbook (all) and quiz
 2. Chapter Two - Textbook (all), workbook (all) and quiz
 3. Chapter Three - Textbook (all), workbook (all) and quiz
- ◆ please write out answers including checkpoints, in pencil
 - ◆ please check Blackboard site and email for some listening clips
 - ◆ please "google" all music clips that need listening to

If you have any questions, please feel free to email me at: mfraioli@briarcliffschools.org

Have a great summer!!!

Mr. Fraioli

Textbook
chap. 1

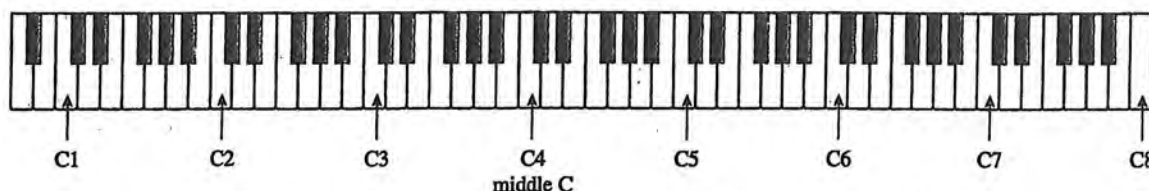
Chapter One

Elements of Pitch

The Keyboard and Octave Registers

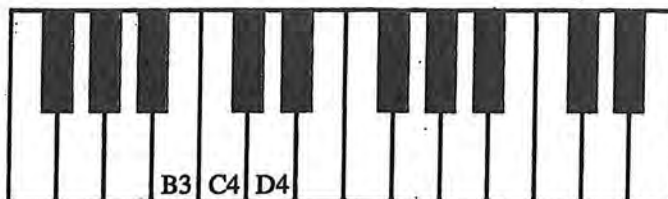
Pitch in music refers to the highness or lowness of a sound. Pitches are named by using the first seven letters of the alphabet: A, B, C, D, E, F, and G. We will approach the notation of pitch by relating this pitch alphabet to the piano keyboard, using Cs as an example. The C nearest the middle of the keyboard is called middle C, or C4. Higher Cs (moving toward the right on the keyboard) are named C5, C6, and so on. Lower Cs (moving toward the left) are named C3, C2, and C1. Notes below C1 are followed by a 0, as in B0. All the Cs on the piano are labeled in Example 1-1.

Example 1-1



From any C up to or down to the next C is called an **octave**. All the pitches from one C up to, but not including, the next C are said to be in the same **octave register**. As Example 1-2 illustrates, the white key above C4 is named D4 because it is in the same octave register, while the white key below C4 is named B3.

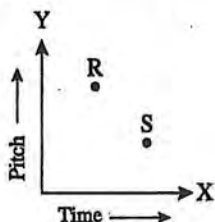
Example 1-2



Notation on the Staff

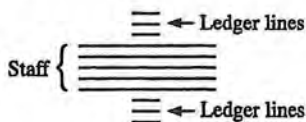
Our system of musical notation is similar to a graph in which time is indicated on the X axis and pitch is shown on the Y axis. In Example 1-3, R occurs before S in time and is higher than S in pitch.

Example 1-3



A staff is used in music to indicate the precise pitch desired. A staff consists of five lines and four spaces, but it may be extended indefinitely through the use of ledger lines (Ex. 1-4).

Example 1-4



A clef must appear at the beginning of the staff in order to indicate which pitches are to be associated with which lines and spaces. The three clefs commonly used today are shown in Example 1-5, and the position of C4 in each is illustrated. Notice that the C clef appears in either of two positions.

Example 1-5



The clefs in Example 1-5 are shown in the positions that are in common use today, but you may occasionally find them placed differently on the staff in some editions. Wherever they appear, the design of the G clef circles G4, the dots of the F clef surround F3, and the C clef is centered on C4.

The **grand staff** is a combination of two staves joined by a brace, with the top and bottom staves using treble and bass clefs, respectively. Various pitches are notated and labeled on the grand staff in Example 1-6. Pay special attention to the way in which the ledger

lines are used on the grand staff. For instance, the notes C4 and A3 appear twice in Example 1-6, once in relation to the top staff and once in relation to the bottom staff.

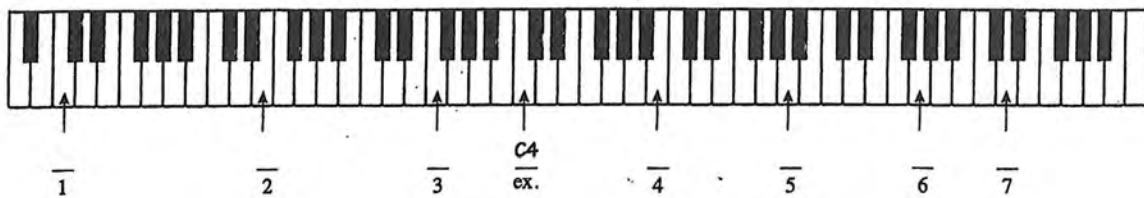
Example 1-6



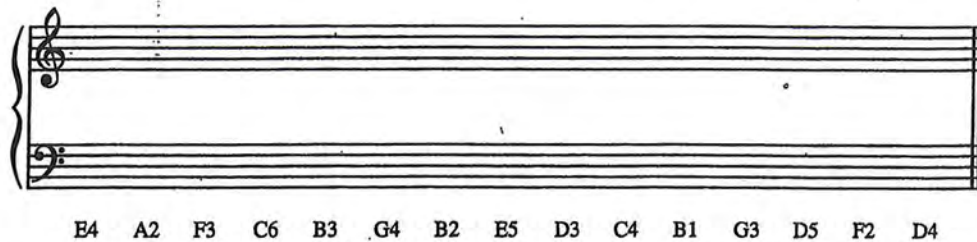
Self-Test 1-1

(Answers begin on page 552.)

- A. Name the pitches in the blanks provided, using the correct octave register designations.



- B. Notate the indicated pitches on the staff in the correct octave.



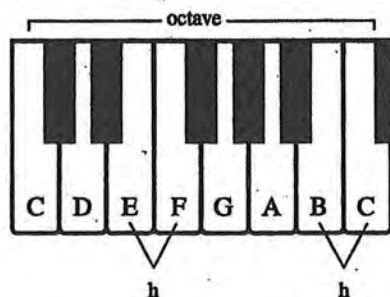
Exercise 1-1 See Workbook.

The Major Scale

In this chapter you will learn about major and minor scales, the scales that form the basis of tonal music. However, there are many other kinds of scales, some of which are covered in Chapter 26.

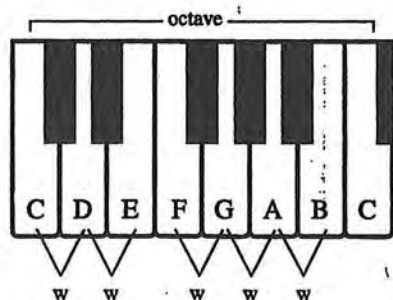
The **major scale** is a specific pattern of small steps (called half steps) and larger ones (called whole steps) encompassing an octave. A **half step** is the distance from a key on the piano to the very next key, white or black. Using only the white keys on the piano keyboard, there are two half steps in each octave, indicated by the letter "h" in Example 1-7.

Example 1-7



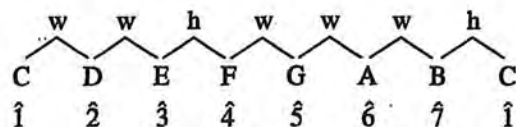
A **whole step** skips the very next key and goes instead to the following one. Using only the white keys on the piano keyboard, there are five whole steps in each octave, indicated by the letter "w" in Example 1-8.

Example 1-8

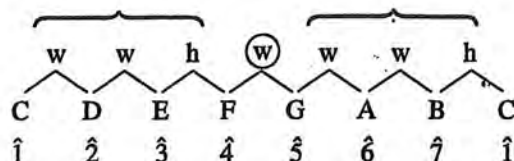


The major-scale pattern of whole and half steps is the same as that found on the white keys from any C up to the next C. In the next diagram, the numbers with carets above them (1, 2, etc.) are scale degree numbers for the C major scale.*

* Throughout this book we will refer to major scales with uppercase letters—for example, A major or A—and minor scales with lowercase letters—for example a minor or a.



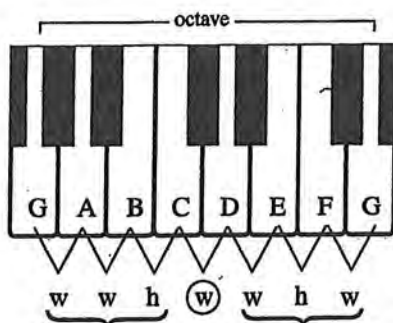
You can see from this diagram that half steps in the major scale occur only between scale degrees 3 and 4 and 7 and 1. Notice also that the major scale can be thought of as two identical, four-note patterns separated by a whole step. These four-note patterns are called **tetrachords**.



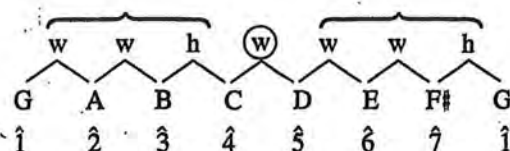
If we examine the steps on the white keys of a G-to-G octave, as in Example 1-9, we do not find the same pattern of whole and half steps that occurred in the C-to-C octave. To play a G major scale, we would need to skip the F key and play the black key that is between F and G. We will label that key with an **accidental**, a symbol that raises or lowers a pitch by a half or whole step. All the possible accidentals are listed in the following table.

Symbol	Name	Effect
♯	Double sharp	Raise a whole step
♯	Sharp	Raise a half step
♮	Natural	Cancel a previous accidental
♭	Flat	Lower a half step
♭♭	Double flat	Lower a whole step

Example 1-9



We can make our G scale conform to the major-scale pattern by adding one accidental, in this case a sharp.



It is important to understand that major and minor scales always use all the letter names of the musical alphabet. It would not be correct to substitute a G $\flat$ for the F $\sharp$ in a G major scale.

The scale is written on the staff in Example 1-10.

Example 1-10



Notice that when we write or say the names of notes and accidentals, we put the accidental last (as in F $\sharp$ or F sharp), but in staff notation the accidental always *precedes* the note that it modifies (as in Ex. 1-10).

The Major Key Signatures

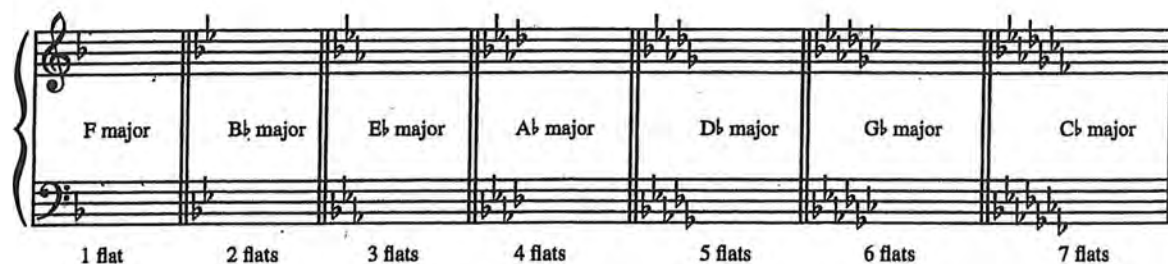
One way to learn the major scales is by means of the pattern of whole and half steps discussed in the previous section. Another is by memorizing the key signatures associated with the various scales. The term **key** is used in music to identify the first degree of a scale. For instance, the key of G major refers to the major scale that begins on G. A **key signature** is a pattern of sharps or flats that appears at the beginning of a staff and indicates that certain notes are to be consistently raised or lowered. There are seven key signatures using sharps. In each case, the name of the major key can be found by going up a half step from the last sharp (Ex. 1-11).

Example 1-11

A musical staff in treble clef showing seven key signatures. Each key signature is labeled with its name: G major, D major, A major, E major, B major, F# major, and C# major. Below each key signature is the number of sharps: 1 sharp, 2 sharps, 3 sharps, 4 sharps, 5 sharps, 6 sharps, and 7 sharps. The sharps are placed on the lines of the staff in the order: F, C, G, C, F, C, G.

There are also seven key signatures using flats. Except for the key of F major, the name of the major key is the same as the name of the next-to-last flat (Ex. 1-12).

Example 1-12



You may have noticed that there are three pairs of major keys that would sound exactly the same—that is, they would be played on the very same keys of the piano keyboard.

B major = C♭ major

F♯ major = G♭ major

C♯ major = D♭ major

Notes that have the same pitch but that are spelled differently, like E and F♭, are said to be **enharmonic**. Keys can be enharmonic as well, such as the three pairs of keys shown above. If two major keys are not enharmonic, then they are transpositions of each other. To **transpose** means to write or play music in some key other than the original.

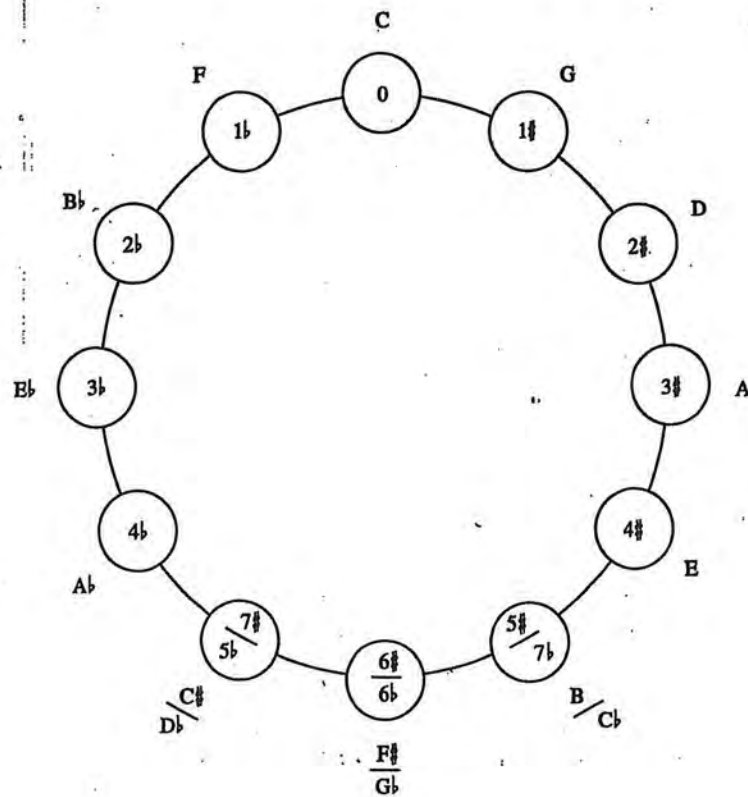
The key signatures in Examples 1-11 and 1-12 must be memorized—not only the number of accidentals involved but also their order and placement on the staff. Notice that the pattern of placing the sharps on the staff changes at the fifth sharp for both the treble and the bass clefs. Try saying aloud the order of accidentals for sharps (FCGDAEB) and for flats (BEADGCF) until you feel confident with them.

Key signatures are written in much the same way using the alto and tenor clefs as they are for treble and bass. The only exception is the placement of sharps in the tenor clef, as you can see in Example 1-13.

Example 1-13



Some people find it easier to memorize key signatures if they visualize a **circle of fifths**, which is a diagram somewhat like the face of a clock. Reading clockwise around the circle of fifths on the following page, you will see that each new key begins on 5 (the fifth scale degree) of the previous key. If you go counterclockwise, each new key begins on 4 of the previous one.



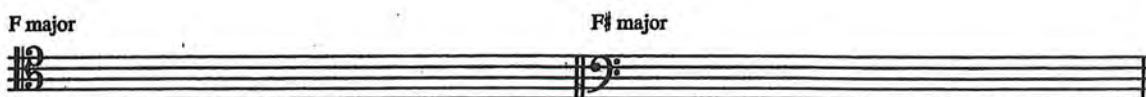
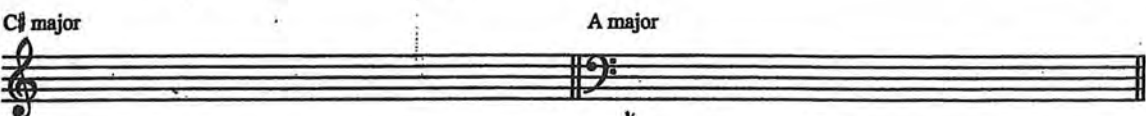
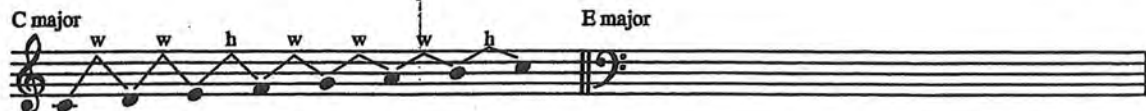
CHECKPOINT

1. Does G3 lie below or above middle C?
2. How is a double sharp notated?
3. Half steps in the major scale occur between scale degrees _____ and _____ as well as between scale degrees _____ and _____.
4. The major scale consists of two identical four-note patterns called _____.
5. What relationship can you see between the order of sharps and the order of flats?
6. Name the 15 major keys.

Self-Test 1-2

(Answers begin on page 553.)

- A. Notate the specified scales using accidentals, *not* key signatures. Show the placement of whole and half steps, as in the example.



B. Identify these major key signatures.



C. Notate the specified key signatures.



D. Fill in the blanks.

Key signature	Name of key	Key signature	Name of key
1. Three flats	_____ major	8. _____	B♭ major
2. Seven sharps	_____ major	9. One sharp	_____ major
3. _____	D major	10. Five flats	_____ major
4. One flat	_____ major	11. _____	F♯ major
5. _____	A♭ major	12. _____	C♭ major
6. _____	B major	13. Four sharps	_____ major
7. Six flats	_____ major	14. _____	A major

E. Fill in the blanks, using the example as a model.

	Major key	Key signature	Scale degree	Is this note
Ex.	C	0#/0b	3	E
1.			3	F
2.	D $\flat$		5	
3.	G			F $\sharp$
4.	B		3	
5.	A $\flat$			F
6.		7 $\flat$		F $\flat$

Exercise 1-2 See Workbook.

Minor Scales

Musicians traditionally practice and memorize three minor-scale formations, although these are a simplification of how minor keys actually work, as we will see in Chapter 4. One of these is the **natural minor scale**. You can see from the following illustration that the natural minor scale is like a major scale with lowered $\hat{3}$, $\hat{6}$, and $\hat{7}$.

C major	C	D	E	F	G	A	B	C
Scale degree	$\hat{1}$	$\hat{2}$	$\hat{3}$	$\hat{4}$	$\hat{5}$	$\hat{6}$	$\hat{7}$	$\hat{1}$
c natural minor	C	D	E $\flat$	F	G	A $\flat$	B $\flat$	C

Another minor scale type is the **harmonic minor scale**, which can be thought of as natural minor with a raised $\hat{7}$ or as major with lowered $\hat{3}$ and $\hat{6}$.

C major	C	D	E	F	G	A	B	C
Scale degree	$\hat{1}$	$\hat{2}$	$\hat{3}$	$\hat{4}$	$\hat{5}$	$\hat{6}$	$\hat{7}$	$\hat{1}$
c harmonic minor	C	D	E $\flat$	F	G	A $\flat$	B	C

The third type of minor scale is the **melodic minor scale**, which has an ascending form and a descending form. The ascending form, shown next, is like natural minor with a raised $\hat{6}$ and $\hat{7}$ or as major with lowered $\hat{3}$.

C major	C	D	E	F	G	A	B	C
Scale degree	$\hat{1}$	$\hat{2}$	$\hat{3}$	$\hat{4}$	$\hat{5}$	$\hat{6}$	$\hat{7}$	$\hat{1}$
c ascending melodic minor	C	D	E $\flat$	F	G	A	B	C

The descending form of the melodic minor scale is the same as the natural minor scale.

The three minor scale types are summarized in Example 1-14. The scale degrees that differ from the major are circled. Notice the arrows used in connection with the melodic minor scale in order to distinguish the ascending $\hat{6}$ and $\hat{7}$ from the descending $\hat{6}$ and $\hat{7}$. Also note that scale degrees $\hat{1}$ through $\hat{5}$ are identical in all three forms of the minor scale. This pattern of w-h-w-w is known as the **minor pentachord**.

Example 1-14

Natural minor



Harmonic minor



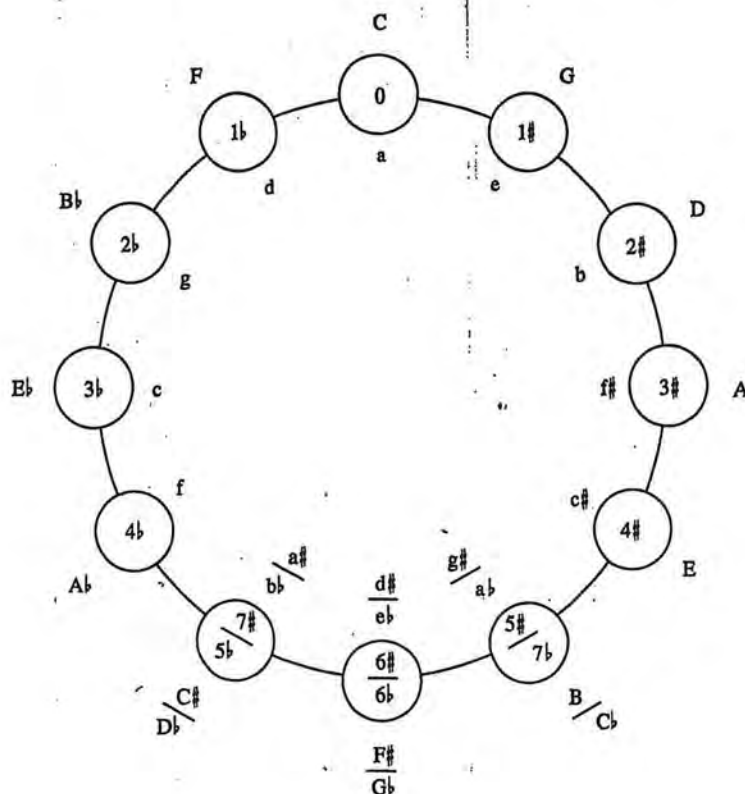
Melodic minor



Minor Key Signatures

Minor key signatures conform to the natural minor scale, no matter which minor scale type is actually in use. Looking back at Example 1-14, you can see that the natural minor scale on C requires three accidentals: B $\flat$, E $\flat$, and A $\flat$. The key signature of c minor, then, is the same as the key signature of E $\flat$ major; c minor and E $\flat$ major are said to be **relatives** because they share the same key signature. The relative major of any minor key starts on $\hat{3}$ of the minor scale, and the relative minor of any major key begins on $\hat{6}$ of the major scale. If a major scale and a minor scale share the same $\hat{1}$, as do C major and c minor, for example, they are said to be **parallel keys**. We would say that C major is the parallel major of c minor.

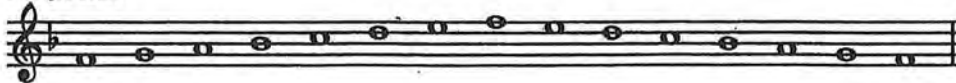
The circle of fifths is a convenient way to display the names of the minor keys and their relative majors, as well as their key signatures. In the following diagram, the names of the minor keys (in lowercase, as usual) are inside the diagram.



You may find it easier to learn the minor scales in terms of their relative majors, as in the preceding circle-of-fifths diagram, instead of in terms of their parallel majors, which is how minor scales were introduced on page 10. This will be most helpful regarding the keys of $g\sharp$, $d\sharp$, and $a\sharp$, which have no parallel major forms. If you do use the relative major approach, remember that the key signature for any minor scale conforms to the *natural* minor scale and that accidentals must be used to spell the other forms. Specifically, you have to raise $\hat{7}$ of the natural minor scale to produce the harmonic minor scale and raise $\hat{6}$ and $\hat{7}$ of the natural minor scale to get the ascending form of the melodic minor scale. Example 1-15 illustrates the spellings for the related keys of F major and d minor.

Example 1-15

F major scale



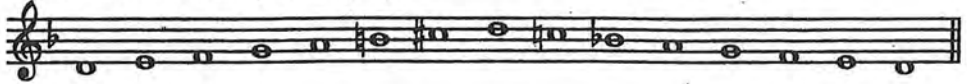
Relative minor, natural form



Harmonic minor raises 7



Melodic minor raises 6 and 7, ascending only



One final hint: a quick way to find any minor key signature other than g#, d#, or a# is to begin with the key signature of the *parallel* major and to add three flats and/or subtract three sharps. Examples:

Major key		Minor key	
B $\flat$	2 flats	b $\flat$	5 flats
E	4 sharps	e	1 sharp
D	2 sharps	d	1 flat

It is very important to practice faithfully all the major and minor scales on an instrument until they become memorized patterns. An intellectual understanding of scales cannot substitute for the secure tactile and aural familiarity that will result from those hours of practice.

Self-Test 1-3

(Answers begin on page 554.)

- A. Notate the specified scales using accidentals, *not* key signatures. The melodic minor should be written both ascending and descending.

c (natural)



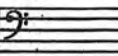
a (harmonic)



f (natural)



c# (harmonic)



e $\flat$ (melodic)



b $\flat$ (natural) g $\sharp$ (harmonic)

f $\sharp$ (melodic)

B. Identify these minor key signatures.

a minor 1 minor 2 minor 3 minor 4 minor 5 minor 6 minor 7 minor

ex.

C. Notate the specified minor key signatures.

b d g $\sharp$ c f $\sharp$ a b $\flat$ a $\sharp$

D. Fill in the blanks.

Key signature	Name of key	Key signature	Name of key
1. _____	d minor	8. Two flats	_____ minor
2. Six flats	_____ minor	9. _____	f minor
3. Four sharps	_____ minor	10. _____	b minor
4. _____	f minor	11. Three flats	_____ minor
5. Six sharps	_____ minor	12. _____	a $\flat$ minor
6. _____	b $\flat$ major	13. One sharp	_____ minor
7. _____	a $\sharp$ major	14. Five sharps	_____ minor

Exercise 1-3 See Workbook.

Scale Degree Names

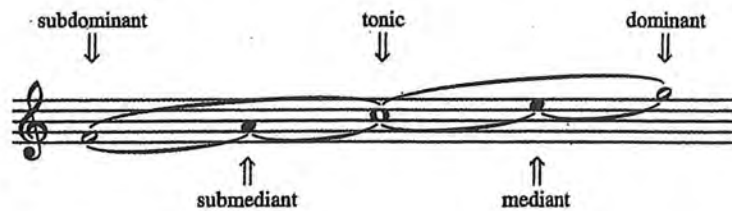
Musicians in conversation or in writing often refer to scale degrees by a set of traditional names rather than by numbers. The names are shown in Example 1-16. Notice that there are two names for $\hat{7}$ in minor, depending on whether or not it is raised.

Example 1-16



The origin of some of these names is illustrated in Example 1-17. Notice that the mediant lies halfway between the tonic and the dominant, while the submediant lies halfway between the tonic and the subdominant.

Example 1-17



CHECKPOINT

Now is the time to start learning the scale degree names, if you do not know them already. Here are a couple of exercises that will help.

1. Translate these numbers aloud to scale degree names as fast as possible. Repeat as often as necessary until speed is attained.

1 2 3 4 5 6 7 1 7 6 5 4 3 2 1

3 5 7 6 4 2 1 6 3 7 2 5 4 3 1

5 2 7 4 6 3 1 2 7 5 6 4 1 3 2

2. Call out or sing the scale degree names contained in each example that that follows.

C:

G:

d:

Intervals

An **interval** is the measurement of the distance in pitch between two notes. A **harmonic interval** results when the notes are performed at the same time, whereas a **melodic interval** occurs when the notes are played successively (Ex. 1-18). The method of measuring intervals is the same for both harmonic and melodic intervals.

Example 1-18

Harmonic intervals Melodic intervals

There are two parts to any interval name: the numerical name and the modifier that precedes the numerical name. As Example 1-19 illustrates, the numerical name is a measurement of how far apart the notes are vertically on the staff, regardless of what accidentals are involved.

Example 1-19

1 2 3 3 3 3 4 (etc.)

In talking about intervals, we use the terms **unison** instead of 1, and **octave** (8ve) instead of 8. We also say 2nd instead of "two," 3rd instead of "three," and so on. Intervals smaller than an 8ve are called **simple intervals**, whereas larger intervals (including the 8ve) are called **compound intervals**.

It is important to notice in Example 1-19 that the harmonic interval of a 2nd is notated with the top note offset a little to the right of the bottom note. Accidentals are offset in the same way for harmonic intervals of a 2nd, 3rd, or 4th, if both notes require an accidental.

Self-Test 1-4

(Answers begin on page 555.)

Provide the numerical names of the intervals by using the numbers 1 through 8.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Exercise 1-4 See Workbook.

Perfect, Major, and Minor Intervals

One way to begin learning the modifiers for intervals is by relating them to the intervals contained in the major scale, specifically the intervals from $\hat{1}$ up to the other scale degrees. This method can then be applied in any context, whether or not the major scale is actually being used.

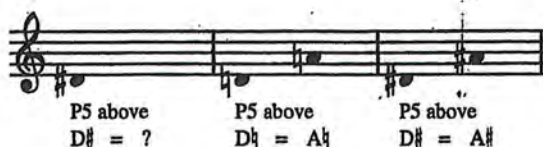
The term **perfect** (abbreviated P) is a modifier used only in connection with unisons, 4ths, 5ths, 8ves, and their compounds (11ths, and so on). As Example 1-20 illustrates, a P1, P4, P5, and P8 can all be constructed by using $\hat{1}$ in the major scale as the *bottom* note.

Example 1-20

P1 P4 P5 P8

If we want to spell one of these intervals above E_b , for example, we need only to think of scale steps $\hat{1}$, $\hat{4}$, and $\hat{5}$ of the E_b major scale. If the bottom note does not commonly serve as $\hat{1}$ of a major scale (such as $D\sharp$), remove the accidental temporarily, spell the interval, and then apply the accidental to both notes (Ex. 1-21).

Example 1-21



The modifiers **major** and **minor** (abbreviated as M and m) are used only in connection with 2nds, 3rds, 6ths, and 7ths. The intervals formed by $\hat{1}-\hat{2}$, $\hat{1}-\hat{3}$, $\hat{1}-\hat{6}$, and $\hat{1}-\hat{7}$ in the major scale are all major intervals, as Example 1-22 illustrates.

Example 1-22



If a major interval is made a half step smaller without altering its numerical name, it becomes a minor interval (Ex. 1-23). Notice that you can make an interval smaller by lowering the top note or raising the bottom note.

Example 1-23



Self-Test 1-5

(Answers begin on page 555.)

- A. All the intervals that follow are unisons, 4ths, 5ths, or 8ves. Put "P" in the space provided *only* if the interval is a perfect interval.

1 5 2 4 3 1 4 5 5 8 6 4 7 5 8 4 9 5 10 8

- B. All the intervals that follow are 2nds, 3rds, 6ths, or 7ths. Write "M" or "m" in each space, as appropriate.

1 3 2 6 3 7 4 2 5 6 6 2 7 3 8 7 9 6 10 2

- C. Notate the specified intervals above the given notes.

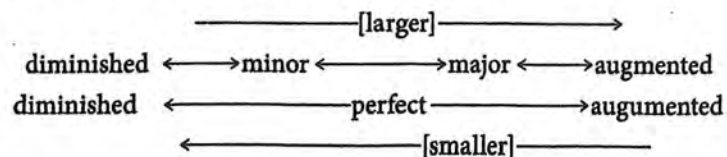
1 m2 2 P4 3 M6 4 m3 5 P5 6 m6 7 P8 8 M2 9 M7 10 P4

11 M3 12 P5 13 m7 14 m2 15 M6 16 P5 17 P8 18 M7 19 M3 20 m7

Exercise 1-5 See Workbook.

Augmented and Diminished Intervals

If a perfect or a major interval is made a half step larger without changing the numerical name, the interval becomes **augmented** (abbreviated +). If a perfect or a minor interval is made a half step smaller without changing its numerical name, it becomes **diminished** (abbreviated °). These relationships are summarized as follows:



There is no such thing as a diminished unison. Doubly augmented and doubly diminished intervals are possible, but they seldom occur. **Tritone** is a term used for the +4 or its enharmonic equivalent, the °5.

Inversion of Intervals

Descending intervals, especially large ones, are often easier to spell and identify through the use of **interval inversion**. We invert an interval by putting the bottom pitch above the top one or the reverse; for example, the interval D-A inverts to A-D. When we invert an interval, the new numerical name is always different from the old one. The new numerical name can be calculated by subtracting the old numerical name from 9.

Constant value of 9	9	9	9	9	9	9
Minus old numeric name	-2	-3	-4	-5	-6	-7
Equals new numeric name	7	6	5	4	3	2

You can see that an inverted 2nd becomes a 7th, a 3rd becomes a 6th, and so on (Ex. 1-24).

Example 1-24



The modifier also changes when an interval is inverted, with the exception of perfect intervals.

Old modifier	m	M	P	+	°
New modifier	M	m	P	°	+

As an example of the usefulness of inversion, suppose you wanted to know what note lies a m6 below G3. Invert the m6 down to a M3 up, as in Example 1-25, transpose the B3 down an 8ve, and you find that the answer is B2.

Example 1-25



Fluency with intervals, as with scales, is necessary for any serious musician and will provide a solid foundation for your further study. As you did with scales, you will benefit from finding out how various intervals sound and feel on a musical instrument.

One exercise you can do (you can think of others) is to write out the notes of the chromatic scale in random order. Include each black key twice—once as a sharped note and once as a flatted note. Then play some interval above and below each note. Work for speed, using your ear to correct yourself.

Consonant and Dissonant Harmonic Intervals

In tonal music, some harmonic intervals are considered to be consonant, whereas others are considered to be dissonant. The terms **consonant** and **dissonant** can be defined roughly as meaning pleasing to the ear and not pleasing to the ear, respectively, but these are very dependent on context. Some of the most exciting moments in tonal music involve dissonance, which is certainly not displeasing in that context, but the dissonances resolve eventually to the consonances that give them meaning. As you can imagine, this is a complex subject, and it is one with which much of this book is concerned.

For now it will suffice to say that major and minor 3rds and 6ths and perfect 5ths and 8ves are consonant. All other harmonic intervals, including all augmented and diminished intervals, are dissonant. An exception is the P4, which is considered dissonant in tonal music only when it occurs above the lowest voice (also called the bass, in both vocal and instrumental music).

CHECKPOINT

1. What is the term for an interval in which the notes are played in succession instead of simultaneously?
2. Is there such a thing as a m5? A P6?
3. A perfect interval made a half step smaller without changing its numerical name becomes _____
4. A °5 inverted becomes a _____
5. Intervals that are relatively displeasing to the ear are classified as _____

Self-Test 1-6

(Answers begin on page 555.)

- A. Most of the following intervals are either augmented or diminished. Label each interval.

1 2 3 4 5 6 7 8 9 10

B. Label what each interval becomes when it is inverted.

- | | |
|---------------------|---------------------|
| 1. P4 becomes _____ | 5. °5 becomes _____ |
| 2. M7 becomes _____ | 6. m2 becomes _____ |
| 3. +2 becomes _____ | 7. m6 becomes _____ |
| 4. M3 becomes _____ | 8. +6 becomes _____ |

C. Notate the specified interval *below* the given note. (You may find it helpful to invert the interval first in some cases.)

1. P5 2. m7 3. m3 4. M6 5. +4 6. M7 7. +5 8. m6 9. M2 10. °7

D. Label each interval in this melody (from Wagner's *Götterdämmerung*). Interval 8 is from the A5 down to the D#5.

1 2 3 4 5 6 7 8 9 10 11 12

E. Beneath each of the following harmonic intervals, indicate whether it is consonant ("c"), dissonant ("d"), or dissonant only if the bass has the bottom note of the interval ("d bass").

	1. m7	2. P1	3. P8	4. °7	5. m6
c	_____	_____	_____	_____	_____
d	_____	_____	_____	_____	_____
d bass	_____	_____	_____	_____	_____

	6. M2	7. P5	8. M3	9. +2	10. P4
c	_____	_____	_____	_____	_____
d	_____	_____	_____	_____	_____
d bass	_____	_____	_____	_____	_____

Exercise 1-6 See Workbook.

Summary

Pitch in music refers to the highness or lowness of a sound. Particular pitches are named by using the **musical alphabet**, consisting of the letters A through G, at which point the alphabet starts over. From one letter up or down to its next occurrence is called an **octave**, whereas the space from any C up to the next B is called an **octave register**. Octave registers are numbered, with the lowest C on the piano keyboard designated as C1. The C nearest the middle of the piano keyboard is called **middle C**, or C4.

Pitches are notated on the **staff**, an arrangement of five lines and four spaces that can be extended through the use of **ledger lines**. A staff always begins with one of several **clefs**, which determine exactly what pitch is represented by each line or space. A **grand staff** consists of two staves joined by a brace, with a treble clef on the top staff and a bass clef on the bottom.

The **major scale** consists of two identical tetrachords that have a particular arrangement of **whole steps** and **half steps**. Most major scales also have a **parallel minor** scale that begins on the same note but that lowers scale degrees $\hat{3}$, $\hat{6}$, and $\hat{7}$ by a half step. This form of the minor is called the **natural minor scale**. The **harmonic minor scale** lowers only scale degrees $\hat{3}$ and $\hat{6}$ of its parallel major, whereas the **melodic minor scale** lowers scale degree $\hat{3}$ when ascending and scale degrees $\hat{3}$, $\hat{6}$, and $\hat{7}$ when descending.

Every scale has an associated **key signature**, consisting of zero to seven sharps or flats arranged in a particular way on the staff. There are 15 key signatures in all, with one major and one minor scale associated with each. Major and minor keys that share the same key signature are said to be **relative keys**, whereas those that share the same starting note are called **parallel keys**. The notes of a scale are all assigned **scale degree names**, which vary only slightly between major and minor. **Enharmonic** notes or keys sound the same but are spelled differently. To **transpose** music means to play it in another key.

The difference between any two pitches is called an **interval**. A **harmonic interval** separates pitches that are sounded simultaneously, whereas a **melodic interval** separates pitches that are sounded in succession. Intervals are defined by means of a numerical name and a modifier that precedes it. These modifiers include the terms **perfect**, **major**, **minor**, **augmented**, and **diminished**. To **invert** an interval, put the lower note above the upper one (or the reverse). The numerical name and modifier of an inverted interval can be predicted using the method explained in this chapter.

Consonant intervals include major and minor 3rds and 6ths, the P5, and the P8. The P4 is usually consonant, unless it occurs above the lowest voice.

Variations



For additional review and practice, please see Chapter 1 on our website at www.mhhe.com/kostka7e.

Part I

Fundamentals

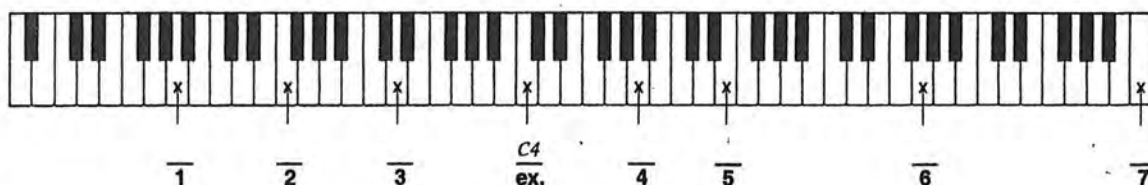
Chapter 1

Workbook
Chap. 1

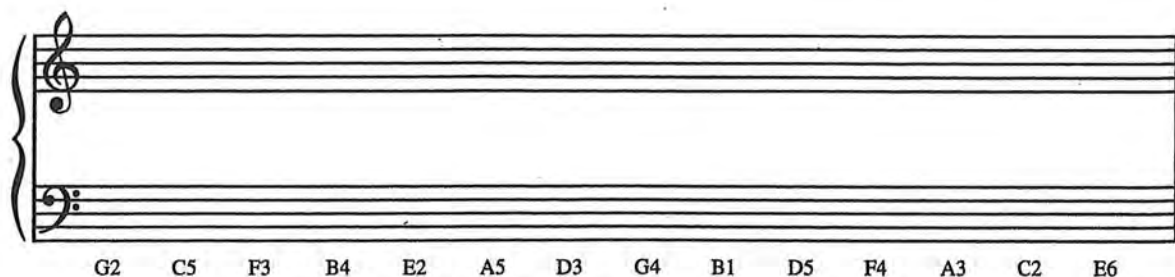
ELEMENTS OF PITCH

EXERCISE 1-1

A. Name the pitches in the blanks provided, using the correct octave register designations.



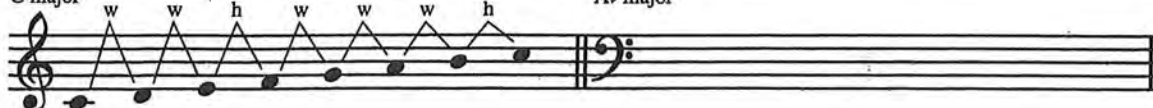
B. Notate the indicated pitches on the staff in the correct octave.



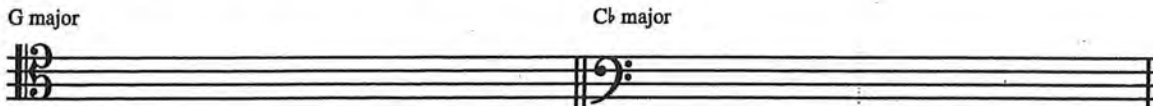
EXERCISE 1-2

- A. Notate the specified scales using accidentals, *not* key signatures. Show the placement of whole and half steps, as in the example.

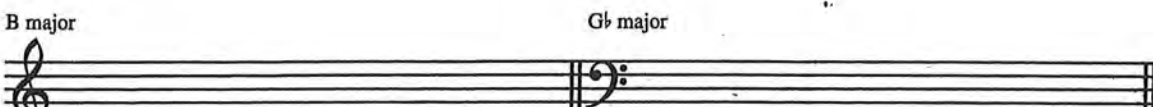
C major A $\flat$ major



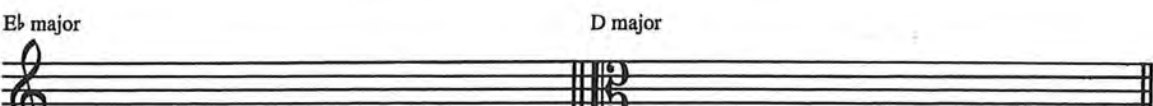
G major C $\flat$ major



B major G $\flat$ major



E $\flat$ major D major



- B. Identify these major key signatures.



C major 1 major 2 major 3 major 4 major 5 major 6 major 7 major
 ex.

- C. Notate the specified key signatures.

A $\flat$ major E major F major C major



G $\flat$ major G major E $\flat$ major C $\sharp$ major



D. Fill in the blanks.

Key signature

Name of key

Key signature

Name of key

1. _____

D $\flat$ major

8. seven flats

_____ major

2. _____

G major

9. _____

F major

3. five sharps

_____ major

10. _____

E major

4. _____

E $\flat$ major

11. two sharps

_____ major

5. two flats

_____ major

12. three flats

_____ major

6. three sharps

_____ major

13. _____

G $\flat$ major

7. _____

C $\sharp$ major

14. six sharps

_____ major

E. Fill in the blanks, using the example as a model.

	Major Key	Key Signature	Scale Degree	Is This Note
Ex.	C	0 $\sharp$ /0 $\flat$	$\hat{5}$	G
1.	E	_____	$\hat{3}$	_____
2.	_____	2 $\sharp$	_____	C $\sharp$
3.	_____	_____	$\hat{4}$	E $\flat$
4.	G $\flat$	_____	_____	E $\flat$
5.	_____	3 $\sharp$	$\hat{2}$	_____
6.	_____	6 $\sharp$	_____	C $\sharp$

EXERCISE 1-3

- A. Notate the specified scales using accidentals, not key signatures. The melodic minor should be written both ascending and descending.

c (natural) e (harmonic)

b (natural) a^b (harmonic)

g (melodic)

a[#] (natural) d (harmonic)

d[#] (melodic)

- B. Identify the type of each scale as major, natural minor, harmonic minor, or melodic minor. Any melodic minor scales will be shown in the ascending version only.

1. _____ 2. _____

3. _____ 4. _____

5. _____ 6. _____

C. Identify these minor key signatures.



ex. a minor 1 minor 2 minor 3 minor 4 minor 5 minor 6 minor 7 minor

D. Notate the specified minor key signatures.



e $\flat$ minor c $\sharp$ minor g minor a minor



e minor a $\flat$ minor d $\sharp$ minor f minor

E. Fill in the blanks.

Key signature

Name of key

1. three sharps

f $\sharp$ minor

2. _____

e $\flat$ minor

3. _____

c $\sharp$ minor

4. five flats

_____ minor

5. _____

a minor

6. four flats

_____ minor

7. seven sharps

_____ minor

Key signature

Name of key

8. _____

g minor

9. two sharps

_____ minor

10. seven flats

_____ minor

11. _____

e minor

12. one flat

_____ minor

13. _____

c minor

14. _____

g $\sharp$ minor

EXERCISE 1-4

A. Provide the numerical names of the intervals by using the numbers 1 through 8.



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

EXERCISE 1-5

A. All the following intervals are unisons, 4ths, 5ths, or octaves. Put a "P" in the space provided *only* if the interval is a perfect interval.



1 4 2 5 3 8 4 4 5 1 6 5 7 4 8 5 9 4 10 1



11 5 12 5 13 8 14 5 15 4 16 1 17 4 18 8 19 5 20 4

B. All the following intervals are 2nds, 3rds, 6ths, or 7ths. Put an "M" or an "m" in each space, as appropriate.



1 6 2 3 3 2 4 7 5 3 6 7 7 6 8 2 9 3 10 7

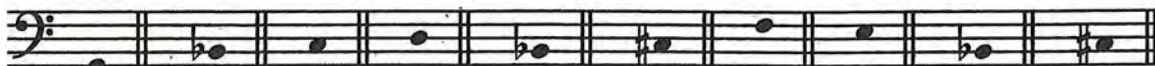


11 6 12 3 13 3 14 7 15 6 16 3 17 2 18 7 19 6 20 7



21 2 22 3 23 2 24 6 25 7 26 2 27 7 28 6 29 3 30 2

C. Notate the specified intervals above the given notes.



P4 1 m3 2 m6 3 M2 4 P4 5 P5 6 m2 7 P5 8 M7 9 m7 10



M3 11 P8 12 M6 13 m7 14 M3 15 M7 16 P8 17 P5 18 M6 19 m2 20



m3 21 M2 22 M7 23 M3 24 M6 25 m7 26 P4 27 M7 28 M6 29 m2 30



M6 31 M3 32 m3 33 M3 34 P5 35 m2 36 m6 37 m7 38 M7 39 M2 40



m6 41 M2 42 P4 43 m3 44 m7 45 P5 46 m6 47 P5 48 M7 49 m2 50



P5 51 P4 52 m3 53 m7 54 M2 55 P4 56 M6 57 m6 58 m2 59 M3 60

EXERCISE 1-6

A. Most of the intervals that follow are either augmented or diminished. Name each interval.

1 2 3 4 5 6 7 8 9 10

11 12 13 14 15 16 17 18 19 20

B. Label what each interval becomes when it is inverted.

- | | |
|---------------------|---------------------|
| 1. m3 becomes _____ | 5. M2 becomes _____ |
| 2. +5 becomes _____ | 6. +4 becomes _____ |
| 3. M6 becomes _____ | 7. P5 becomes _____ |
| 4. °7 becomes _____ | 8. m7 becomes _____ |

C. Notate the specified interval *below* the given note. (You might find it helpful to invert the interval first in some cases.)

M7 P4 m6 +2 m7 M3 +6 °5 +4 M6

1 2 3 4 5 6 7 8 9 10

m2 M3 +6 M2 °5 m3 °7 P4 +2 +4

11 12 13 14 15 16 17 18 19 20

Interval labels and measure numbers for the first two staves:

Measure	Interval
21	m7
22	P5
23	m3
24	m2
25	P4
26	M7
27	m2
28	°5
29	M2
30	+6
31	m6
32	P4
33	M3
34	P5
35	+2
36	m3
37	P5
38	°7
39	M2
40	M6

- D. Label each interval in this melody (from Wagner's *Götterdämmerung*). Interval 10 is from the F4 to the C5. Remember that an accidental remains in effect until the end of the measure, unless it is canceled.

Measure numbers for the third staff:

1 2 3 4 5 6 7 8 9

Measure numbers for the fourth staff:

10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

- E. Beneath each harmonic interval that follows, indicate whether it is consonant ("c"), dissonant ("d"), or dissonant only if the bass has the bottom note of the interval ("d bass").

	1. m3	2. M7	3. °6	4. P5	5. M6
c	_____	_____	_____	_____	_____
d	_____	_____	_____	_____	_____
d bass	_____	_____	_____	_____	_____
	6. °5	7. P4	8. P8	9. m2	10. M3
c	_____	_____	_____	_____	_____
d	_____	_____	_____	_____	_____
d bass	_____	_____	_____	_____	_____

Textbook Chapter 2

Chapter Two

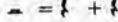
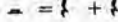
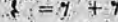
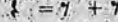
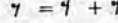
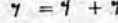
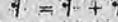
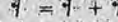
Elements of Rhythm

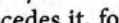
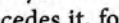
Rhythm

This chapter concerns the time aspect of music—how sounds are notated so that they will occur at a predictable moment and in a predetermined pattern. **Rhythm** is a general term used to refer to the time aspect of music, as contrasted with the pitch aspect.

Durational Symbols

Durations are notated by using symbols that are organized so that each symbol is twice the duration of the next shorter symbol and half the duration of the next longer symbol. The following table lists a number of these symbols.

Value	Note	Rest
Breve	 = 	 = 
Whole	 = 	 = 
Half	 = 	 = 
Quarter	 = 	 = 
Eighth	 = 	 = 
Sixteenth	 = 	 = 

The same series could be continued to thirty-seconds, sixty-fourths, and so on. Durations other than these must be indicated through the use of ties, dots, or other symbols. A **tie** is a curved line that connects two notes of the same pitch, creating a new duration that is equal to their sum. A **dot** following a symbol always adds to the duration one-half the value of the note, rest, or dot that precedes it, for example [ = ] and [ = ]. When notated on the staff, a dot is never placed on a staff line. If the notehead itself is on a staff line, the dot is put to the right of the note but in the space *above* it.

Beat and Tempo

The **beat** is the basic pulse of a musical passage. To determine the beat of a passage you are listening to, tap your foot to the music, or try to imagine the way a conductor would conduct the passage—the conductor's arm movement. The resulting steady pulse is called the beat, and the rate at which the beats occur is called the **tempo**.

A composer commonly specifies the tempo of a passage by one of two methods—sometimes by both. The first method uses words, often in Italian, to describe the tempo—words such as *adagio*, *moderato*, and *allegro*.

The second method is more exact because it shows precisely how many beats are to occur in the space of one minute. For example, if the desired tempo would result in 72 quarter notes in one minute, the tempo indication would be $\text{♩} = 72$ or M.M. $\text{♩} = 72$. The M.M. stands for Maelzel's metronome, after Johann Maelzel, who widely promoted the device during the early nineteenth century.

Meter

Beats tend to be grouped into patterns that are consistent throughout a passage; the pattern of beats is called the **meter**. Groups of two, three, and four beats are the most common, although other meters occur. Incidentally, a group of four beats could often also be interpreted as two groups of two beats each and vice versa. In any case, the groups of beats are called **measures** (abbreviated m. or mm.), and in notation the end of a measure is always indicated by a vertical line through the staff called a **bar line**. (A bar line also cancels any accidentals that appeared in the measure.) The words **duple**, **triple**, and **quadruple** are used to refer to the number of beats in each measure, as in **duple meter**, **triple meter**, and **quadruple meter**. These terms are summarized in the following table, along with the pattern of stresses usually found in each meter (referred to as **metric accent**).

Grouping	Meter type	Metric accent pattern
Two-beat measure	Duple	Strong-weak
Three-beat measure	Triple	Strong-weak-weak
Four-beat measure	Quadruple	Strong-weak-less strong-weak

As you might imagine, most marches are in duple meter because people have two feet, whereas contemporary popular music tends to be in duple or quadruple meter. Waltzes are always in triple meter, as are a number of traditional songs, such as "Amazing Grace" and "Scarborough Fair."

The meter of many passages is clear and easily identified, but in other cases the meter might be ambiguous. For example, sing "Take Me Out to the Ball Game" quite slowly while you tap your foot or conduct, then decide on the meter type. Now sing it again, but very fast. The first time you probably felt the meter was triple, but at a faster tempo you should have identified the meter as duple (or quadruple). Between those extreme tempos are more moderate tempos, which two listeners might interpret in different ways—one hearing a faster triple meter, the other a slower duple meter. Both listeners would be correct because identifying meter in a case such as this is a matter of interpretation rather than of right and wrong.

We use the term **hypermeter** to refer to a regular grouping of measures that is analogous to meter. Sing through "Amazing Grace," which is in triple meter, and notice how the measures form groups of four, creating a quadruple hypermeter.

Self-Test 2-1

(Answers begin on page 556.)

- A. Show how many notes or rests of the shorter duration would be required to equal the longer duration.

ex. $\text{♩} \times 2 = \text{♩}$

1. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

2. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

3. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

4. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

5. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

6. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

7. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

8. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

9. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

10. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

11. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

12. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

13. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

14. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

15. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

16. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

- B. Sing aloud each of the songs listed below. Then identify the meter type of each, using the terms *duple*, *triple*, and *quadruple*.

1. "Silent Night" (slow tempo) _____

2. "Jingle Bells" _____

3. "America the Beautiful" _____

4. "Seventy-Six Trombones" _____

5. "Home on the Range" _____

- C. Scale review. Given the key and the scale degree, supply the note name. Assume the *melodic minor* form for each minor key.

ex. $\text{f}\sharp \quad \hat{4} \quad \underline{\text{B}}$

1. $\text{D}\flat: \hat{6} \quad \underline{\hspace{1cm}}$

2. $\text{f}: \hat{3} \quad \underline{\hspace{1cm}}$

3. $\text{A}: \hat{5} \quad \underline{\hspace{1cm}}$

4. $\text{B}: \hat{3} \quad \underline{\hspace{1cm}}$

5. $\text{g}: \uparrow \hat{6} \quad \underline{\hspace{1cm}}$

6. $\text{c}\sharp: \downarrow \hat{7} \quad \underline{\hspace{1cm}}$

7. $\text{E}\flat: \hat{5} \quad \underline{\hspace{1cm}}$

8. $\text{B}\flat \quad \hat{4} \quad \underline{\hspace{1cm}}$

9. $\text{c}: \downarrow \hat{6} \quad \underline{\hspace{1cm}}$

10. $\text{e}: \hat{4} \quad \underline{\hspace{1cm}}$

11. $\text{A}\flat: \hat{7} \quad \underline{\hspace{1cm}}$

12. $\text{F}\sharp \quad \hat{2} \quad \underline{\hspace{1cm}}$

13. $\text{b}\flat: \hat{5} \quad \underline{\hspace{1cm}}$

14. $\text{E}: \hat{6} \quad \underline{\hspace{1cm}}$

15. $\text{d}: \uparrow \hat{7} \quad \underline{\hspace{1cm}}$

Exercise 2-1 See Workbook.

Division of the Beat

In most musical passages, we hear durations that are shorter than the beat. We call these shorter durations **divisions of the beat**. Beats generally divide either into two equal parts, called **simple beat**, or into three equal parts, called **compound beat**. Be careful not to confuse beat type, which refers to how the beat divides (simple or compound), with meter type, which refers to how the **measure** divides (duple, triple, or quadruple). The common beat and meter types can be combined with each other in six possible ways.

BEAT	METER		
	Duple	Triple	Quadruple
Simple	Simple duple	Simple triple	Simple quadruple
Compound	Compound duple	Compound triple	Compound quadruple

For example, sing "Take Me Out to the Ball Game" quickly in duple meter, as you did in the discussion of meter on p. 25. You can hear that the beats divide into thirds, so this is an example of compound duple. Do the same with "I Don't Know How to Love Him" (from *Jesus Christ Superstar*) or "Around Her Neck She Wore a Yellow Ribbon," and you will find that both are simple duple (or simple quadruple).

CHECKPOINT

1. How many 16th notes are in a half note?
2. Two dots following a quarter note add what durations to it?
3. What is the term that refers to the number of beats in a measure?
4. What term refers to the ways in which the beats divide?

Self-Test 2-2

(Answers begin on page 556.)

Sing aloud each of the following songs. Then identify the beat and meter types of each, using terms such as *simple duple* and so on.

1. "Auld Lang Syne" _____
2. "Pop Goes the Weasel" _____
3. "Silent Night" _____
4. "Jingle Bells" _____
5. "Seventy-Six Trombones" _____

Simple Time Signatures

A **time signature** is a symbol that tells the performer how many beats will occur in each measure, what note value will represent the beat, and whether the beat is simple or compound. A time signature for a simple beat has 2, 3, or 4 as the top number. The top number indicates the number of beats in the measure; the bottom number indicates the beat note (2 = $\frac{1}{2}$, 4 = $\frac{1}{4}$, 8 = $\frac{1}{8}$, and so on). Some typical simple time signatures are listed in the following table. Notice that time signatures are not written as fractions—there should be no line between the numbers.

Time signature	Beats per measure	Beat note	Division of the beat
$\frac{2}{4}$	2	$\frac{1}{4}$	$\frac{1}{2}$
$\frac{2}{2}$ or C	2	$\frac{1}{2}$	$\frac{1}{2}$
$\frac{3}{8}$	3	$\frac{1}{8}$	$\frac{1}{4}$
$\frac{3}{4}$	3	$\frac{1}{4}$	$\frac{1}{2}$
$\frac{4}{8}$	4	$\frac{1}{8}$	$\frac{1}{4}$
$\frac{4}{4}$ or C	4	$\frac{1}{4}$	$\frac{1}{2}$

Example 2-1 illustrates how some of the songs we have been considering might be notated. The beat values were chosen arbitrarily. "Jingle Bells," for example, could also be notated correctly in $\frac{2}{2}$ or $\frac{2}{8}$ or any other simple duple time signature.

Example 2-1

"Jingle Bells"



"America the Beautiful"



"Home on the Range"



Self-Test 2-3

(Answers begin on page 557.)

A. Fill in the blanks in the following table.

	Beat and meter type	Beat note	Division of the beat	Time signature
1.	Simple duple			
2.				$\frac{3}{8}$
3.				2
4.	Simple quadruple			
5.	Simple triple			

B. Renotate the excerpts from Example 2-1 using the specified time signatures.

- $\frac{2}{8}$ "Jingle Bells"
- $\frac{4}{2}$ "America the Beautiful"
- $\frac{3}{4}$ "Home on the Range"

Exercise 2-2 See Workbook.

Compound Time Signatures

If the beat divides into three equal parts, as in a compound beat, the note value representing the beat will be a dotted value, as shown next.

Beat note	Division of the beat
	
	
	
	

Dotted values present a problem where time signatures are concerned. For example, if there are two beats per measure, and the beat note is J. , what would the time signature be? $\frac{2}{4}$? $\frac{2}{8}$? $\frac{2}{16}$? There is no easy solution, and the method that survives today is the source of much confusion concerning compound beat. Simply stated, a compound time signature informs the musician of the *number of divisions* of the beat contained in a measure and what the *division duration* is. This means that the top number of a compound time signature will be 6, 9, or 12 because two beats times three divisions equals six, three beats times three divisions equals nine, and four beats times three divisions equals twelve. As a result, you must *divide the top number of a compound time signature by three* to find out how many beats will occur in each measure. Some examples are given in the following table.

Time signature	Beats per measure	Beat note	Division of the beat
$\frac{6}{8}$	2	J.	
$\frac{9}{8}$	3	J.	
$\frac{12}{8}$	4	J.	
$\frac{6}{16}$	2	J.	
$\frac{9}{16}$	3	J.	
$\frac{12}{16}$	4	J.	

Example 2-2 illustrates some familiar tunes that use compound beat. As before, the choice of the actual beat note is an arbitrary one.

Example 2-2

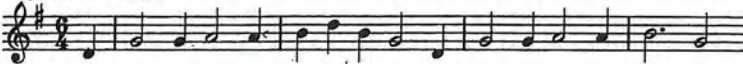
"Take Me Out to the Ball Game"



"Down in the Valley"

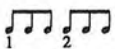
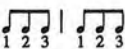


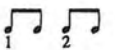
"Pop Goes the Weasel!"



You can see from this discussion that compound time signatures do *not* follow the rule, so often learned by the student musician, that "the top number tells how many beats are in a measure, and the bottom number tells what note gets the beat." Of course, there are some pieces in $\frac{6}{8}$, for example, that really do have six beats to the measure, but such a piece is not

really in compound duple. A measure of $\frac{6}{8}$ performed in six does not sound like compound duple; instead, it sounds like two measures of simple triple, or $\frac{3}{4}$. In true compound duple, the listener will hear two compound beats to the measure, not six simple beats. In the same way, a slow work notated in $\frac{7}{4}$ might be conducted in four, which would seem to the listener to be simple quadruple. In both cases, the usual division value has become the beat value.

Slow $\frac{6}{8}$  becomes $\frac{3}{4}$ 

Slow $\frac{2}{4}$  becomes $\frac{4}{8}$ 

The reverse also occurs—that is, the usual beat value sometimes becomes the actual division value. For example, a fast waltz or scherzo is almost always notated as simple triple, usually as $\frac{3}{4}$. But the aural effect is of one beat per measure, for which we might use the term **compound single**. If you didn't know the metric convention of such pieces, you would probably assume when hearing them that they were in compound duple because the measures tend to group into hypermetric pairs.

CHECKPOINT

1. What three numbers are found on the top of simple time signatures?
2. What three numbers are found on the top of compound time signatures?
3. If the top number of a compound time signature is 9, how many beats will be in the measure?

Self-Test 2-4

(Answers begin on page 557.)

A. Fill in the blanks.

Beat and meter type	Beat note	Division of the beat	Time signature
1. Compound duple			
2.			$\frac{9}{4}$
3.			6
4. Compound quadruple			
5.			9

B. Renotate the excerpts from Example 2-2 using the specified time signatures.

1. $\frac{6}{4}$ "Take Me Out to the Ball Game"
2. $\frac{9}{8}$ "Down in the Valley"
3. $\frac{6}{16}$ "Pop Goes the Weasel"

Exercise 2-3 See Workbook.

Time Signatures Summarized

There are two types of beat, simple and compound, and three common meters, duple, triple, and quadruple, which can be combined in a total of six ways. For each of these six combinations there is a number that will always appear as the *top* part of the time signature.

BEAT TYPE		METER TYPE		
		Duple	Triple	Quadruple
Simple		$\frac{2}{x}$	$\frac{3}{x}$	$\frac{4}{x}$
Compound		$\frac{6}{x}$	$\frac{9}{x}$	$\frac{12}{x}$

A listener can usually recognize the beat and meter types of a passage without seeing the music. Therefore, you can usually say what the top number of the time signature is (except that duple and quadruple are often indistinguishable). However, to know what the bottom number of the time signature is, you have to look at the music because any number representing a note value can be used for any meter.

Time signature	Simple beat duration	Compound beat duration
$\frac{x}{1}$		
$\frac{x}{2}$		
$\frac{x}{4}$		
$\frac{x}{8}$		
$\frac{x}{16}$		

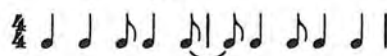
Remember that the bottom number of a time signature (the leftmost column in the preceding table) stands for the *beat* value in a *simple* time signature and the *division* value in a *compound* time signature.

More on Durational Symbols

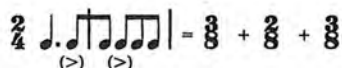
When rhythms are notated, it is customary to use rests, beams, ties, and dots in such a way that the metric accents and the individual beats are emphasized rather than obscured. Several incorrect and correct examples are notated in the following table.

Incorrect	Correct

Of course, it is correct to notate rhythms so as to obscure the metric accent when that is the desired result. **Syncopations** (rhythmic figures that stress normally weak beats or divisions) are frequently notated in that way, as shown next.



More involved figures, such as the following, are especially common in twentieth-century music.



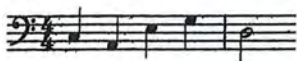
A **tuplet** refers to the division of an *undotted value* into some number of equal parts other than two, four, eight, and so on or the division of a *dotted value* into some number of equal parts other than three, six, twelve, and so on, as you can see in the following table.

Original value	Tuplet

Of all the possibilities, the superimposition of triplets on a simple beat is the most common. The note value used for a tuplet is determined by the next longer available note value. For example, a third of a quarter note is longer than a sixteenth note but shorter than an eighth note, so the eighth note is chosen to represent it.

When a single-stem note is notated on the staff, the stem should go up if the note is below the middle line and down if the note is above the middle line. A note on the middle line theoretically can have its stem point in either direction, but most professional copyists consistently put a downward stem on notes that occur on the middle line (Ex. 2-3).

Example 2-3



Beams are used to connect durations shorter than a quarter note when the durations occur within the same beat. Not all professional copyists follow the same rules for determining the stem direction of beamed notes. Our preference is to decide the direction of the stems on the basis of the note that is farthest from the middle line. That is, if the note that is farthest from the middle line is below it, all the stems that are to be beamed together will point upward (Ex. 2-4).

Example 2-4



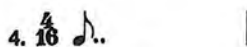
Self-Test 2-5

(Answers begin on page 558.)

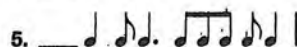
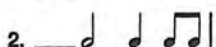
A. Fill in the blanks.

Beat and meter type	Beat note	Division of the beat	Time signature
1.			$\frac{4}{4}$
2. Compound triple			
3.			$\frac{2}{8}$
4. Compound duple			
5.			3
6.			12

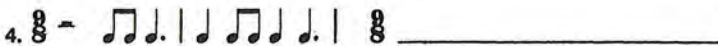
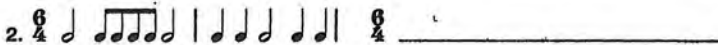
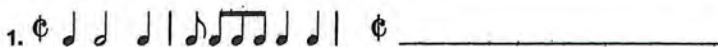
- B. Each measure below is incomplete. Add one or more rests to the end of each to complete the measure.



- C. Provide the best time signature for each exercise. In some cases more than one correct answer might be possible.



- D. Each passage that follows is notated so that placement of the beats is obscured in some fashion. Without changing the way the music will sound, rewrite each one to clarify the beat placement. This may involve breaking some of the long notes into tied shorter notes or rebeaming groups of notes.



- E. Add stems as required.

1. Each duration is a quarter note.



2. Each duration is an eighth note. Beam them in groups of three.



- F. Listen to a recording of the beginning of each of the five movements of Beethoven's Symphony no. 6, op. 68, and identify the beat and meter types of each. Then name three time signatures that *could* have been used to notate the movement.

Movement	Beat type	Meter type	Possible time signatures
I	_____	_____	_____
II	_____	_____	_____
III	_____	_____	_____
IV	_____	_____	_____
V	_____	_____	_____

- G. Scale review. Given the scale degree, the note, and whether the key is major or minor, supply the name of the key. Assume melodic minor for all minor key examples.

ex. $\uparrow \hat{6}$ is C $\sharp$ in e minor

- | | |
|--|--|
| 1. $\hat{4}$ is B $\flat$ in _____ minor | 8. $\hat{5}$ is B $\flat$ in _____ major |
| 2. $\hat{3}$ is B in _____ major | 9. $\uparrow \hat{6}$ is G $\sharp$ in _____ minor |
| 3. $\uparrow \hat{7}$ is B $\sharp$ in _____ minor | 10. $\hat{5}$ is C in _____ major |
| 4. $\hat{6}$ is F $\sharp$ in _____ major | 11. $\hat{3}$ is B $\flat$ in _____ minor |
| 5. $\hat{4}$ is E $\flat$ in _____ major | 12. $\downarrow \hat{7}$ is E in _____ minor |
| 6. $\hat{5}$ is G in _____ minor | 13. $\hat{7}$ is D $\sharp$ in _____ major |
| 7. $\hat{6}$ is B in _____ major | 14. $\hat{2}$ is B $\flat$ in _____ major |

- H. Interval review. Notate the specified interval above the given note.

1. m2 2. P4 3. P5 4. M2 5. M7 6. +6 7. M3 8. M6 9. $\circ 7$

- I. Interval review. Notate the specified interval below the given note.

1. m3 2. m6 3. $\circ 5$ 4. m7 5. P5 6. m2 7. M7 8. +2 9. P4

Exercise 2-4 See Workbook.

Summary

Rhythm refers to the time aspect of music, as contrasted with the pitch aspect. The relative duration of a musical sound is specified by a **durational symbol**, such as a whole note, half note, and so on. One or more **dots** may follow a durational symbol, each one adding to the duration one-half the value of the note or dot that precedes it; a **tie** connects two notes, creating a value equal to their sum. Most durational symbols use **stems**, and there are conventions of notation regarding the direction of the stems. **Beams** are often used to group together (but not to tie) durations shorter than a quarter note.

The basic pulse of a musical passage is called the **beat**, and the **tempo** is the rate at which the beats occur. The general tempo may be indicated by one of many terms in English or other languages, or it may be specified more exactly by a **metronome** marking.

Beats usually group into patterns of two, three, or four beats, referred to as **duple**, **triple**, and **quadruple** meters, respectively. Associated with each meter is its own pattern of **metric accents**. Beats in any meter usually divide into two equal parts (**simple beat**) or three equal parts (**compound beat**), giving rise to such terms as "triple simple" and "duple compound." A **tuplet** is used when a beat divides in a way that is contrary to the prevailing division of the beat. **Hypermeter** is the expression of a metric pattern at a higher level, as in groups of measures.

A **time signature** is a symbol that tells the performer the beat and meter types and what note value will represent the beat. A listener can identify the beat and meter types, but not the note value that represents the beat, just by listening to the music. The beat values for simple time signatures are always undotted notes, whereas those for compound time signatures are always dotted notes.

Variations



For additional review and practice, please see Chapter 2 on our website at www.mhhe.com/kostka7e.

Workbook Chap. 2

Chapter 2

ELEMENTS OF RHYTHM

EXERCISE 2-1

- A. Show how many notes or rests of the shorter duration would be required to equal the longer duration.

ex. $\text{♩} \times 2 = \text{♩}$

1. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

2. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

3. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

4. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

5. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

6. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

7. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

8. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

9. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

10. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

11. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

12. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

13. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

14. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

15. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

16. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

- B. Sing aloud each of the following songs. Then identify the meter type of each, using the terms *duple*, *triple*, and *quadruple*.

1. "Auld Lang Syne" _____

2. "Star-Spangled Banner" _____

3. "Pop Goes the Weasel" _____

4. "America" ("My Country, 'Tis of Thee") _____

5. "Swing Low, Sweet Chariot" _____

C. Scale review. Fill in the blanks, using the melodic minor for all minor-key examples.

ex. $\hat{6}$ is $F\sharp$ in A (M)

1. $\downarrow\hat{7}$ is C in _____ (m)

2. $\hat{4}$ is _____ in $c\sharp$

3. _____ is A in F

4. $\hat{5}$ is $C\sharp$ in _____ (m)

5. $\hat{2}$ is _____ in E

6. $\hat{7}$ is A in _____ (M)

7. $\downarrow\hat{6}$ is _____ in c

8. _____ is $C\sharp$ in b

9. $\hat{6}$ is C in _____ (M)

10. _____ is $F\sharp$ in g

11. $\hat{4}$ is G in _____ (M)

12. $\hat{5}$ is _____ in G

13. _____ is $A\flat$ in f

14. $\downarrow\hat{6}$ is $C\sharp$ in _____ (m)

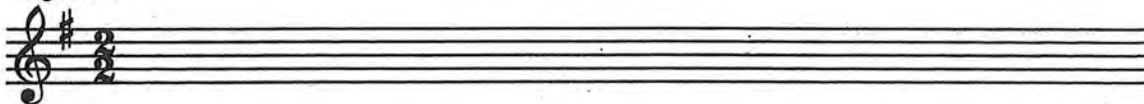
EXERCISE 2-2

A. Fill in the blanks.

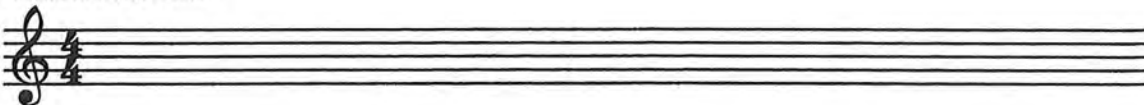
	Beat and Meter Type	Beat Note	Division of the Beat	Time Signature
1.				C
2.	Simple triple			
3.	Simple duple			
4.				2
5.	Simple quadruple			

B. Renotate the excerpts from textbook Example 2-1 using the specified time signatures.

"Jingle Bells"



"America the Beautiful"



"Home on the Range"



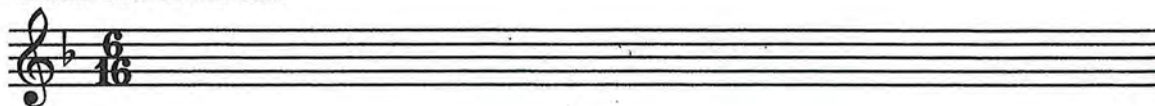
EXERCISE 2-3

A. Fill in the blanks.

	<i>Beat and Meter Type</i>	<i>Beat Note</i>	<i>Division of the Beat</i>	<i>Time Signature</i>
1.	Compound triple			
2.				6 16 12
3.				
4.	Compound duple			
5.				9

B. Renotate the excerpts from textbook Example 2-2 using the specified time signatures.

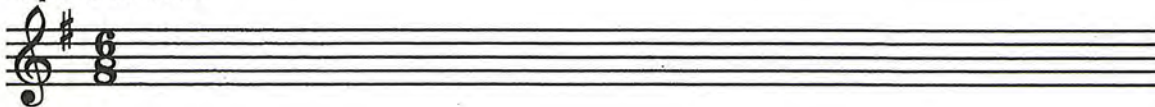
"Take Me Out to the Ball Game"



"Down in the Valley"



"Pop Goes the Weasel"



EXERCISE 2-4

A. Fill in the blanks.

	Beat and Meter Type	Beat Note	Division of the Beat	Time Signature
1.	Compound quadruple			
2.	Simple triple			
3.				4
4.				6
5.				
6.				9

B. Each measure below is incomplete. Add one or more rests to the end of each to complete the measure.

1. $\frac{6}{4}$  |
2. C  |
3. $\frac{2}{16}$  |
4. $\frac{12}{16}$  |
5. $\frac{3}{8}$  |
6. $\frac{9}{8}$  |
7. C  |
8. $\frac{9}{4}$  |
9. $\frac{3}{2}$  |
10. $\frac{12}{8}$  |
11. $\frac{4}{8}$  |
12. $\frac{6}{4}$  |

(10)

(10)

(

E. Add stems as required.

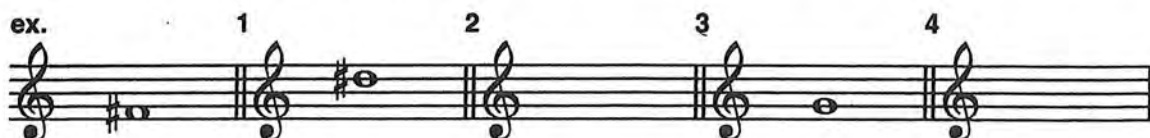
1. Each duration is a half note.



2. Each duration is a sixteenth note. Beam them in groups of four.



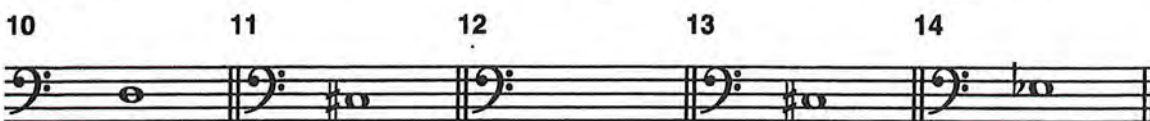
F. Scale review. Fill in the key, scale degree, or note, whichever is missing. Assume the melodic minor form for all minor keys.



D: 3 (m) $\uparrow 7$ F: 4 c: A: 2



 (m) $\uparrow 7$ d: 4 Eb: f: $\uparrow 6$ (m) $\hat{3}$

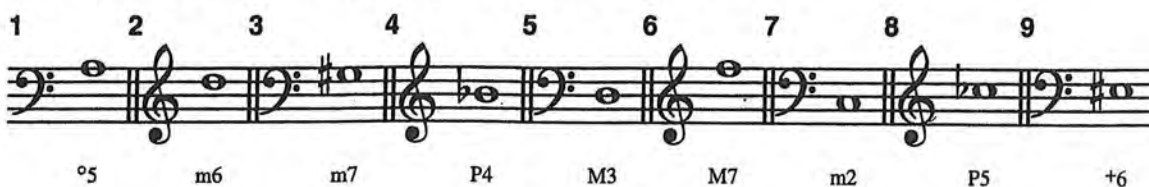


Bb: (M) $\hat{6}$ g: $\uparrow 6$ b: (M) $\hat{5}$

G. Interval review. Notate the specified interval above the given note.



H. Interval review. Notate the specified interval below the given note.



Chapter 3 Textbook

Chapter Three

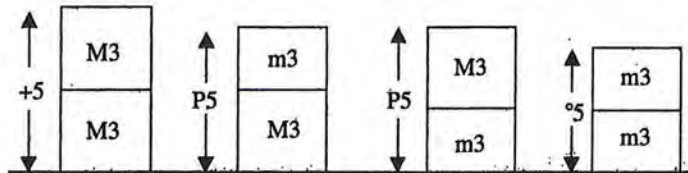
Introduction to Triads and Seventh Chords

Introduction

In this chapter we begin working with chords, the basic vocabulary of tonal harmony. We will not be concerned at this stage with how chords are used compositionally or even what kinds of chords occur in the major and minor modes, although we will encounter these topics soon enough. First we have to learn how to spell the more common chord types and how to recognize them in various contexts.

Triads

In "To the Student" (pp. xi-xiv), we explained that tonal harmony makes use of *tertian* (built of 3rds) chords. The fundamental tertian sonority is the **triad**, a three-note chord consisting of a 5th divided into two superimposed 3rds. There are four possible ways to combine major and minor 3rds to produce a tertian triad.



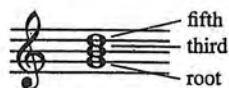
The names and abbreviations for these four triad types are given in Example 3-1.

Example 3-1



Play these triads at the piano and compare the way they sound. You might be able to guess from listening to them that in tonal music the major and minor triads are found the most often, the augmented the least often. There are also names (in addition to note names) for the members of a triad (Ex. 3-2).

Example 3-2



Study the preceding diagram and examples very carefully before going on.

CHECKPOINT

1. Which triad types contain a m3 as the bottom interval? As the top interval?
2. Which triad types contain a M3 as the top interval? As the bottom interval?
3. Which triad types contain a P5 between the root and the 5th? a °5? a +5?

Self-Test 3-1

(Answers begin on page 559.)

A. Spell the triad, given the root and the type. Major triads are indicated by an uppercase letter (G), minor by an uppercase letter followed by the letter "m" (Gm), augmented by a "+" (G+), and diminished by a "°" (G°).

- | | |
|----------------------|------------------------|
| 1. B $\flat$ m _____ | 7. A _____ |
| 2. E _____ | 8. Dm _____ |
| 3. G° _____ | 9. G $\flat$ _____ |
| 4. F° _____ | 10. B _____ |
| 5. Cm _____ | 11. A $\flat$ m _____ |
| 6. D+ _____ | 12. C $\sharp$ m _____ |

B. Notate the triad, given the root and type.

ex.	1	2	3	4	5	6	7
M	m	M	+	°	M	M	m
8	9	10	11	12	13	14	15
+	M	m	m	M	°	m	+

C. Fill in the blanks.

	ex.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Fifth	F	_____	_____	_____	D#	_____	_____	_____	_____	G#	B
Third	D	A	G $\flat$	_____	_____	_____	F#	C#	_____	_____	_____
Root	B $\flat$	_____	_____	B	_____	C $\flat$	_____	_____	F	_____	_____
Type	M	+	m	m	+	M	°	M	°	m	M

D. Given the chord quality and one member of the triad, notate the remainder of the triad, with the root as the lowest tone.

ex. 1 2 3 4 5 6 7

third + third M fifth ° root m fifth M root + fifth m third m

8 9 10 11 12 13 14 15

fifth M root ° third m fifth + root M fifth m third M third °

Exercise 3-1 See Workbook.

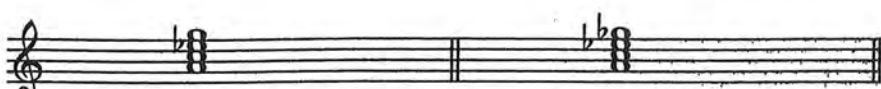
Seventh Chords

If we extend a tertian triad by adding another 3rd on top of the 5th of the triad, the result is a four-note chord. Because the interval between this added note and the root is some kind of 7th (major, minor, or diminished), chords of this sort are called **seventh chords**.

Because it would be possible to use more than one kind of 7th with each triad type, there are many more seventh-chord types than triad types. However, tonal harmony commonly makes use of only five seventh-chord types (Ex. 3-3). Below each chord in Example 3-3 you will find the commonly used name for each chord and the symbol used as an abbreviation. Be sure to play Example 3-3 to familiarize yourself with the sound of these chords.

Example 3-3

Type of chord:	major seventh	major-minor seventh	minor seventh
Symbol:	M7	Mm7	m7
Construction:	major triad major 7th	major triad minor 7th	minor triad minor 7th



The image shows two musical staves. The first staff contains a half-diminished seventh chord (Bb7) in treble clef. The second staff contains a (fully) diminished seventh chord (Bb7b9) in treble clef.

Type of chord:	half-diminished seventh	(fully) diminished seventh
Symbol:	$\flat 7$	$\flat 7^{\flat}$
Construction:	diminished triad minor 7th	diminished triad diminished 7th

Quite soon we will begin composition exercises using triads. Although seventh chords will not be used in composition exercises for some time, you will nevertheless begin to become familiar with them from an analytical standpoint through examples and analysis assignments.

CHECKPOINT

1. Which seventh-chord types have a diminished triad on the bottom?
2. Which ones have a M3 between the 5th and the 7th of the chord?
3. Which ones have a m3 between the 3rd and the 5th of the chord?
4. Which ones contain at least one P5? Which contain two?
5. Which one consists entirely of a stack of minor thirds?

Self-Test 3-2

(Answers begin on page 560.)

- A. Identify the type of each seventh chord, using the abbreviations given in Example 3-3 (M7, Mm7, m7, $\flat 7$, $\flat 7^{\flat}$).

ex. 1 2 3 4 5 6 7



The image shows 15 numbered musical staves, each containing a seventh chord. The chords are: 1. Bb7 (half-diminished), 2. Bb7b9 (fully diminished), 3. Bb7 (half-diminished), 4. Bb7 (half-diminished), 5. Bb7 (half-diminished), 6. Bb7 (half-diminished), 7. Bb7 (half-diminished), 8. Bb7 (half-diminished), 9. Bb7 (half-diminished), 10. Bb7 (half-diminished), 11. Bb7 (half-diminished), 12. Bb7 (half-diminished), 13. Bb7 (half-diminished), 14. Bb7 (half-diminished), 15. Bb7 (half-diminished). The first chord is labeled 'Mm7'.

B. Notate the seventh chord, given the root and type.

ex. 1 2 3 4 5 6 7

Mm7 ø7 Mm7 M7 Mm7 m7 ø7

8 9 10 11 12 13 14 15

ø7 M7 M7 M7 m7 m7 M7 ø7

C. Given the seventh chord quality and one member of the chord, notate the rest of the chord.

ex. 1 2 3 4 5 6 7

third of Mm7 seventh of ø7 root of Mm7 third of M7 fifth of ø7 fifth of M7 seventh of ø7 third of ø7

8 9 10 11 12 13 14 15

seventh of Mm7 root of ø7 fifth of m7 third of M7 root of ø7 seventh of ø7 fifth of m7 third of Mm7

Exercise 3-2 See Workbook.

This would be an appropriate point at which to begin work on Counterpoint Unit 1, which can be found at www.mhhe.com/kostka7e.

Inversions of Chords

Up to now, we have been notating all chords with the root as the lowest tone. However, in a musical context, any part of a chord might appear as the lowest tone. The three possible **bass positions** of the triad are illustrated in Example 3-4.

Example 3-4

The bass position that we have been using, with the root as the lowest tone (or “in the bass”), is called **root position**. You might assume that “third position” would be the term for a chord with the 3rd as the lowest tone, but musical terminology is fraught with inconsistencies. Instead, this position is called **first inversion**. Reasonably enough, **second inversion** is used for chords with the 5th in the bass. The term **inversion** is used here to mean the transfer of the lowest note to any higher octave.

Example 3-5



All the chords in Example 3-6 are F major triads in first inversion. Notice that the upper notes of the chord can be spaced in any way without altering the bass position. Also, any of the notes can be duplicated (or **doubled**) in different octaves.

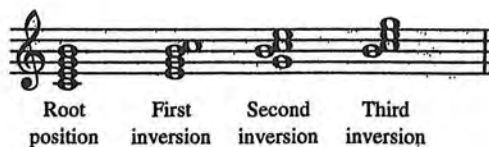
Example 3-6



(All are in first inversion)

The inversion of seventh chords works just like the inversion of triads, except that three inversions (four bass positions) are possible (Ex. 3-7).

Example 3-7



It is important to understand that the inversion of a triad or seventh chord is determined only by what member of the chord is in the *bass*; any chord members may appear in the soprano or in the other voices without changing the inversion.

Inversion Symbols and Figured Bass

In analyzing music we often use numbers to indicate the bass positions of chords. Instead of using 1 for first inversion, 2 for second inversion, and so on, we use numbers derived from the Baroque system called **figured bass** or **thoroughbass**. During the Baroque period (approximately 1600–1750), the keyboard player in an ensemble read from a part consisting only of a bass line and some symbols indicating the chord to be played above each bass note.

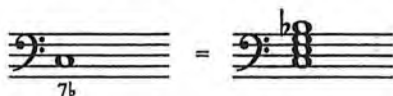
In the Baroque system, the symbols consisted basically of numbers representing intervals above the bass to be formed by the members of the chord, but the notes could actually be played in any octave above the bass. The system dealt only with intervals, not with roots of chords, because the theory of chord roots had not been devised when figured bass was first developed.

The following table illustrates the figured-bass symbols for root position and inverted triads and seventh chords for a G major triad and a G Mm 7.

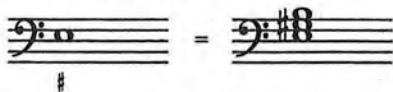
Sonority desired							
Complete figured bass symbol	5 3	6 3	6 4	7 5 3	6 5 3	6 4 3	6 4 2
Symbol most often used		6	6 4	7	6 5	4 3	4 2
How to find the root	Bass note	6th above bass	4th above bass	Bass note	6th above bass	4th above bass	2nd above bass

The Baroque keyboardist reading a figured bass followed the key signature unless told to do otherwise. So a root position triad, for example, might be major, minor, or diminished, depending upon the key signature. If the Baroque composer wanted to direct the keyboard player to raise or lower a note, several methods could be used, including the following three.

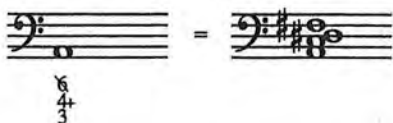
1. An accidental next to an arabic numeral in the figured bass could be used to raise or lower a note.



2. An accidental by itself always referred to the 3rd above the bass and could be used to alter that note.



3. A slash or plus sign in connection with an arabic numeral meant to raise that note.



Another symbol that you will occasionally encounter is a horizontal line, usually short, meaning to keep the same note or chord. For instance, $\frac{5}{3} \frac{6}{-}$ over a bass note means to use the same bass note for a root position triad followed by one in first inversion.

Example 3-8 illustrates a portion of an actual figured bass part from the Baroque period, along with a possible **realization** that would have been improvised by the keyboardist. Some keyboard players may have added embellishments not shown in this realization. Bach included the numeral 5 at several places to remind the player to play a root position triad.

Example 3-8 Bach, *Easter Oratorio*, II.

The realization of figured basses is still considered to be an effective way to learn certain aspects of tonal composition, and we will occasionally use exercises of this kind in the text.

A few figured-bass symbols have been adopted for use in harmonic analysis. We call these **bass-position symbols** to distinguish them from figured bass, which is not the same thing. Bass-position symbols are usually used with a roman numeral (as in I^6 or V_5^6) as part of a harmonic analysis. (Roman-numeral analysis is explained in the next chapter.) Notice that when a seventh chord is inverted, the 7 is replaced by the appropriate bass-position symbol.

Bass position	Triad symbol	Seventh chord symbol
Root position	(none)	7
Root position	6	$\frac{6}{5}$
Second inversion	$\frac{6}{4}$	$\frac{4}{3}$
Third inversion	(none)	$\frac{4}{2}$ (or 2)

Lead-Sheet Symbols

There are some intriguing parallels and contrasts between the figured-bass system of the seventeenth and eighteenth centuries and the lead-sheet symbols (sometimes called pop symbols) developed for use with jazz and other types of popular music in the twentieth and twenty-first centuries. Both facilitated the notation process and served to provide sufficient information to allow the performer to improvise within certain bounds. However, whereas the figured-bass system provided the bass line with symbols indicating the chords

that were to be constructed *above* it, lead-sheet symbols appear along with a melody and indicate the chords that are to be constructed *below*.

Example 3-9 illustrates some **lead-sheet symbols** for the nine chord types that we have studied so far, along with some commonly used alternatives. Other chords and alternate symbols can be found in Appendix B in the back of this book.

Example 3-9

The list of symbols in Example 3-9 is incomplete because there are some chords that will be introduced in later chapters. A special case is the chord with an added sixth, as in C6, which calls for a triad with an added note a M6 above the root. Also, lead-sheet symbols will occasionally specify a particular bass note, as in C/G, which calls for a C major triad over a G in the bass—a triad in second inversion. This is called slash-chord notation. Finally, you may discover that lead-sheet symbols frequently differ from one edition to the next because editors and arrangers routinely make substitutions, simplifying or complicating the harmony as they see fit.

The top staff of Example 3-10 is from the beginning of a typical American “standard” ballad, and it uses five of the chord types seen in Example 3-9. The bottom staff shows the chords in close position, but they would be voiced differently by a jazz pianist. Notice that the ♭ in F#m7b5 does not literally mean to flat the fifth of the chord, but to lower it a half step—in this case from C# to C.



DISC 1: TRACK 1

Example 3-10 Kosma, “Autumn Leaves”

Lead-sheet symbols can be a very helpful first step toward a harmonic analysis, and we will occasionally give you practice with them in self-tests and exercises.

Self-Test 3-3

(Answers begin on page 561.)

A. Identify the root and type of each chord, and show the correct bass-position symbol (Bps).

	ex.	ex.	1	2	3	4	5	6
Root	F	Bb	—	—	—	—	—	—
Type	M	Mm7	—	—	—	—	—	—
Bps	—	$\frac{6}{5}$	—	—	—	—	—	—

	7	8	9	10	11	12	13	14
Root	—	—	—	—	—	—	—	—
Type	—	—	—	—	—	—	—	—
Bps	—	—	—	—	—	—	—	—

B. The bottom staff of this recitative is played on bassoon and keyboard, the keyboard player (the "continuo") realizing the figured bass. Fill in each blank below the bass line with the lead-sheet symbol of the chord to be played at that point, using slash-chord notation for inverted chords, as in the example. Remember that a numeral 5 by itself is simply a reminder to use a root position triad.

Bach, *Easter Oratorio*, II



DISC 1: TRACK 2

Bass	
Bassoon Continuo	
	$\frac{D/F\sharp}{\text{ex.}}$ 1 2

3

lebt, und un-ser Herz, so erst in Trau-rig-keit zer-flos-sen und ge-schwebt, ver-gisst den Schmerz und

6 5 1/2 6 5 3 6 4/2

6

sinnt auf Freu-den-lie-der; denn un-ser Hei-land le-bet wie-der.

5 6 6 #

- C. Notate on the bottom staff the chords indicated by the lead-sheet symbols. Notate all chords in root position unless the symbol calls for an inversion. A 6 after a chord symbol means to add a note a M6 above the root.

Hendricks and Adderley, "Sermonette"



DISC 1: TRACK 3

F F6 D7b5/F# C/G

I heard me a Ser-mon-ette, have you heard it yet

4 C7 Am/C A7/C# Dm F/A Bb Am7 Gm7 F#dim7 G G7 C7

with that soul-ful mes-sage that you won't soon for-get?

Exercise 3-3 See Workbook.

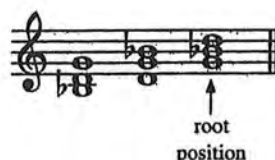
Recognizing Chords in Various Textures

Some students, especially those without much keyboard experience, find it difficult at first to analyze a chord that is distributed over two or more staves, as in Example 3-11.

Example 3-11



Example 3-12



One procedure to follow with the chord is to make an inventory of all the **pitch classes*** found in the chord (Bb, G, and D) and to notate the chord with each pitch class in turn as the lowest note. The other notes should be put as close to the bottom note as possible. The version that consists only of stacked 3rds is in root position. We can see from Example 3-12 that the chord in Example 3-11 is a g minor triad in first inversion.

The chord in Example 3-13 contains the pitch classes E, A, C#, and G, allowing four bass positions.

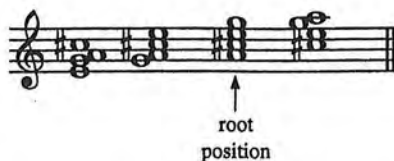
Example 3-13



Example 3-14 tells us that the chord in Example 3-13 is an A major-minor seventh chord in second inversion.

* The term *pitch class* is used to group together all pitches that have an identical sound or that are identical except for the octave or octaves that separate them. For example, all Bbs, Cs and Dbs belong to the same pitch class, no matter what octave they are found in.

Example 3-14



You might already be able to carry out this process in your head, which will speed things up considerably. If not, you will learn to do so with practice.

CHECKPOINT

1. What is the symbol for the first inversion of a triad? Of a seventh chord?
2. Explain $\frac{4}{2}$, $\frac{6}{4}$, and $\frac{4}{3}$.
3. Which bass position for which chord type requires no symbol?

Self-Test 3-4

(Answers begin on page 562.)

- A. Label each chord with an appropriate lead-sheet symbol in the space above the chord. Use slash-chord notation for inverted chords. All of the notes in each exercise belong to the same chord.

1	2	3	4	5	6	7	8	9	10	11	12	13
----------	----------	----------	----------	----------	----------	----------	----------	----------	-----------	-----------	-----------	-----------

A musical score for the song 'The Rose Tree'. It features a treble and bass staff. The treble staff begins with a treble clef, a key signature of one sharp (F#), and a common time signature (C). The melody is written in a simple, folk-like style. The bass staff begins with a bass clef and a common time signature (C). The accompaniment is written in a simple, folk-like style. The score is for a single system of music.

	Root	Type	Bps
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____
9	_____	_____	_____
10	_____	_____	_____
11	_____	_____	_____
12	_____	_____	_____
13	_____	_____	_____
14	_____	_____	_____
15	_____	_____	_____
16	_____	_____	_____
17	_____	_____	_____
18	_____	_____	_____
19	_____	_____	_____
20	_____	_____	_____
21	_____	_____	_____
22	_____	_____	_____
23	_____	_____	_____
24	_____	_____	_____
25	_____	_____	_____
26	_____	_____	_____
27	_____	_____	_____
28	_____	_____	_____
29	_____	_____	_____
30	_____	_____	_____
31	_____	_____	_____
32	_____	_____	_____
33	_____	_____	_____
34	_____	_____	_____
35	_____	_____	_____
36	_____	_____	_____
37	_____	_____	_____
38	_____	_____	_____
39	_____	_____	_____
40	_____	_____	_____
41	_____	_____	_____
42	_____	_____	_____
43	_____	_____	_____
44	_____	_____	_____
45	_____	_____	_____
46	_____	_____	_____
47	_____	_____	_____
48	_____	_____	_____
49	_____	_____	_____
50	_____	_____	_____
51	_____	_____	_____
52	_____	_____	_____
53	_____	_____	_____
54	_____	_____	_____
55	_____	_____	_____
56	_____	_____	_____
57	_____	_____	_____
58	_____	_____	_____
59	_____	_____	_____
60	_____	_____	_____
61	_____	_____	_____
62	_____	_____	_____
63	_____	_____	_____
64	_____	_____	_____
65	_____	_____	_____
66	_____	_____	_____
67	_____	_____	_____
68	_____	_____	_____
69	_____	_____	_____
70	_____	_____	_____
71	_____	_____	_____
72	_____	_____	_____
73	_____	_____	_____
74	_____	_____	_____
75	_____	_____	_____
76	_____	_____	_____
77	_____	_____	_____
78	_____	_____	_____
79	_____	_____	_____
80	_____	_____	_____
81	_____	_____	_____
82	_____	_____	_____
83	_____	_____	_____
84	_____	_____	_____
85	_____	_____	_____
86	_____	_____	_____
87	_____	_____	_____
88	_____	_____	_____
89	_____	_____	_____
90	_____	_____	_____
91	_____	_____	_____
92	_____	_____	_____
93	_____	_____	_____
94	_____	_____	_____
95	_____	_____	_____
96	_____	_____	_____
97	_____	_____	_____
98	_____	_____	_____
99	_____	_____	_____
100	_____	_____	_____



2. Byrd, *Psalm LIV*

S 1 2 3 4 5 6 7

Be - hold, God is my help - er:

A Be - hold, God is my help - er:

T Be - hold, God is my help - er:

B Be - hold, God is my help - er:

Be - hold, God is my help - er:

Root	_____	_____	_____	_____	_____	_____
Type	_____	_____	_____	_____	_____	_____
Bps	_____	_____	_____	_____	_____	_____



DISC 1 : TRACK 3

3. Schumann, *Wiegenliedchen*, op. 124, no. 6

(Note: Chord 14 is missing an A.)

1 2 3 4 5 6 7

Root _____

Type _____

Bps _____

8 9 10 11 12 13 14 15

C. Time signature review. Fill in the blanks.

	Beat and meter type	Beat note	Division of the beat	Time signature
1.	Compound duple			
2.				$\frac{2}{2}$
3.				4
4.				12

Exercise 3-4 See Workbook.

Summary

The fundamental sonority of tonal harmony is the **triad**, a three-note chord consisting of a 5th divided into two superimposed 3rds. The bottom note of the 5th is the **root**, and the top note is the **5th**. The note that divides the 5th is the **3rd**. There are four triad types: **major**, **minor**, **diminished**, and **augmented**.

A **seventh chord** may be thought of as a triad with another 3rd added above the 5th of the triad. The added note is a 7th above the root. Although many seventh chord types are possible, only five occur with any frequency in tonal harmony:

major seventh chord (M7): major triad with a M7 above the root

major-minor seventh chord (Mm7): major triad with a m7 above the root

minor seventh chord (m7): minor triad with a m7 above the root

half-diminished seventh chord ($\flat 7$): diminished triad with a m7 above the root

diminished seventh chord ($\flat \flat 7$): diminished triad with a $\flat \flat 7$ above the root

Root position is the term for a chord with the root notated as the lowest tone. Any other arrangement is called an **inversion**. A chord with the 3rd as the lowest tone is in **first inversion**, whereas one with the 5th as the lowest tone is in **second inversion**. A seventh chord with the 7th as the lowest tone is in **third inversion**. There are symbols for most of the various bass positions:

Bass position	Triad symbol	Seventh-chord symbol	Bass note
Root position	none	7	root
First inversion	6	$\begin{smallmatrix} 6 \\ 5 \end{smallmatrix}$	third
Second inversion	$\begin{smallmatrix} 6 \\ 4 \end{smallmatrix}$	$\begin{smallmatrix} 4 \\ 3 \end{smallmatrix}$	fifth
Third inversion	n/a	$\begin{smallmatrix} 4 \\ 2 \end{smallmatrix}$	seventh

Inversion symbols are derived from **figured bass**, a method of abbreviated notation used in the Baroque era. **Lead-sheet symbols** are used in jazz and most popular music to indicate chords to be played under a given melody. Both figured-bass symbols and lead-sheet (pop) symbols will be used occasionally throughout much of this text.

Variations



For additional review and practice, please see Chapter 3 on our website at www.mhhe.com/kostka7e.

chapter 3 workbook

Chapter 3

INTRODUCTION TO TRIADS AND SEVENTH CHORDS

EXERCISE 3-1

A. Spell the triad, given the root and the type. Major triads are indicated by an uppercase letter (G), minor by an uppercase letter followed by the letter "m" (Gm), augmented by a "+" (G+), and diminished by a "°" (G°).

- | | | | |
|-------------|-------------|--------------|---------------|
| 1. Gm _____ | 4. A° _____ | 7. C+ _____ | 10. F#m _____ |
| 2. E♭ _____ | 5. Fm _____ | 8. A#° _____ | 11. B+ _____ |
| 3. D° _____ | 6. D♭ _____ | 9. E _____ | 12. E♭m _____ |

B. Notate the triad, given the root and the type.

ex. 1 2 3 4 5 6 7

m M ° M + m m °

8 9 10 11 12 13 14 15

m + M M m ° M m

16 17 18 19 20 21 22 23

M ° m M + m + °

24 25 26 27 28 29 30 31

M m m ° M ° m M

C. Fill in the blanks.

	ex.	1	2	3	4	5	6	7	8	9	10
5th:	G [#]	A ^b	—	F [#]	—	—	—	—	—	B	—
3rd:	E	—	—	—	—	E ^b	—	—	B ^b	—	A
Root:	C [#]	—	D	—	A ^b	—	G [#]	E ^b	—	—	—
Type:	m	M	+	m	m	°	m	M	+	m	°

D. Given the chord quality and one member of the triad, notate the remainder of the triad.

ex. 1 2 3 4 5 6 7

5th M 3rd M 3rd + 5th m root M 3rd m 5th ° 3rd m

8 9 10 11 12 13 14 15

3rd ° 5th M root m 5th + 3rd m 3rd M root ° 5th M

16 17 18 19 20 21 22 23

5th M 3rd m root + 5th m 3rd M 5th ° root M 3rd m

24 25 26 27 28 29 30 31

root ° 3rd M 5th + 3rd m root M 3rd + 5th m 5th °

EXERCISE 3-2

A. Identify the type of seventh chord, using the abbreviations given in Example 3-3.

ex. 1 2 3 4 5 6 7

Mm7 _____

8 9 10 11 12 13 14 15

B. Notate the seventh chord, given the root and type.

ex. 1 2 3 4 5 6 7

M7 Mm7 M7 °7 Mm7 M7 °7 Mm7

8 9 10 11 12 13 14 15

°7 m7 °7 m7 °7 m7 Mm7 °7

C. Given the seventh-chord quality and one member of the chord, notate the rest of the chord.

ex. 1 2 3 4 5 6 7

5th 7th 3rd 5th 5th 3rd 7th root
m7 M7 m7 °7 m7 Mm7 °7 M7

8 9 10 11 12 13 14 15

7th root 3rd 3rd 5th root 7th 5th
°7 Mm7 M7 m7 °7 m7 °7 °7

EXERCISE 3-3

- A. Identify the root and type of each chord and show the correct bass-position symbol (Bps).

	1	2	3	4	5	6	7	8
								
Root	—	—	—	—	—	—	—	—
Type	—	—	—	—	—	—	—	—
Bps	—	—	—	—	—	—	—	—

	9	10	11	12	13	14	15	16
								
Root	—	—	—	—	—	—	—	—
Type	—	—	—	—	—	—	—	—
Bps	—	—	—	—	—	—	—	—

- B. Fill in the blanks below each figured bass with the lead-sheet symbol of the chord that would be played at the corresponding point in the excerpt. Use slash-chord notation, as in C/E, for inverted chords. The figures 5 and $\bar{5}$ both mean to use a root position triad.

1. Bach, "Gott lebet noch" (adapted)

				$\bar{4}$	$\frac{4}{2}$	6	6	6	7	
										
	1	2	3	4	5	6	7	8	9	10

2. Bach, "Dich bet' ich an, mein höchster Gott"

(The first C#3 in the bass is not to be harmonized.)

		7	$\bar{7}$	6	$\bar{5}$		$\frac{4}{2}$	6	$\bar{5}$	#	
											
	1	2	3	4	5	6	7	8	9	10	11

3. Corelli, Sonata V, op. 2, Sarabande

6 6 5 6 5 6 6

1 2 3 4 5 6 7 8 9 10 11 12 13 14

7 6 7b 6 6 7

15 16 17 18 19 20 21 22 23 24 25 26 27

6 7b 6 5 6 b

28 29 30 31 32 33 34 35 36 37 38 39 40

C. Notate using half notes on the bottom staff the chords indicated by the lead-sheet symbols. Notate all chords in root position.



Terry, "Serenade to a Bus Seat"

Bb Bdim7 Am7b5 D7 Gm7 C7 F

EXERCISE 3-4

- A. Label each chord with an appropriate lead-sheet symbol in the space above the chord. Use slash-chord notation for inverted chords. All the notes in each exercise belong to the same chord.

1 2 3 4

5 6 7 8 9

- B. Provide the root, type, and bass-position symbol (Bps) for each chord in the following excerpts. Each chord is numbered. Put your analysis of the chords in the blanks below each excerpt.



3-4_B1.mp3

1. Bach, "Wer weiss, wie nahe mir mein Ende"

Root	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Type	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Bps	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

Root	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Type	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Bps	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34



2. Schumann, "Ich will meine Seele tauchen," op. 48, no. 5

3-4_B2.mp3

Leise

p

The first system of the musical score for Schumann's "Ich will meine Seele tauchen," op. 48, no. 5. It features a vocal line in treble clef and a piano accompaniment in grand staff (treble and bass clefs). The key signature is D major (two sharps) and the time signature is 2/4. The vocal line begins with the lyrics "Ich will mei - ne See - le tau - chen in den". The piano accompaniment consists of a steady eighth-note pattern in the right hand and a similar pattern in the left hand, with some chords.

Root	_____	_____	_____	_____
Type	_____	_____	_____	_____
Bps	1	2	3	4

The second system of the musical score. The vocal line continues with the lyrics "Kelch der Li - lie hin - ein, die". The piano accompaniment continues with the same eighth-note pattern and chords as the first system.

Root	_____	_____	_____	_____
Type	_____	_____	_____	_____
Bps	5	6	7	8

5

Li - lie soll klin - gend hau - chen ein

Root	___	___	___	___
Type	___	___	___	___
Bps	9	10	11	12

Lied von der Lieb - sten mein. Das

Root	___	___	___	___	___	___	___
Type	___	___	___	___	___	___	___
Bps	13	14	15	16	17	18	19



3. Gottschalk, "Jerusalem"

3-4_B3.mp3

Root	_____	_____	_____	_____
Type	_____	_____	_____	_____
Bps	1	2	3	4

Root	_____	_____	_____	_____	_____
Type	_____	_____	_____	_____	_____
Bps	5	6	7	8	9

C. Time signature review. Fill in the blanks.

	<i>Beat and Meter Type</i>	<i>Beat Note</i>	<i>Division of the Beat</i>	<i>Time Signature</i>
1.	Simple triple			
2.				9
3.				6
4.				4 16

All Textbook Answers

Appendix D Chap. 1-2-3

Answers to Self-Tests

The answers given in certain kinds of Self-Test problems must be considered to be suggested solutions because more than one correct answer might be possible. When you have questions, consult your teacher.

Chapter One

SELF-TEST 1-1

Part A, p. 3.

1. C1 2. E2 3. F3 4. B4 5. A5 6. G6 7. D7

Part B, p. 3.

F4 B5 A4 A3 G2 D4 C4 G3 B4 C4 D3 F4

E4 A2 F3 C6 B3 G4 B2 E5 D3 C4 B1 G3 D5 F2 D4

or

SELF-TEST 1-2

Part A, pp. 8–9.

C major

E major

D $\flat$ major

B $\flat$ major

C $\sharp$ major

A major

F major

F $\sharp$ major

Part B, p. 9.

1. A $\flat$ 2. E 3. F 4. E $\flat$ 5. G 6. G $\flat$ 7. C $\sharp$

Part C, p. 9.

A major D $\flat$ major F $\sharp$ major B $\flat$ major B major C $\flat$ major D major C major

Part D, p. 9.

- | | | | | |
|----------------|-----------------|---------------|------------------|---------------|
| 1. E $\flat$ | 2. C $\sharp$ | 3. two sharps | 4. F | 5. four flats |
| 6. five sharps | 7. G $\flat$ | 8. two flats | 9. G | 10. D $\flat$ |
| 11. six sharps | 12. seven flats | 13. E | 14. three sharps | |

Part D, p. 14.

- | | | | | |
|---------------|-----------------|--------------|-----------------|----------------|
| 1. one flat | 2. $e\flat$ | 3. $c\sharp$ | 4. three sharps | 5. $d\sharp$ |
| 6. five flats | 7. seven sharps | 8. g | 9. four flats | 10. two sharps |
| 11. c | 12. seven flats | 13. e | 14. $g\sharp$ | |

SELF-TEST 1-4

p. 17.

- | | | | | |
|-------|-------|-------|-------|-------|
| 1. 2 | 2. 5 | 3. 7 | 4. 1 | 5. 3 |
| 6. 4 | 7. 8 | 8. 6 | 9. 4 | 10. 2 |
| 11. 6 | 12. 7 | 13. 8 | 14. 3 | 15. 5 |

SELF-TEST 1-5

Part A, p. 19.

All are "P" except nos. 4 and 7.

Part B, p. 19.

- | | | | | |
|------|------|------|------|-------|
| 1. M | 2. m | 3. m | 4. M | 5. m |
| 6. m | 7. m | 8. M | 9. M | 10. m |

Part C, p. 19.

$\frac{m2}{1}$	$\frac{P4}{2}$	$\frac{M6}{3}$	$\frac{m3}{4}$	$\frac{P5}{5}$	$\frac{m6}{6}$	$\frac{P8}{7}$	$\frac{M2}{8}$	$\frac{M7}{9}$	$\frac{P4}{10}$
$\frac{M3}{11}$	$\frac{P5}{12}$	$\frac{m7}{13}$	$\frac{m2}{14}$	$\frac{M6}{15}$	$\frac{P5}{16}$	$\frac{P8}{17}$	$\frac{M7}{18}$	$\frac{M3}{19}$	$\frac{m7}{20}$

SELF-TEST 1-6

Part A, p. 21.

- | | | | | |
|---------|----------------|----------------|----------------|----------|
| 1. $+5$ | 2. $^{\circ}7$ | 3. M3 | 4. $^{\circ}4$ | 5. $+2$ |
| 6. m7 | 7. $^{\circ}5$ | 8. $^{\circ}3$ | 9. $+6$ | 10. $+4$ |

Part B, p. 22.

- | | | | | |
|-------|-------|----------------|-------|---------|
| 1. P5 | 2. m2 | 3. $^{\circ}7$ | 4. m6 | 5. $+4$ |
| 6. M7 | 7. M3 | 8. $^{\circ}3$ | | |

Part C, p. 22.

$\frac{P5}{1}$ $\frac{m7}{2}$ $\frac{m3}{3}$ $\frac{M6}{4}$ $\frac{+4}{5}$ $\frac{M7}{6}$ $\frac{+5}{7}$ $\frac{m6}{8}$ $\frac{M2}{9}$ $\frac{^{\circ}7}{10}$

Part D, p. 22.

- | | | | | |
|--------|--------|-------|-------|--------|
| 1. m3 | 2. P1 | 3. m6 | 4. P8 | 5. M3 |
| 6. P4 | 7. m3 | 8. °5 | 9. m2 | 10. +1 |
| 11. m2 | 12. M7 | | | |

Part E, p. 22.

1. d 2. c 3. c 4. d 5. c 6. d 7. c 8. c 9. d 10. d bass

Chapter Two

SELF-TEST 2-1

Part A, p. 26.

- | | | | | | |
|-------|-------|-------|--------|-------|-------|
| 1. 2 | 2. 4 | 3. 3 | 4. 8 | 5. 4 | 6. 3 |
| 7. 4 | 8. 7 | 9. 5 | 10. 6 | 11. 2 | 12. 4 |
| 13. 8 | 14. 4 | 15. 2 | 16. 12 | | |

Part B, p. 26.

1. triple 2. duple (or quadruple) 3. quadruple (or duple)
4. duple (or quadruple) 5. triple

Part C, p. 26.

- | | | | | |
|--------------|----------------|--------------|----------------|----------------|
| 1. B $\flat$ | 2. A $\flat$ | 3. E | 4. D $\sharp$ | 5. E |
| 6. B | 7. B $\flat$ | 8. E $\flat$ | 9. A $\flat$ | 10. A |
| 11. G | 12. G $\sharp$ | 13. F | 14. C $\sharp$ | 15. C $\sharp$ |

SELF-TEST 2-2

p. 27.

1. simple quadruple (or simple duple)
2. compound duple (or compound quadruple)
3. simple triple
4. simple duple (or simple quadruple)
5. compound duple (or compound quadruple)

SELF-TEST 2-3

Part A, p. 29.

1. ; $\frac{3}{8}$

2. simple triple; ;

3. simple duple; ; $\frac{3}{8}$

4. ; $\frac{3}{8}$

5. ; $\frac{3}{8}$

Part B, p. 29.

1.



2.



3.



SELF-TEST 2-4

Part A, p. 31.

1. ; $\frac{3}{8}$

2. compound triple; ;

3. compound duple; ; $\frac{3}{8}$

4. ; $\frac{3}{8}$

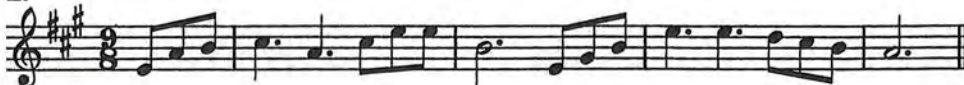
5. compound triple; ; $\frac{3}{8}$

Part B, p. 32.

1.



2.



3.



SELF-TEST 2-5

Part A, p. 34.

1. simple quadruple; $\text{♩}; \text{♩♩}$ 2. $\text{♩♩}; \text{♩}$ 3. simple duple; $\text{♩}; \text{♩♩}$
4. $\text{♩}; \text{♩}$ 5. simple triple; $\text{♩}; \text{♩♩}$ 6. compound quadruple; $\text{♩}; \text{♩♩}$

Part B, p. 35.

1. η 2. γ (or $\gamma\eta$) 3. $\gamma\lambda$ (or $\gamma\lambda\gamma$) 4. η 5. η 6. $\lambda\lambda$ (or λ)

Notice that $\sim$ would not be a good answer for no. 3 because this rest would obscure the beats in the measure (see p. 33).

Part C, p. 35.

1. $\frac{9}{4}$ 2. $\frac{4}{4}$ or $\frac{2}{2}$ or C or c 3. $\frac{8}{8}$ 4. $\frac{6}{16}$ 5. $\frac{12}{8}$ 6. same as no. 2

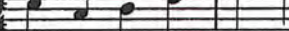
Part D, p. 35.

1. C  3. $\frac{4}{8}$ 

(The syncopation in m. 1 is very common and might well appear as)

2. $\frac{6}{4}$  4. $\frac{9}{8}$ 

Part E, p. 35.

1. 
2. 

Part F, p. 36.

1. simple duple (or quadruple); 2 (or 4) over some note value (1, 2, 4, 8, and so on)
2. compound quadruple (or duple); 12 (or 6) over some note value
3. sounds like compound duple or compound single, but notated as simple triple (see pp. 30–31); 3 over some note value
4. simple quadruple (or duple); 4 (or 2) over some note value
5. compound duple (or quadruple); 6 (or 12) over some note value

Part G, p. 36.

- | | | | | |
|-------|--------|-------|--------|-------|
| 1. f | 2. G | 3. c# | 4. A | 5. Bb |
| 6. c | 7. D | 8. Eb | 9. b | 10. F |
| 11. g | 12. f# | 13. E | 14. Ab | |

Part H, p. 36.

1 2 3 4 5 6 7 8 9

m2 P4 P5 M2 M7 +6 M3 M6 °7

Part I, p. 36.

1 2 3 4 5 6 7 8 9

m3 m6 °5 m7 P5 m2 M7 +2 P4

Chapter Three

SELF-TEST 3-1

Part A, p. 39.

- | | | | |
|-------------|-------------|--------------|-------------|
| 1. Bb Db F | 2. E G# B | 3. G Bb Db | 4. F Ab Cb |
| 5. C Eb G | 6. D F# A# | 7. A C# E | 8. D F A |
| 9. Gb Bb Db | 10. B D# F# | 11. Ab Cb Eb | 12. C# E G# |

Part B, p. 39.

1. m 2. M 3. + 4. ° 5. M 6. M 7. m 8. + 9. M 10. m 11. m 12. M 13. ° 14. m 15. +

Part C, p. 40.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Fifth	C#	Bb	F#	D#	Gb	A	E	Cb	G#	B
Third	A	Gb	D	B	Eb	F#	C#	Ab	E	G#
Root	F	Eb	B	G	Cb	D#	A	F	C#	E
Type	+	m	m	+	M	°	M	°	m	M

Part D, p. 40.

1. third M 2. fifth ° 3. root m 4. fifth M 5. root + 6. fifth m 7. third m 8. fifth M 9. root ° 10. third m 11. fifth + 12. root M 13. fifth m 14. third M 15. third °

SELF-TEST 3-2

Part A, p. 41.

- | | | | | |
|--------|--------|---------|--------|---------|
| 1. m7 | 2. M7 | 3. °7 | 4. °7 | 5. M7 |
| 6. °7 | 7. m7 | 8. Mm7 | 9. M7 | 10. Mm7 |
| 11. °7 | 12. °7 | 13. Mm7 | 14. °7 | 15. m7 |

Part B, p. 42.

1 2 3 4 5 6 7

ø7 Mm7 M7 Mm7 m7 ø7 ø7

8 9 10 11 12 13 14 15

ø7 M7 M7 M7 m7 m7 M7 ø7

Part C, p. 42.

1 2 3 4 5 6 7

seventh of ø7 root of Mm7 third of M7 fifth of ø7 fifth of M7 seventh of ø7 third of ø7

8 9 10 11 12 13 14 15

seventh of Mm7 root of ø7 fifth of m7 third of M7 root of ø7 seventh of ø7 fifth of m7 third of Mm7

SELF-TEST 3-3

Part A, p. 47.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Root	E	A	G#	E	C#	D	E	G	B	Eb	F#	G	E	D
Type	m7	M	ø7	Mm7	m	ø7	M7	m	ø7	M	ø7	m7	ø	Mm7
Bps	6 5	6	4 3	4 3	6 4	4 2	7	6	4 3	6 4	6 5	7	6	4 2

Part B, pp. 47-48.

1. G 2. C#°/E 3. D 4. D#°/F# 5. D#°7/F#
 6. B7/D# 7. Em 8. F#7/E 9. Bm 10. E/G#
 11. A/C# 12. E 13. A

Part C, p. 48.

Chords shown in the first staff: F, F6, D7 $\flat$ 5/F $\sharp$, C/G, C7, Am/C A7/C $\sharp$.

Chords shown in the second staff: Dm, F/A, B $\flat$, Am7, Gm7, F $\sharp$ dim7, G, G7, C7.

SELF-TEST 3-4

Part A, p. 50.

1. Fm7
2. A $\sharp$ $^{\circ}$ 7/C $\sharp$
3. E
4. Fm/C
5. B7/A
6. G $^{\circ}$ 7/B $\flat$
7. C/E
8. F $\sharp$ /C $\sharp$
9. D $\flat$ 7
10. C $^{\circ}$ 7/B $\flat$
11. F $\sharp$ M7

Part B, pp. 51-52.

1. Fischer.

	1	2	3	4	5	6	7	8	9	10	11	12	13
Root	E	G $\sharp$	A	F	B	F	G	C	D	B	D	G	C
Type	M	$^{\circ}$ 7	m	M7	$^{\circ}$ 7	M	Mm7	M	m7	$^{\circ}$	m	Mm7	M
Bps		4 3	6	7	4 3		4 2	6	7	6		7	6 4

2. Byrd.

	1	2	3	4	5	6	7
Root	F	C	F	E $\flat$	A	B $\flat$	F
Type	m	M	M	M	$^{\circ}$	M	M
Bps					6		

3. Schumann.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Root	A	A	D	D	G	A	G $\sharp$	A	A	D	D	G	A	D	D
Type	M	Mm7	M	M	M	Mm7	$^{\circ}$	Mm7	Mm7	M	M	M	Mm7	M	Mm7
Bps	6	7		6		7	6	6 5	4 3		6		7		6 5

Part C, p. 52.

1. ; $\frac{6}{8}$
2. simple duple; ; $\frac{2}{4}$
3. simple quadruple; ; $\frac{4}{4}$
4. compound quadruple; ; $\frac{12}{8}$

2019 AP[®] MUSIC THEORY FREE-RESPONSE QUESTIONS

Question 7. (Suggested time—20 minutes)

Complete the bass line for the melody below, following eighteenth-century voice-leading procedures. Below the bass line, write the Roman and Arabic numerals that indicate the harmonies and inversions implied by the soprano and bass.

Observe the following.

- A. Keep the portion you compose consistent with the first phrase.
 1. Write an appropriate cadence at each phrase ending, including a perfect authentic cadence at the final cadence.
 2. Give melodic interest to the bass line. (Nonharmonic tones, if included, must be limited to unaccented passing and neighbor tones.)
 3. Vary the motion of the bass line in relation to the soprano.
 4. Use mostly quarter notes. (Where appropriate, note values ranging from half notes to eighth notes may be used.)
- B. Do not notate alto and tenor lines.

Start here
↓

Key: Eb
Chord analysis: I I⁶ V₃ I IV V I IV vii⁶ I V⁶

Chord analysis:

STOP

END OF WRITTEN EXAM

2019 AP[®] MUSIC THEORY FREE-RESPONSE QUESTIONS

Question 6. (Suggested time—10 minutes)

Write the following progression in four voices, following eighteenth-century voice-leading procedures. Continue logically from the spacing of the first chord. Do not add embellishments unless indicated by the Roman and Arabic numerals. Use only quarter and half notes.



A: I V^7 vi V_2^4/ii ii^6 V I

2019 AP[®] MUSIC THEORY FREE-RESPONSE QUESTIONS

MUSIC THEORY

SECTION II, Part A

Time—Approximately 1 hour and 10 minutes

Directions: Answer questions 1-7 in the space provided. If you choose to use the facing pages of manuscript paper for scratch work, be sure to save time for writing your final answer in the staves provided directly below each question. If you need to rewrite your answer to any question, use the facing page of music manuscript paper and indicate on the page with the question that your answer is on the facing page.

Questions 1-2

For each of these questions, you are to notate on the staves provided the correct pitch and rhythm of a short melody that you will hear. Make sure that any accidentals you use are appropriate for the key signature provided. In each case, the pulse will be established before the first playing of the melody.

Question 1. The melody will be played three times. There will be a pause of 30 seconds after the first playing and a one-minute pause after each subsequent playing. The melody you will hear uses all four of the measures provided below and contains no rests. The melody will be played on a cello.

The pitch of the first note has been provided. Be sure to notate the rhythm of that note. Now listen to the melody for the first time and begin working. 

Moderato



The melody for **Question 1** will now be played a second time. 

The melody for **Question 1** will now be played a final time. 

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Free-Response Questions

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2019 AP[®] MUSIC THEORY FREE-RESPONSE QUESTIONS

Question 4. Before listening to the first playing, please look at the staff below. Notice that there are nine chords in the progression; the soprano and bass notes and the Roman numeral of the first chord are given.

Remember to notate only the soprano and bass voices and to write, in every blank, the numerals indicating the chords and their inversions.

Now listen to the progression for the first time and begin working. 



f: i $\frac{iv}{ii}$ V i VI $\frac{ii}{V}$ $\frac{i}{V}$ V $\frac{I}{i}$

The progression for **Question 4** will now be played a second time. 

The progression for **Question 4** will now be played a third time. 

The progression for **Question 4** will now be played a final time. 

The remaining free-response questions for the music theory test are without audio prompts. You may answer them in the order you choose. You have a total of 45 minutes to complete free-response questions 5–7. A suggested time for each question is printed in your test booklet. Read the three questions carefully and use your time effectively. Now turn the page and begin working.

2019 AP[®] MUSIC THEORY FREE-RESPONSE QUESTIONS

Question 5. (Suggested time—15 minutes)

Realize the figured bass below in four voices, following traditional eighteenth-century voice-leading procedures. Continue logically from the spacing of the first chord. Do not add embellishments unless indicated by the figured bass. Prepare and resolve the nonharmonic tone as a suspension. On the blank below each chord, write the Roman numeral that appropriately indicates harmonic function.

The musical notation shows a bass line in G minor (one flat) and 4/4 time. The first measure has a treble clef and a whole note G3. The subsequent five measures are in the bass clef. The notes in the bass line are: G3 (quarter), A3 (quarter), B3 (quarter), C#4 (quarter), B3 (quarter), A3 (quarter), and G3 (half). The figured bass notation below the notes is: 6/4/3, 6, 6/5, 6, 4, and 4 with a sharp sign.

$\begin{matrix} 6 \\ 4 \\ 3 \end{matrix}$ 6 $\begin{matrix} 6 \\ 5 \end{matrix}$ 6 4 —#

g: — — — — — — —

Summer Work for AP Music Theory

Dr. Banks 2019

What's in your packet?

1. Textbook pages
2. Workbook pages
3. Answers to textbook pages for chapter 2 of Tonal Harmony: With an Introduction to Twentieth-Century Music by Kostka/Payne/Almén, 8th ed.

What do I do with the packet of pages?

1. Do textbook reading and examples first!
 - a. **Skim** through sections and **highlight** big ideas/definitions/italicized terms
 - b. **Complete** all Self-tests and Checkpoints in pencil (*every other item will do for most-but if you struggle with the concept, do all*)
 - c. **Complete** workbook sections as directed by the Textbook pages (*do all*). If you email (PDF) your work I will grade it and give feedback

Tasks☺!

Students must complete the following assignments by or before return to school in September 2019.

1. Chapter One – Textbook (all) and quiz
2. Chapter Two - Textbook (all), workbook (all) and quiz
3. Chapter Three – Textbook (all), workbook (all) and quiz
 - ✓ please write out answers including checkpoints, in pencil
 - ✓ please check Blackboard site and email for some listening clips
 - ✓ please “google” all music clips that need listening to

If you have any questions, please feel free to leave a message at: 914.488-8443 / jbanks@briarcliffschools.org
the fax number to the school is: **914.432.8217**. Please feel free to contact me via email if you have questions.

Have a great summer!!!

Dr. Banks

Textbook
chap. 1

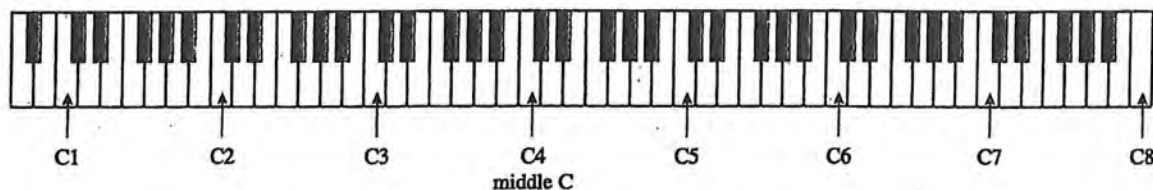
Chapter One

Elements of Pitch

The Keyboard and Octave Registers

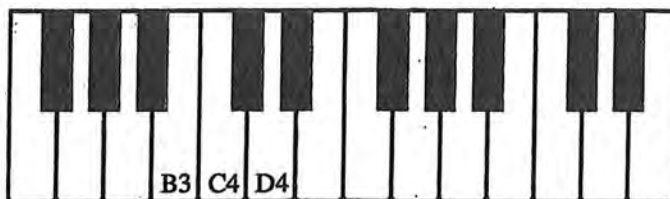
Pitch in music refers to the highness or lowness of a sound. Pitches are named by using the first seven letters of the alphabet: A, B, C, D, E, F, and G. We will approach the notation of pitch by relating this pitch alphabet to the piano keyboard, using Cs as an example. The C nearest the middle of the keyboard is called middle C, or C4. Higher Cs (moving toward the right on the keyboard) are named C5, C6, and so on. Lower Cs (moving toward the left) are named C3, C2, and C1. Notes below C1 are followed by a 0, as in B0. All the Cs on the piano are labeled in Example 1-1.

Example 1-1



From any C up to or down to the next C is called an **octave**. All the pitches from one C up to, but not including, the next C are said to be in the same **octave register**. As Example 1-2 illustrates, the white key above C4 is named D4 because it is in the same octave register, while the white key below C4 is named B3.

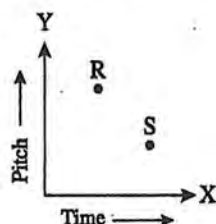
Example 1-2



Notation on the Staff

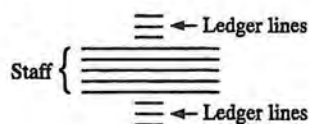
Our system of musical notation is similar to a graph in which time is indicated on the X axis and pitch is shown on the Y axis. In Example 1-3, R occurs before S in time and is higher than S in pitch.

Example 1-3



A staff is used in music to indicate the precise pitch desired. A staff consists of five lines and four spaces, but it may be extended indefinitely through the use of ledger lines (Ex. 1-4).

Example 1-4



A clef must appear at the beginning of the staff in order to indicate which pitches are to be associated with which lines and spaces. The three clefs commonly used today are shown in Example 1-5, and the position of C4 in each is illustrated. Notice that the C clef appears in either of two positions.

Example 1-5



The clefs in Example 1-5 are shown in the positions that are in common use today, but you may occasionally find them placed differently on the staff in some editions. Wherever they appear, the design of the G clef circles G4, the dots of the F clef surround F3, and the C clef is centered on C4.

The **grand staff** is a combination of two staves joined by a brace, with the top and bottom staves using treble and bass clefs, respectively. Various pitches are notated and labeled on the grand staff in Example 1-6. Pay special attention to the way in which the ledger

lines are used on the grand staff. For instance, the notes C4 and A3 appear twice in Example 1-6, once in relation to the top staff and once in relation to the bottom staff.

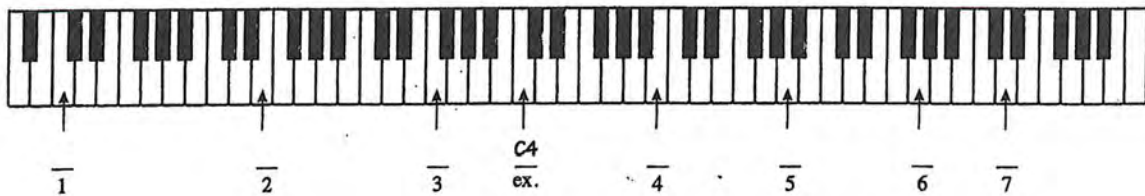
Example 1-6



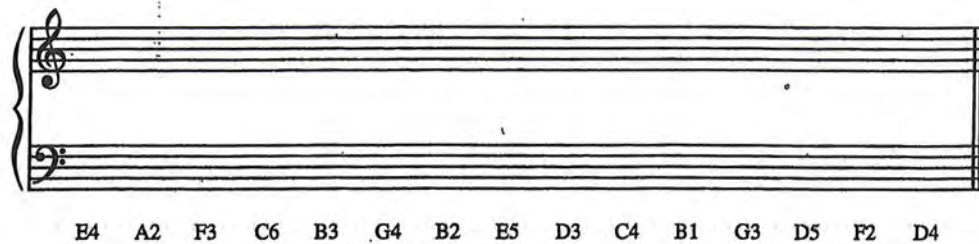
Self-Test 1-1

(Answers begin on page 552.)

- A. Name the pitches in the blanks provided, using the correct octave register designations.



- B. Notate the indicated pitches on the staff in the correct octave.



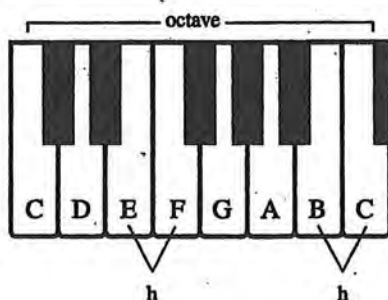
Exercise 1-1 See Workbook.

The Major Scale

In this chapter you will learn about major and minor scales, the scales that form the basis of tonal music. However, there are many other kinds of scales, some of which are covered in Chapter 26.

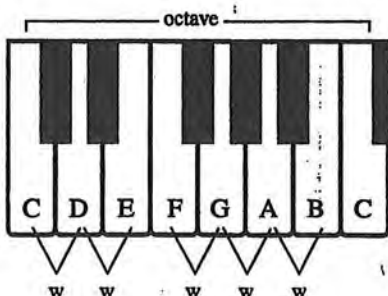
The **major scale** is a specific pattern of small steps (called half steps) and larger ones (called whole steps) encompassing an octave. A **half step** is the distance from a key on the piano to the very next key, white or black. Using only the white keys on the piano keyboard, there are two half steps in each octave, indicated by the letter "h" in Example 1-7.

Example 1-7



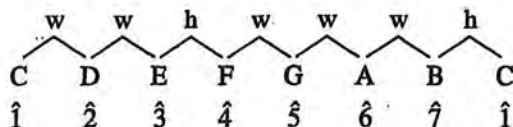
A **whole step** skips the very next key and goes instead to the following one. Using only the white keys on the piano keyboard, there are five whole steps in each octave, indicated by the letter "w" in Example 1-8.

Example 1-8

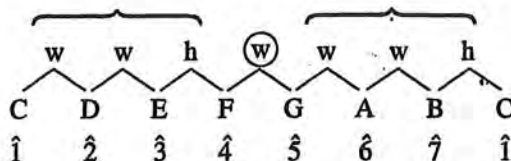


The major-scale pattern of whole and half steps is the same as that found on the white keys from any C up to the next C. In the next diagram, the numbers with carets above them (1, 2, etc.) are scale degree numbers for the C major scale.*

* Throughout this book we will refer to major scales with uppercase letters—for example, A major or A—and minor scales with lowercase letters—for example a minor or a.



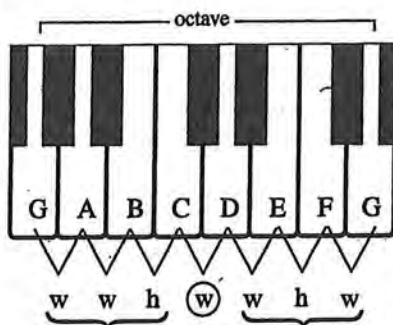
You can see from this diagram that half steps in the major scale occur only between scale degrees 3 and 4 and 7 and 1. Notice also that the major scale can be thought of as two identical, four-note patterns separated by a whole step. These four-note patterns are called **tetrachords**.



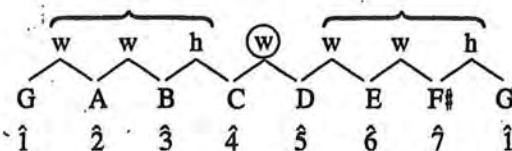
If we examine the steps on the white keys of a G-to-G octave, as in Example 1-9, we do not find the same pattern of whole and half steps that occurred in the C-to-C octave. To play a G major scale, we would need to skip the F key and play the black key that is between F and G. We will label that key with an **accidental**, a symbol that raises or lowers a pitch by a half or whole step. All the possible accidentals are listed in the following table.

Symbol	Name	Effect
×	Double sharp	Raise a whole step
#	Sharp	Raise a half step
♮	Natural	Cancel a previous accidental
♭	Flat	Lower a half step
♭♭	Double flat	Lower a whole step

Example 1-9



We can make our G scale conform to the major-scale pattern by adding one accidental, in this case a sharp.



It is important to understand that major and minor scales always use all the letter names of the musical alphabet. It would not be correct to substitute a G $\flat$ for the F# in a G major scale.

The scale is written on the staff in Example 1-10.

Example 1-10



Notice that when we write or say the names of notes and accidentals, we put the accidental last (as in F# or F sharp), but in staff notation the accidental always *precedes* the note that it modifies (as in Ex. 1-10).

The Major Key Signatures

One way to learn the major scales is by means of the pattern of whole and half steps discussed in the previous section. Another is by memorizing the key signatures associated with the various scales. The term *key* is used in music to identify the first degree of a scale. For instance, the key of G major refers to the major scale that begins on G. A **key signature** is a pattern of sharps or flats that appears at the beginning of a staff and indicates that certain notes are to be consistently raised or lowered. There are seven key signatures using sharps. In each case, the name of the major key can be found by going up a half step from the last sharp (Ex. 1-11).

Example 1-11

A musical staff in treble clef showing seven key signatures. Each key signature is represented by a set of sharps on the staff. Below each key signature is its name and the number of sharps: G major (1 sharp), D major (2 sharps), A major (3 sharps), E major (4 sharps), B major (5 sharps), F# major (6 sharps), and C# major (7 sharps). The sharps are placed on the lines and spaces of the staff: F# (line 1), C# (space 1), G# (line 2), D# (space 2), A# (line 3), E# (space 3), and B# (line 4).

There are also seven key signatures using flats. Except for the key of F major, the name of the major key is the same as the name of the next-to-last flat (Ex. 1-12).

Example 1-12

F major B $\flat$ major E $\flat$ major A $\flat$ major D $\flat$ major G $\flat$ major C $\flat$ major

1 flat 2 flats 3 flats 4 flats 5 flats 6 flats 7 flats

You may have noticed that there are three pairs of major keys that would sound exactly the same—that is, they would be played on the very same keys of the piano keyboard.

B major = C $\flat$ major

F $\sharp$ major = G $\flat$ major

C $\sharp$ major = D $\flat$ major

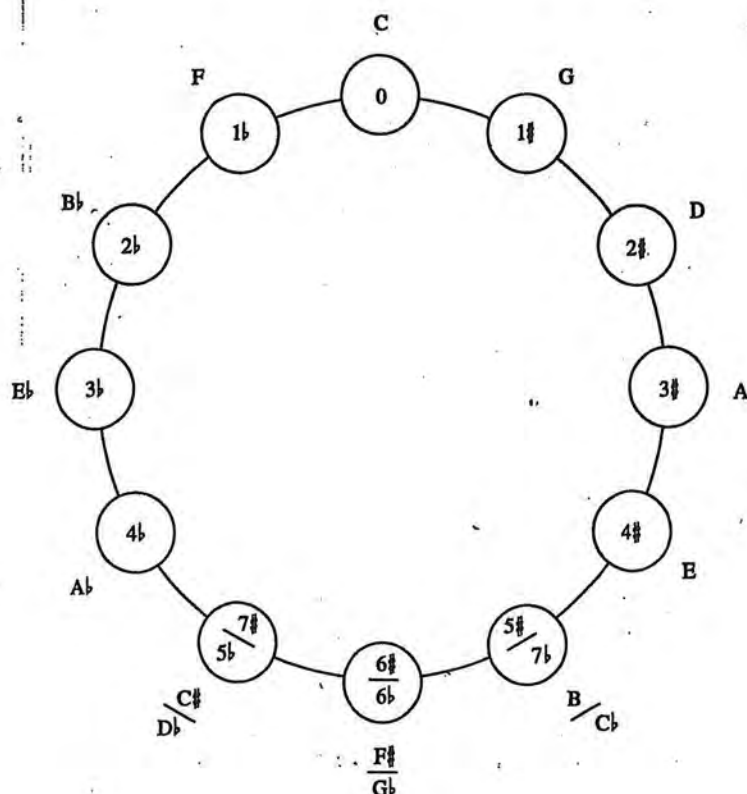
Notes that have the same pitch but that are spelled differently, like E and F $\flat$, are said to be **enharmonic**. Keys can be enharmonic as well, such as the three pairs of keys shown above. If two major keys are not enharmonic, then they are transpositions of each other. To **transpose** means to write or play music in some key other than the original.

The key signatures in Examples 1-11 and 1-12 must be memorized—not only the number of accidentals involved but also their order and placement on the staff. Notice that the pattern of placing the sharps on the staff changes at the fifth sharp for both the treble and the bass clefs. Try saying aloud the order of accidentals for sharps (FCGDAEB) and for flats (BEADGCF) until you feel confident with them.

Key signatures are written in much the same way using the alto and tenor clefs as they are for treble and bass. The only exception is the placement of sharps in the tenor clef, as you can see in Example 1-13.

Example 1-13

Some people find it easier to memorize key signatures if they visualize a **circle of fifths**, which is a diagram somewhat like the face of a clock. Reading clockwise around the circle of fifths on the following page, you will see that each new key begins on $\hat{5}$ (the fifth scale degree) of the previous key. If you go counterclockwise, each new key begins on $\hat{4}$ of the previous one.



CHECKPOINT

1. Does G3 lie below or above middle C?
2. How is a double sharp notated?
3. Half steps in the major scale occur between scale degrees _____ and _____ as well as between scale degrees _____ and _____.
4. The major scale consists of two identical four-note patterns called _____.
5. What relationship can you see between the order of sharps and the order of flats?
6. Name the 15 major keys.

Self-Test 1-2

(Answers begin on page 553.)

- A. Notate the specified scales using accidentals, *not* key signatures. Show the placement of whole and half steps, as in the example.

C major E major

w w h w w w h

D $\flat$ major B $\flat$ major

C $\sharp$ major A major

F major F $\sharp$ major

B. Identify these major key signatures.

C major 1 major 2 major 3 major 4 major 5 major 6 major 7 major

ex.

C. Notate the specified key signatures.

A major D $\flat$ major F $\sharp$ major B $\flat$ major B major C $\flat$ major D major C major

D. Fill in the blanks.

Key signature	Name of key	Key signature	Name of key
1. Three flats	_____ major	8. _____	B $\flat$ major
2. Seven sharps	_____ major	9. One sharp	_____ major
3. _____	D major	10. Five flats	_____ major
4. One flat	_____ major	11. _____	F $\sharp$ major
5. _____	A $\flat$ major	12. _____	C $\flat$ major
6. _____	B major	13. Four sharps	_____ major
7. Six flats	_____ major	14. _____	A major

E. Fill in the blanks, using the example as a model.

	Major key	Key signature	Scale degree	Is this note
Ex.	C	0/0	3	E
1.			3	F
2.	D $\flat$		5	
3.	G			F
4.	B		3	
5.	A			F
6.		7 $\flat$		F $\flat$

Exercise 1-2 See Workbook.

Minor Scales

Musicians traditionally practice and memorize three minor-scale formations, although these are a simplification of how minor keys actually work, as we will see in Chapter 4. One of these is the **natural minor scale**. You can see from the following illustration that the natural minor scale is like a major scale with lowered 3, 6, and 7.

C major	C	D	E	F	G	A	B	C
Scale degree	1	2	3	4	5	6	7	1
c natural minor	C	D	E $\flat$	F	G	A $\flat$	B $\flat$	C

Another minor scale type is the **harmonic minor scale**, which can be thought of as natural minor with a raised 7 or as major with lowered 3 and 6.

C major	C	D	E	F	G	A	B	C
Scale degree	1	2	3	4	5	6	7	1
c harmonic minor	C	D	E $\flat$	F	G	A $\flat$	B	C

The third type of minor scale is the **melodic minor scale**, which has an ascending form and a descending form. The ascending form, shown next, is like natural minor with a raised 6 and 7 or as major with lowered 3.

C major	C	D	E	F	G	A	B	C
Scale degree	1	2	3	4	5	6	7	1
c ascending melodic minor	C	D	E $\flat$	F	G	A	B	C

The descending form of the melodic minor scale is the same as the natural minor scale.

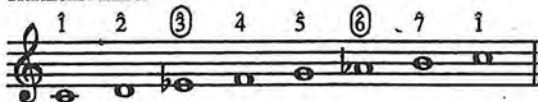
The three minor scale types are summarized in Example 1-14. The scale degrees that differ from the major are circled. Notice the arrows used in connection with the melodic minor scale in order to distinguish the ascending $\hat{6}$ and $\hat{7}$ from the descending $\hat{6}$ and $\hat{7}$. Also note that scale degrees $\hat{1}$ through $\hat{5}$ are identical in all three forms of the minor scale. This pattern of w-h-w-w is known as the **minor pentachord**.

Example 1-14

Natural minor



Harmonic minor



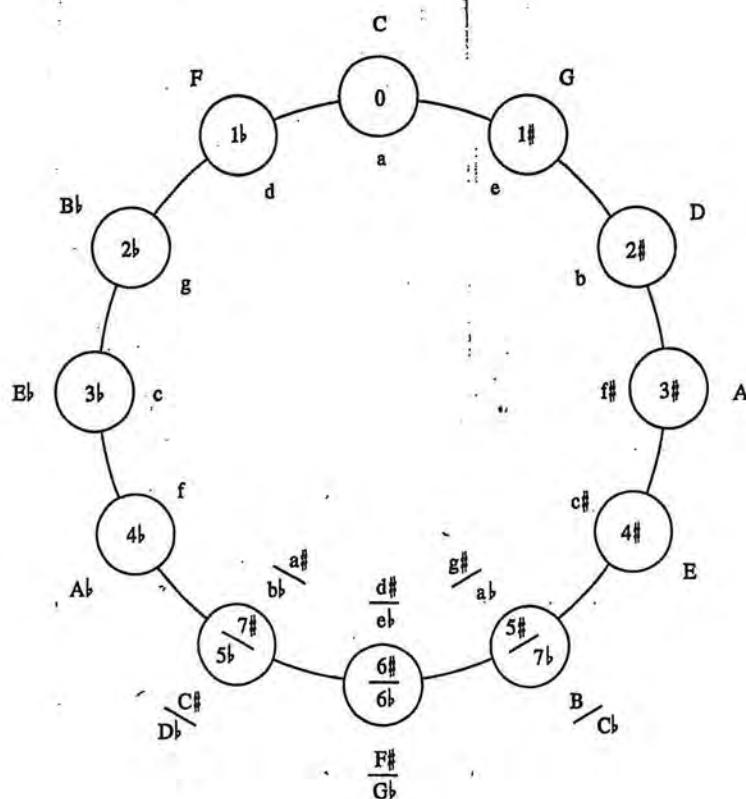
Melodic minor



Minor Key Signatures

Minor key signatures conform to the natural minor scale, no matter which minor scale type is actually in use. Looking back at Example 1-14, you can see that the natural minor scale on C requires three accidentals: B $\flat$, E $\flat$, and A $\flat$. The key signature of c minor, then, is the same as the key signature of E $\flat$ major; c minor and E $\flat$ major are said to be **relatives** because they share the same key signature. The relative major of any minor key starts on $\hat{3}$ of the minor scale, and the relative minor of any major key begins on $\hat{6}$ of the major scale. If a major scale and a minor scale share the same $\hat{1}$, as do C major and c minor, for example, they are said to be **parallel keys**. We would say that C major is the parallel major of c minor.

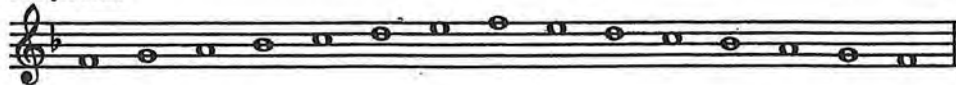
The circle of fifths is a convenient way to display the names of the minor keys and their relative majors, as well as their key signatures. In the following diagram, the names of the minor keys (in lowercase, as usual) are inside the diagram.



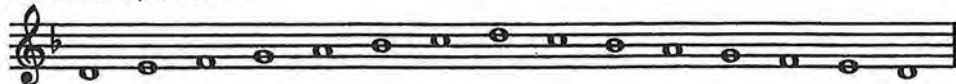
You may find it easier to learn the minor scales in terms of their relative majors, as in the preceding circle-of-fifths diagram, instead of in terms of their parallel majors, which is how minor scales were introduced on page 10. This will be most helpful regarding the keys of $g\sharp$, $d\sharp$, and $a\sharp$, which have no parallel major forms. If you do use the relative major approach, remember that the key signature for any minor scale conforms to the *natural* minor scale and that accidentals must be used to spell the other forms. Specifically, you have to raise $\hat{7}$ of the natural minor scale to produce the harmonic minor scale and raise $\hat{6}$ and $\hat{7}$ of the natural minor scale to get the ascending form of the melodic minor scale. Example 1-15 illustrates the spellings for the related keys of F major and d minor.

Example 1-15

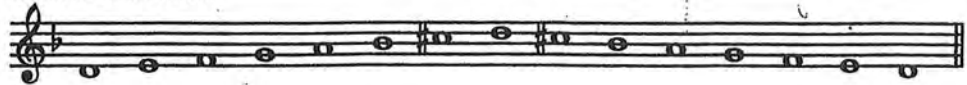
F major scale



Relative minor, natural form



Harmonic minor raises 7



Melodic minor raises 6 and 7, ascending only



One final hint: a quick way to find any minor key signature other than g#, d#, or a# is to begin with the key signature of the *parallel* major and to add three flats and/or subtract three sharps. Examples:

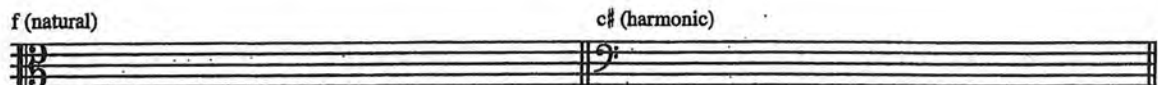
Major key		Minor key	
B $\flat$	2 flats	b $\flat$	5 flats
E	4 sharps	e	1 sharp
D	2 sharps	d	1 flat

It is very important to practice faithfully all the major and minor scales on an instrument until they become memorized patterns. An intellectual understanding of scales cannot substitute for the secure tactile and aural familiarity that will result from those hours of practice.

Self-Test 1-3

(Answers begin on page 554.)

- A. Notate the specified scales using accidentals, *not* key signatures. The melodic minor should be written both ascending and descending.



Scale Degree Names

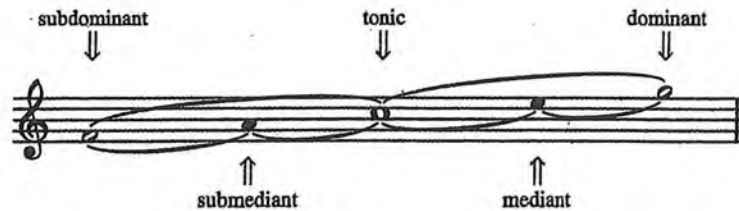
Musicians in conversation or in writing often refer to scale degrees by a set of traditional names rather than by numbers. The names are shown in Example 1-16. Notice that there are two names for $\hat{7}$ in minor, depending on whether or not it is raised.

Example 1-16



The origin of some of these names is illustrated in Example 1-17. Notice that the mediant lies halfway between the tonic and the dominant, while the submediant lies halfway between the tonic and the subdominant.

Example 1-17



CHECKPOINT

Now is the time to start learning the scale degree names, if you do not know them already. Here are a couple of exercises that will help.

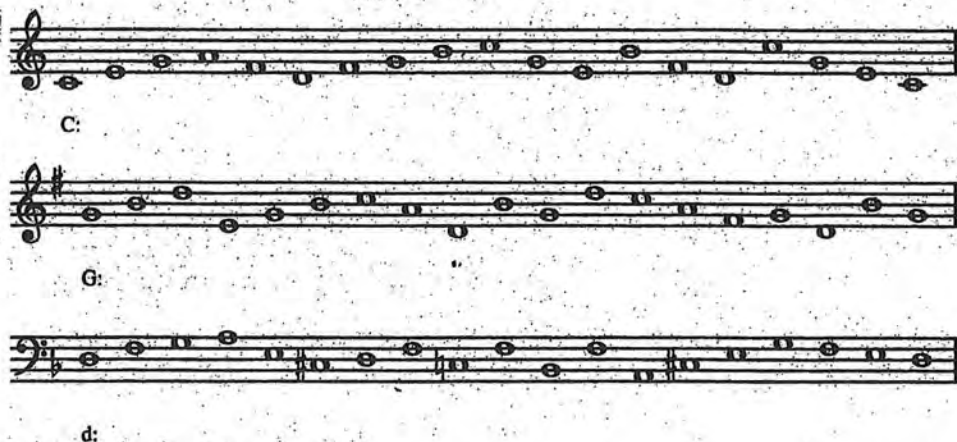
1. Translate these numbers aloud to scale degree names as fast as possible. Repeat as often as necessary until speed is attained.

1 2 3 4 5 6 7 1 7 6 5 4 3 2 1

3 5 7 6 4 2 1 6 3 7 2 5 4 3 1

5 2 7 4 6 3 1 2 7 5 6 4 1 3 2

2. Call out or sing the scale degree names contained in each example that follows.



Intervals

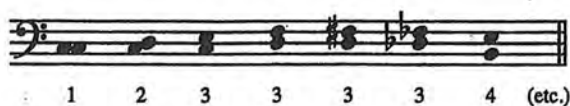
An **interval** is the measurement of the distance in pitch between two notes. A **harmonic interval** results when the notes are performed at the same time, whereas a **melodic interval** occurs when the notes are played successively (Ex. 1-18). The method of measuring intervals is the same for both harmonic and melodic intervals.

Example 1-18



There are two parts to any interval name: the numerical name and the modifier that precedes the numerical name. As Example 1-19 illustrates, the numerical name is a measurement of how far apart the notes are vertically on the staff, regardless of what accidentals are involved.

Example 1-19



In talking about intervals, we use the terms **unison** instead of 1, and **octave** (8ve) instead of 8. We also say 2nd instead of "two," 3rd instead of "three," and so on. Intervals smaller than an 8ve are called **simple intervals**, whereas larger intervals (including the 8ve) are called **compound intervals**.

It is important to notice in Example 1-19 that the harmonic interval of a 2nd is notated with the top note offset a little to the right of the bottom note. Accidentals are offset in the same way for harmonic intervals of a 2nd, 3rd, or 4th, if both notes require an accidental.

Self-Test 1-4

(Answers begin on page 555.)

Provide the numerical names of the intervals by using the numbers 1 through 8.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Exercise 1-4 See Workbook.

Perfect, Major, and Minor Intervals

One way to begin learning the modifiers for intervals is by relating them to the intervals contained in the major scale, specifically the intervals from $\hat{1}$ up to the other scale degrees. This method can then be applied in any context, whether or not the major scale is actually being used.

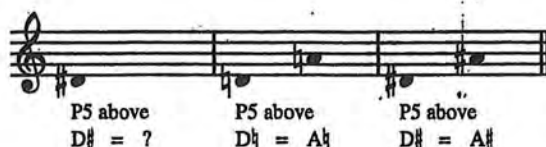
The term **perfect** (abbreviated P) is a modifier used only in connection with unisons, 4ths, 5ths, 8ves, and their compounds (11ths, and so on). As Example 1-20 illustrates, a P1, P4, P5, and P8 can all be constructed by using $\hat{1}$ in the major scale as the *bottom* note.

Example 1-20

P1 P4 P5 P8

If we want to spell one of these intervals above E_b , for example, we need only to think of scale steps 1, 4, and 5 of the E_b major scale. If the bottom note does not commonly serve as 1 of a major scale (such as $D\sharp$), remove the accidental temporarily, spell the interval, and then apply the accidental to both notes (Ex. 1-21).

Example 1-21



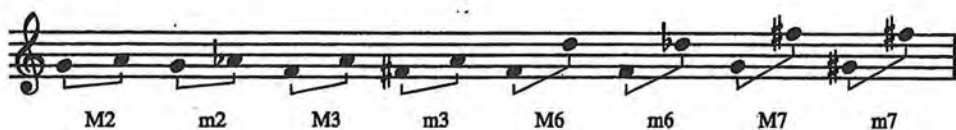
The modifiers **major** and **minor** (abbreviated as M and m) are used only in connection with 2nds, 3rds, 6ths, and 7ths. The intervals formed by 1-2, 1-3, 1-6, and 1-7 in the major scale are all major intervals, as Example 1-22 illustrates.

Example 1-22



If a major interval is made a half step smaller without altering its numerical name, it becomes a minor interval (Ex. 1-23). Notice that you can make an interval smaller by lowering the top note or raising the bottom note.

Example 1-23



Self-Test 1-5

(Answers begin on page 555.)

- A. All the intervals that follow are unisons, 4ths, 5ths, or 8ves. Put "P" in the space provided *only* if the interval is a perfect interval.

1 5 2 4 3 1 4 5 5 8 6 4 7 5 8 4 9 5 10 8

- B. All the intervals that follow are 2nds, 3rds, 6ths, or 7ths. Write "M" or "m" in each space, as appropriate.

1 3 2 6 3 7 4 2 5 6 6 2 7 3 8 7 9 6 10 2

- C. Notate the specified intervals above the given notes.

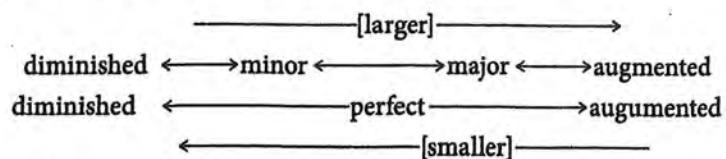
m2 P4 M6 m3 P5 m6 P8 M2 M7 P4
1 2 3 4 5 6 7 8 9 10

M3 P5 m7 m2 M6 P5 P8 M7 M3 m7
11 12 13 14 15 16 17 18 19 20

Exercise 1-5 See Workbook.

Augmented and Diminished Intervals

If a perfect or a major interval is made a half step larger without changing the numerical name, the interval becomes **augmented** (abbreviated +). If a perfect or a minor interval is made a half step smaller without changing its numerical name, it becomes **diminished** (abbreviated °). These relationships are summarized as follows:



There is no such thing as a diminished unison. Doubly augmented and doubly diminished intervals are possible, but they seldom occur. **Tritone** is a term used for the +4 or its enharmonic equivalent, the °5.

Inversion of Intervals

Descending intervals, especially large ones, are often easier to spell and identify through the use of **interval inversion**. We invert an interval by putting the bottom pitch above the top one or the reverse; for example, the interval D-A inverts to A-D. When we invert an interval, the new numerical name is always different from the old one. The new numerical name can be calculated by subtracting the old numerical name from 9.

Constant value of 9	9	9	9	9	9	9
Minus old numeric name	-2	-3	-4	-5	-6	-7
Equals new numeric name	7	6	5	4	3	2

You can see that an inverted 2nd becomes a 7th, a 3rd becomes a 6th, and so on (Ex. 1-24).

Example 1-24



The modifier also changes when an interval is inverted, with the exception of perfect intervals.

Old modifier	m	M	P	+	°
New modifier	M	m	P	°	+

As an example of the usefulness of inversion, suppose you wanted to know what note lies a m6 below G3. Invert the m6 down to a M3 up, as in Example 1-25, transpose the B3 down an 8ve, and you find that the answer is B2.

Example 1-25



Fluency with intervals, as with scales, is necessary for any serious musician and will provide a solid foundation for your further study. As you did with scales, you will benefit from finding out how various intervals sound and feel on a musical instrument.

One exercise you can do (you can think of others) is to write out the notes of the chromatic scale in random order. Include each black key twice—once as a sharped note and once as a flatted note. Then play some interval above and below each note. Work for speed, using your ear to correct yourself.

Consonant and Dissonant Harmonic Intervals

In tonal music, some harmonic intervals are considered to be consonant, whereas others are considered to be dissonant. The terms **consonant** and **dissonant** can be defined roughly as meaning pleasing to the ear and not pleasing to the ear, respectively, but these are very dependent on context. Some of the most exciting moments in tonal music involve dissonance, which is certainly not displeasing in that context, but the dissonances resolve eventually to the consonances that give them meaning. As you can imagine, this is a complex subject, and it is one with which much of this book is concerned.

For now it will suffice to say that major and minor 3rds and 6ths and perfect 5ths and 8ves are consonant. All other harmonic intervals, including all augmented and diminished intervals, are dissonant. An exception is the P4, which is considered dissonant in tonal music only when it occurs above the lowest voice (also called the *bass*, in both vocal and instrumental music).

CHECKPOINT

1. What is the term for an interval in which the notes are played in succession instead of simultaneously?
2. Is there such a thing as a m5? A P6?
3. A perfect interval made a half step smaller without changing its numerical name becomes _____
4. A $^{\circ}5$ inverted becomes a _____
5. Intervals that are relatively displeasing to the ear are classified as _____

Self-Test 1-6

(Answers begin on page 555.)

- A. Most of the following intervals are either augmented or diminished. Label each interval.

1 2 3 4 5 6 7 8 9 10

B. Label what each interval becomes when it is inverted.

- | | |
|---------------------|---------------------|
| 1. P4 becomes _____ | 5. °5 becomes _____ |
| 2. M7 becomes _____ | 6. m2 becomes _____ |
| 3. +2 becomes _____ | 7. m6 becomes _____ |
| 4. M3 becomes _____ | 8. +6 becomes _____ |

C. Notate the specified interval *below* the given note. (You may find it helpful to invert the interval first in some cases.)

P5	m7	m3	M6	+4	M7	+5	m6	M2	°7
1	2	3	4	5	6	7	8	9	10

D. Label each interval in this melody (from Wagner's *Götterdämmerung*). Interval 8 is from the A5 down to the D#5.

E. Beneath each of the following harmonic intervals, indicate whether it is consonant ("c"), dissonant ("d"), or dissonant only if the bass has the bottom note of the interval ("d bass").

	1. m7	2. P1	3. P8	4. °7	5. m6
c	_____	_____	_____	_____	_____
d	_____	_____	_____	_____	_____
d bass	_____	_____	_____	_____	_____

	6. M2	7. P5	8. M3	9. +2	10. P4
c	_____	_____	_____	_____	_____
d	_____	_____	_____	_____	_____
d bass	_____	_____	_____	_____	_____

Exercise 1-6 See Workbook.

Summary

Pitch in music refers to the highness or lowness of a sound. Particular pitches are named by using the **musical alphabet**, consisting of the letters A through G, at which point the alphabet starts over. From one letter up or down to its next occurrence is called an **octave**, whereas the space from any C up to the next B is called an **octave register**. Octave registers are numbered, with the lowest C on the **piano keyboard** designated as C1. The C nearest the middle of the piano keyboard is called **middle C**, or C4.

Pitches are notated on the **staff**, an arrangement of five lines and four spaces that can be extended through the use of **ledger lines**. A staff always begins with one of several **clefs**, which determine exactly what pitch is represented by each line or space. A **grand staff** consists of two staves joined by a brace, with a treble clef on the top staff and a bass clef on the bottom.

The **major scale** consists of two identical tetrachords that have a particular arrangement of **whole steps** and **half steps**. Most major scales also have a **parallel minor scale** that begins on the same note but that lowers scale degrees $\hat{3}$, $\hat{6}$, and $\hat{7}$ by a half step. This form of the minor is called the **natural minor scale**. The **harmonic minor scale** lowers only scale degrees $\hat{3}$ and $\hat{6}$ of its parallel major, whereas the **melodic minor scale** lowers scale degree $\hat{3}$ when ascending and scale degrees $\hat{3}$, $\hat{6}$, and $\hat{7}$ when descending.

Every scale has an associated **key signature**, consisting of zero to seven sharps or flats arranged in a particular way on the staff. There are 15 key signatures in all, with one major and one minor scale associated with each. Major and minor keys that share the same key signature are said to be **relative keys**, whereas those that share the same starting note are called **parallel keys**. The notes of a scale are all assigned **scale degree names**, which vary only slightly between major and minor. **Enharmonic** notes or keys sound the same but are spelled differently. To **transpose** music means to play it in another key.

The difference between any two pitches is called an **interval**. A **harmonic interval** separates pitches that are sounded simultaneously, whereas a **melodic interval** separates pitches that are sounded in succession. Intervals are defined by means of a numerical name and a modifier that precedes it. These modifiers include the terms **perfect**, **major**, **minor**, **augmented**, and **diminished**. To **invert** an interval, put the lower note above the upper one (or the reverse). The numerical name and modifier of an inverted interval can be predicted using the method explained in this chapter.

Consonant intervals include major and minor 3rds and 6ths, the P5, and the P8. The P4 is usually consonant, unless it occurs above the lowest voice.

Variations



For additional review and practice, please see Chapter 1 on our website at www.mhhe.com/kostka7e.

Part I

Fundamentals

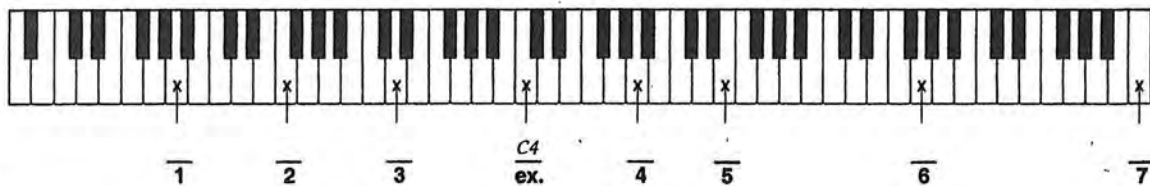
Chapter 1

Workbook
Chap. 1

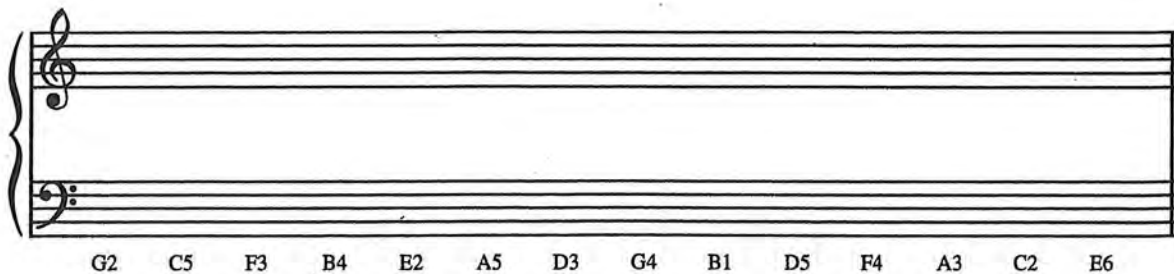
ELEMENTS OF PITCH

EXERCISE 1-1

A. Name the pitches in the blanks provided, using the correct octave register designations.



B. Notate the indicated pitches on the staff in the correct octave.



EXERCISE 1-2

- A. Notate the specified scales using accidentals, *not* key signatures. Show the placement of whole and half steps, as in the example.

C major A $\flat$ major



G major C $\flat$ major



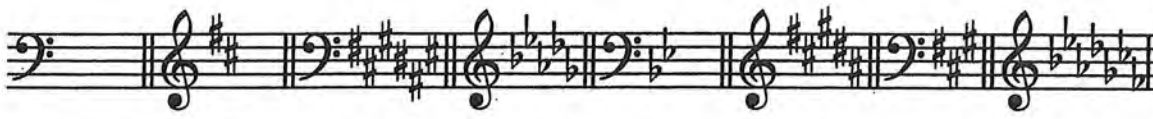
B major G $\flat$ major



E $\flat$ major D major



- B. Identify these major key signatures.



C major 1 major 2 major 3 major 4 major 5 major 6 major 7 major
 ex. 1 2 3 4 5 6 7

- C. Notate the specified key signatures.

A $\flat$ major E major F major C major



G $\flat$ major G major E $\flat$ major C $\sharp$ major



D. Fill in the blanks.

Key signature

Name of key

Key signature

Name of key

1. _____

D $\flat$ major

8. seven flats

_____ major

2. _____

G major

9. _____

F major

3. five sharps

_____ major

10. _____

E major

4. _____

E $\flat$ major

11. two sharps

_____ major

5. two flats

_____ major

12. three flats

_____ major

6. three sharps

_____ major

13. _____

G $\flat$ major

7. _____

C $\sharp$ major

14. six sharps

_____ major

E. Fill in the blanks, using the example as a model.

	<i>Major Key</i>	<i>Key Signature</i>	<i>Scale Degree</i>	<i>Is This Note</i>
Ex.	C	0 $\sharp$ /0 $\flat$	$\hat{5}$	G
1.	E		$\hat{3}$	
2.		2 $\sharp$		C $\sharp$
3.			$\hat{4}$	E $\flat$
4.	G $\flat$			E $\flat$
5.		3 $\sharp$	$\hat{2}$	
6.		6 $\sharp$		C $\sharp$

EXERCISE 1-3

- A. Notate the specified scales using accidentals, not key signatures. The melodic minor should be written both ascending and descending.

c (natural) e (harmonic)

b (natural) a $\flat$ (harmonic)

g (melodic)

a $\sharp$ (natural) d (harmonic)

d $\sharp$ (melodic)

- B. Identify the type of each scale as major, natural minor, harmonic minor, or melodic minor. Any melodic minor scales will be shown in the ascending version only.

1. _____ 2. _____

3. _____ 4. _____

5. _____ 6. _____

C. Identify these minor key signatures.



ex. a minor 1 minor 2 minor 3 minor 4 minor 5 minor 6 minor 7 minor

D. Notate the specified minor key signatures.



e $\flat$ minor

c $\sharp$ minor

g minor

a minor



e minor

a $\flat$ minor

d $\sharp$ minor

f minor

E. Fill in the blanks.

Key signature

Name of key

1. three sharps

f $\sharp$ minor

2. _____

e $\flat$ minor

3. _____

c $\sharp$ minor

4. five flats

_____ minor

5. _____

a minor

6. four flats

_____ minor

7. seven sharps

_____ minor

Key signature

Name of key

8. _____

g minor

9. two sharps

_____ minor

10. seven flats

_____ minor

11. _____

e minor

12. one flat

_____ minor

13. _____

c minor

14. _____

g $\sharp$ minor

EXERCISE 1-4

A. Provide the numerical names of the intervals by using the numbers 1 through 8.



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

EXERCISE 1-5

A. All the following intervals are unisons, 4ths, 5ths, or octaves. Put a "P" in the space provided *only* if the interval is a perfect interval.



1 4 2 5 3 8 4 4 5 1 6 5 7 4 8 5 9 4 10 1



11 5 12 5 13 8 14 5 15 4 16 1 17 4 18 8 19 5 20 4

B. All the following intervals are 2nds, 3rds, 6ths, or 7ths. Put an "M" or an "m" in each space, as appropriate.



1 6 2 3 3 2 4 7 5 3 6 7 7 6 8 2 9 3 10 7



11 6 12 3 13 3 14 7 15 6 16 3 17 2 18 7 19 6 20 7



21 22 23 24 25 26 27 28 29 30

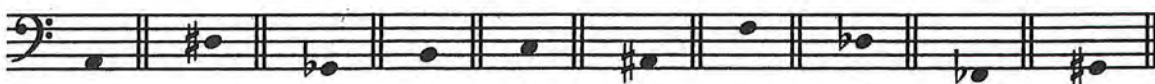
C. Notate the specified intervals above the given notes.



P4 1 m3 2 m6 3 M2 4 P4 5 P5 6 m2 7 P5 8 M7 9 m7 10



M3 11 P8 12 M6 13 m7 14 M3 15 M7 16 P8 17 P5 18 M6 19 m2 20



m3 21 M2 22 M7 23 M3 24 M6 25 m7 26 P4 27 M7 28 M6 29 m2 30



M6 31 M3 32 m3 33 M3 34 P5 35 m2 36 m6 37 m7 38 M7 39 M2 40



m6 41 M2 42 P4 43 m3 44 m7 45 P5 46 m6 47 P5 48 M7 49 m2 50



P5 51 P4 52 m3 53 m7 54 M2 55 P4 56 M6 57 m6 58 m2 59 M3 60

EXERCISE 1-6

A. Most of the intervals that follow are either augmented or diminished. Name each interval.



1 2 3 4 5 6 7 8 9 10



11 12 13 14 15 16 17 18 19 20

B. Label what each interval becomes when it is inverted.

- | | |
|---------------------|---------------------|
| 1. m3 becomes _____ | 5. M2 becomes _____ |
| 2. +5 becomes _____ | 6. +4 becomes _____ |
| 3. M6 becomes _____ | 7. P5 becomes _____ |
| 4. °7 becomes _____ | 8. m7 becomes _____ |

C. Notate the specified interval *below* the given note. (You might find it helpful to invert the interval first in some cases.)



M7 2 P4 m6 +2 m7 M3 +6 °5 +4 M6
1 2 3 4 5 6 7 8 9 10



m2 M3 +6 M2 °5 m3 °7 P4 +2 +4
11 12 13 14 15 16 17 18 19 20

Interval 21: m7 (F4 to E4)
Interval 22: P5 (F4 to C5)
Interval 23: m3 (F4 to A4)
Interval 24: m2 (F4 to E4)
Interval 25: P4 (F4 to Bb4)
Interval 26: M7 (F4 to D5)
Interval 27: m2 (F4 to E4)
Interval 28: °5 (F4 to C#5)
Interval 29: M2 (F4 to G4)
Interval 30: +6 (F4 to D#5)
Interval 31: m6 (F4 to D4)
Interval 32: P4 (F4 to Bb4)
Interval 33: M3 (F4 to A4)
Interval 34: P5 (F4 to C5)
Interval 35: +2 (F4 to G#4)
Interval 36: m3 (F4 to A4)
Interval 37: P5 (F4 to C5)
Interval 38: °7 (F4 to E#5)
Interval 39: M2 (F4 to G4)
Interval 40: M6 (F4 to D5)

- D. Label each interval in this melody (from Wagner's *Götterdämmerung*). Interval 10 is from the F4 to the C5. Remember that an accidental remains in effect until the end of the measure, unless it is canceled.

Interval 1: m2 (F4 to E4)
Interval 2: P4 (F4 to Bb4)
Interval 3: M3 (F4 to A4)
Interval 4: m3 (F4 to A4)
Interval 5: P5 (F4 to C5)
Interval 6: m2 (F4 to E4)
Interval 7: M2 (F4 to G4)
Interval 8: M2 (F4 to G4)
Interval 9: M2 (F4 to G4)

Interval 10: P5 (F4 to C5)
Interval 11: m2 (F4 to E4)
Interval 12: M2 (F4 to G4)
Interval 13: M2 (F4 to G4)
Interval 14: M2 (F4 to G4)
Interval 15: M2 (F4 to G4)
Interval 16: M2 (F4 to G4)
Interval 17: M2 (F4 to G4)
Interval 18: M2 (F4 to G4)
Interval 19: M2 (F4 to G4)
Interval 20: M2 (F4 to G4)
Interval 21: M2 (F4 to G4)
Interval 22: M2 (F4 to G4)
Interval 23: M2 (F4 to G4)
Interval 24: M2 (F4 to G4)

- E. Beneath each harmonic interval that follows, indicate whether it is consonant ("c"), dissonant ("d"), or dissonant only if the bass has the bottom note of the interval ("d bass").

	1. m3	2. M7	3. +6	4. P5	5. M6
c	_____	_____	_____	_____	_____
d	_____	_____	_____	_____	_____
d bass	_____	_____	_____	_____	_____
	6. °5	7. P4	8. P8	9. m2	10. M3
c	_____	_____	_____	_____	_____
d	_____	_____	_____	_____	_____
d bass	_____	_____	_____	_____	_____

Textbook Chapter 2

Chapter Two

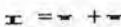
Elements of Rhythm

Rhythm

This chapter concerns the time aspect of music—how sounds are notated so that they will occur at a predictable moment and in a predetermined pattern. **Rhythm** is a general term used to refer to the time aspect of music, as contrasted with the pitch aspect.

Durational Symbols

Durations are notated by using symbols that are organized so that each symbol is twice the duration of the next shorter symbol and half the duration of the next longer symbol. The following table lists a number of these symbols.

Value	Note	Rest
Breve	 = 	 = 
Whole	 = 	 = 
Half	 = 	 = 
Quarter	 = 	 = 
Eighth	 = 	 = 
Sixteenth	 = 	 = 

The same series could be continued to thirty-seconds, sixty-fourths, and so on. Durations other than these must be indicated through the use of ties, dots, or other symbols. A **tie** is a curved line that connects two notes of the same pitch, creating a new duration that is equal to their sum. A **dot** following a symbol always adds to the duration one-half the value of the note, rest, or dot that precedes it, for example [ = ] and [ = ]. When notated on the staff, a dot is never placed on a staff line. If the notehead itself is on a staff line, the dot is put to the right of the note but in the space *above* it.

Beat and Tempo

The **beat** is the basic pulse of a musical passage. To determine the beat of a passage you are listening to, tap your foot to the music, or try to imagine the way a conductor would conduct the passage—the conductor's arm movement. The resulting steady pulse is called the beat, and the rate at which the beats occur is called the **tempo**.

A composer commonly specifies the tempo of a passage by one of two methods—sometimes by both. The first method uses words, often in Italian, to describe the tempo—words such as *adagio*, *moderato*, and *allegro*.

The second method is more exact because it shows precisely how many beats are to occur in the space of one minute. For example, if the desired tempo would result in 72 quarter notes in one minute, the tempo indication would be $\text{♩} = 72$ or M.M. $\text{♩} = 72$. The M.M. stands for Maelzel's metronome, after Johann Maelzel, who widely promoted the device during the early nineteenth century.

Meter

Beats tend to be grouped into patterns that are consistent throughout a passage; the pattern of beats is called the **meter**. Groups of two, three, and four beats are the most common, although other meters occur. Incidentally, a group of four beats could often also be interpreted as two groups of two beats each and vice versa. In any case, the groups of beats are called **measures** (abbreviated m. or mm.), and in notation the end of a measure is always indicated by a vertical line through the staff called a **bar line**. (A bar line also cancels any accidentals that appeared in the measure.) The words **duple**, **triple**, and **quadruple** are used to refer to the number of beats in each measure, as in **duple meter**, **triple meter**, and **quadruple meter**. These terms are summarized in the following table, along with the pattern of stresses usually found in each meter (referred to as **metric accent**).

Grouping	Meter type	Metric accent pattern
Two-beat measure	Duple	Strong-weak
Three-beat measure	Triple	Strong-weak-weak
Four-beat measure	Quadruple	Strong-weak-less strong-weak

As you might imagine, most marches are in duple meter because people have two feet, whereas contemporary popular music tends to be in duple or quadruple meter. Waltzes are always in triple meter, as are a number of traditional songs, such as "Amazing Grace" and "Scarborough Fair."

The meter of many passages is clear and easily identified, but in other cases the meter might be ambiguous. For example, sing "Take Me Out to the Ball Game" quite slowly while you tap your foot or conduct, then decide on the meter type. Now sing it again, but very fast. The first time you probably felt the meter was triple, but at a faster tempo you should have identified the meter as duple (or quadruple). Between those extreme tempos are more moderate tempos, which two listeners might interpret in different ways—one hearing a faster triple meter, the other a slower duple meter. Both listeners would be correct because identifying meter in a case such as this is a matter of interpretation rather than of right and wrong.

We use the term **hypermeter** to refer to a regular grouping of measures that is analogous to meter. Sing through "Amazing Grace," which is in triple meter, and notice how the measures form groups of four, creating a quadruple hypermeter.

Self-Test 2-1

(Answers begin on page 556.)

- A. Show how many notes or rests of the shorter duration would be required to equal the longer duration.

ex. $\text{♩} \times 2 = \text{♩}$

1. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

2. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

3. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

4. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

5. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

6. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

7. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

8. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

9. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

10. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

11. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

12. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

13. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

14. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

15. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

16. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

- B. Sing aloud each of the songs listed below. Then identify the meter type of each, using the terms *duple*, *triple*, and *quadruple*.

1. "Silent Night" (slow tempo) _____

2. "Jingle Bells" _____

3. "America the Beautiful" _____

4. "Seventy-Six Trombones" _____

5. "Home on the Range" _____

- C. Scale review. Given the key and the scale degree, supply the note name. Assume the *melodic minor* form for each minor key.

ex. $\text{f}\sharp \quad \hat{4} \quad \underline{\text{B}}$

1. $\text{D}\flat: \quad \hat{6} \quad \underline{\hspace{1cm}}$

2. $\text{f}: \quad \hat{3} \quad \underline{\hspace{1cm}}$

3. $\text{A}: \quad \hat{5} \quad \underline{\hspace{1cm}}$

4. $\text{B}: \quad \hat{3} \quad \underline{\hspace{1cm}}$

5. $\text{g}: \quad \uparrow \hat{6} \quad \underline{\hspace{1cm}}$

6. $\text{c}\sharp: \quad \downarrow \hat{7} \quad \underline{\hspace{1cm}}$

7. $\text{E}\flat: \quad \hat{5} \quad \underline{\hspace{1cm}}$

8. $\text{B}\flat \quad \hat{4} \quad \underline{\hspace{1cm}}$

9. $\text{c}: \quad \downarrow \hat{6} \quad \underline{\hspace{1cm}}$

10. $\text{e}: \quad \hat{4} \quad \underline{\hspace{1cm}}$

11. $\text{A}\flat: \quad \hat{7} \quad \underline{\hspace{1cm}}$

12. $\text{F}\sharp \quad \hat{2} \quad \underline{\hspace{1cm}}$

13. $\text{b}\flat: \quad \hat{5} \quad \underline{\hspace{1cm}}$

14. $\text{E}: \quad \hat{6} \quad \underline{\hspace{1cm}}$

15. $\text{d}: \quad \uparrow \hat{7} \quad \underline{\hspace{1cm}}$

Exercise 2-1 See Workbook.

Division of the Beat

In most musical passages, we hear durations that are shorter than the beat. We call these shorter durations **divisions of the beat**. Beats generally divide either into two equal parts, called **simple beat**, or into three equal parts, called **compound beat**. Be careful not to confuse beat type, which refers to how the beat divides (simple or compound), with meter type, which refers to how the measure divides (duple, triple, or quadruple). The common beat and meter types can be combined with each other in six possible ways.

BEAT	METER		
	Duple	Triple	Quadruple
Simple	Simple duple	Simple triple	Simple quadruple
Compound	Compound duple	Compound triple	Compound quadruple

For example, sing "Take Me Out to the Ball Game" quickly in duple meter, as you did in the discussion of meter on p. 25. You can hear that the beats divide into thirds, so this is an example of compound duple. Do the same with "I Don't Know How to Love Him" (from *Jesus Christ Superstar*) or "Around Her Neck She Wore a Yellow Ribbon," and you will find that both are simple duple (or simple quadruple).

CHECKPOINT

1. How many 16th notes are in a half note?
2. Two dots following a quarter note add what durations to it?
3. What is the term that refers to the number of beats in a measure?
4. What term refers to the ways in which the beats divide?

Self-Test 2-2

(Answers begin on page 556.)

Sing aloud each of the following songs. Then identify the beat and meter types of each, using terms such as *simple duple* and so on.

1. "Auld Lang Syne" _____
2. "Pop Goes the Weasel" _____
3. "Silent Night" _____
4. "Jingle Bells" _____
5. "Seventy-Six Trombones" _____

Simple Time Signatures

A **time signature** is a symbol that tells the performer how many beats will occur in each measure, what note value will represent the beat, and whether the beat is simple or compound. A time signature for a simple beat has 2, 3, or 4 as the top number. The top number indicates the number of beats in the measure; the bottom number indicates the beat note (2 = $\frac{1}{2}$, 4 = $\frac{1}{4}$, 8 = $\frac{1}{8}$, and so on). Some typical simple time signatures are listed in the following table. Notice that time signatures are not written as fractions—there should be no line between the numbers.

Time signature	Beats per measure	Beat note	Division of the beat
$\frac{2}{4}$	2	$\frac{1}{4}$	$\frac{1}{8}$
$\frac{2}{2}$ or C	2	$\frac{1}{2}$	$\frac{1}{4}$
$\frac{3}{8}$	3	$\frac{1}{8}$	$\frac{1}{16}$
$\frac{3}{4}$	3	$\frac{1}{4}$	$\frac{1}{8}$
$\frac{4}{8}$	4	$\frac{1}{8}$	$\frac{1}{16}$
$\frac{4}{4}$ or C	4	$\frac{1}{4}$	$\frac{1}{8}$

Example 2-1 illustrates how some of the songs we have been considering might be notated. The beat values were chosen arbitrarily. "Jingle Bells," for example, could also be notated correctly in $\frac{2}{2}$ or $\frac{2}{8}$ or any other simple duple time signature.

Example 2-1

"Jingle Bells"



"America the Beautiful"



"Home on the Range"



Self-Test 2-3

(Answers begin on page 557)

A. Fill in the blanks in the following table.

	Beat and meter type	Beat note	Division of the beat	Time signature
1.	Simple duple			
2.				$\frac{3}{8}$
3.				2
4.	Simple quadruple			
5.	Simple triple			

B. Renotate the excerpts from Example 2-1 using the specified time signatures.

- $\frac{2}{8}$ "Jingle Bells"
- $\frac{4}{2}$ "America the Beautiful"
- $\frac{3}{4}$ "Home on the Range"

Exercise 2-2 See Workbook.

Compound Time Signatures

If the beat divides into three equal parts, as in a compound beat, the note value representing the beat will be a dotted value, as shown next.

Beat note	Division of the beat
	
	
	
	

Dotted values present a problem where time signatures are concerned. For example, if there are two beats per measure, and the beat note is J , what would the time signature be? $\frac{2}{4}$? $\frac{2}{8}$? $\frac{2}{16}$? There is no easy solution, and the method that survives today is the source of much confusion concerning compound beat. Simply stated, a compound time signature informs the musician of the *number of divisions* of the beat contained in a measure and what the *division duration* is. This means that the top number of a compound time signature will be 6, 9, or 12 because two beats times three divisions equals six, three beats times three divisions equals nine, and four beats times three divisions equals twelve. As a result, you must *divide the top number of a compound time signature by three* to find out how many beats will occur in each measure. Some examples are given in the following table.

Time signature	Beats per measure	Beat note	Division of the beat
$\frac{6}{8}$	2	J	$\text{J} \text{ J} \text{ J}$
$\frac{9}{8}$	3	J	$\text{J} \text{ J} \text{ J}$
$\frac{12}{8}$	4	J	$\text{J} \text{ J} \text{ J}$
$\frac{6}{4}$	2	J	$\text{J} \text{ J} \text{ J}$
$\frac{9}{4}$	3	J	$\text{J} \text{ J} \text{ J}$
$\frac{12}{4}$	4	J	$\text{J} \text{ J} \text{ J}$

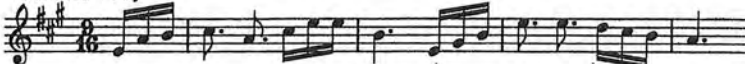
Example 2-2 illustrates some familiar tunes that use compound beat. As before, the choice of the actual beat note is an arbitrary one.

Example 2-2

"Take Me Out to the Ball Game"



"Down in the Valley"

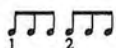
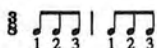


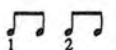
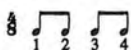
"Pop Goes the Weasel"



You can see from this discussion that compound time signatures do *not* follow the rule, so often learned by the student musician, that "the top number tells how many beats are in a measure, and the bottom number tells what note gets the beat." Of course, there are some pieces in $\frac{6}{8}$, for example, that really do have six beats to the measure, but such a piece is not

really in compound duple. A measure of $\frac{6}{8}$ performed in six does not sound like compound duple; instead, it sounds like two measures of simple triple, or $\frac{3}{8}$. In true compound duple, the listener will hear two compound beats to the measure, not six simple beats. In the same way, a slow work notated in $\frac{2}{4}$ might be conducted in four, which would seem to the listener to be simple quadruple. In both cases, the usual division value has become the beat value.

Slow $\frac{6}{8}$  becomes $\frac{3}{8}$ 

Slow $\frac{2}{4}$  becomes $\frac{4}{4}$ 

The reverse also occurs—that is, the usual beat value sometimes becomes the actual division value. For example, a fast waltz or scherzo is almost always notated as simple triple, usually as $\frac{3}{4}$. But the aural effect is of one beat per measure, for which we might use the term **compound single**. If you didn't know the metric convention of such pieces, you would probably assume when hearing them that they were in compound duple because the measures tend to group into hypermetric pairs.

CHECKPOINT

1. What three numbers are found on the top of simple time signatures?
2. What three numbers are found on the top of compound time signatures?
3. If the top number of a compound time signature is 9, how many beats will be in the measure?

Self-Test 2-4

(Answers begin on page 557)

A. Fill in the blanks.

	Beat and meter type	Beat note	Division of the beat	Time signature
1.	Compound duple			
2.				$\frac{9}{4}$
3.				6
4.	Compound quadruple			
5.				9

B. Renotate the excerpts from Example 2-2 using the specified time signatures.

1. $\frac{6}{4}$ "Take Me Out to the Ball Game"
2. $\frac{9}{8}$ "Down in the Valley"
3. $\frac{6}{16}$ "Pop Goes the Weasel"

Exercise 2-3 See Workbook.

Time Signatures Summarized

There are two types of beat, simple and compound, and three common meters, duple, triple, and quadruple, which can be combined in a total of six ways. For each of these six combinations there is a number that will always appear as the *top* part of the time signature.

BEAT TYPE		METER TYPE		
		Duple	Triple	Quadruple
Simple		$\frac{2}{x}$	$\frac{3}{x}$	$\frac{4}{x}$
Compound		$\frac{6}{x}$	$\frac{9}{x}$	$\frac{12}{x}$

A listener can usually recognize the beat and meter types of a passage without seeing the music. Therefore, you can usually say what the top number of the time signature is (except that duple and quadruple are often indistinguishable). However, to know what the bottom number of the time signature is, you have to look at the music because any number representing a note value can be used for any meter.

Time signature	Simple beat duration	Compound beat duration
$\frac{x}{1}$		
$\frac{x}{2}$		
$\frac{x}{4}$		
$\frac{x}{8}$		
$\frac{x}{16}$		

Remember that the bottom number of a time signature (the leftmost column in the preceding table) stands for the *beat* value in a *simple* time signature and the *division* value in a *compound* time signature.

More on Durational Symbols

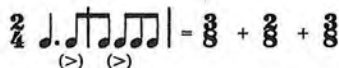
When rhythms are notated, it is customary to use rests, beams, ties, and dots in such a way that the metric accents and the individual beats are emphasized rather than obscured. Several incorrect and correct examples are notated in the following table.

Incorrect	Correct

Of course, it is correct to notate rhythms so as to obscure the metric accent when that is the desired result. **Syncopations** (rhythmic figures that stress normally weak beats or divisions) are frequently notated in that way, as shown next.



More involved figures, such as the following, are especially common in twentieth-century music.



A **tuplet** refers to the division of an *undotted value* into some number of equal parts other than two, four, eight, and so on or the division of a *dotted value* into some number of equal parts other than three, six, twelve, and so on, as you can see in the following table.

Original value	Tuplet
	 also  , etc.
	
	
	
	

Of all the possibilities, the superimposition of triplets on a simple beat is the most common. The note value used for a triplet is determined by the next longer available note value. For example, a third of a quarter note is longer than a sixteenth note but shorter than an eighth note, so the eighth note is chosen to represent it.

When a single-stem note is notated on the staff, the stem should go up if the note is below the middle line and down if the note is above the middle line. A note on the middle line theoretically can have its stem point in either direction, but most professional copyists consistently put a downward stem on notes that occur on the middle line (Ex. 2-3).

Example 2-3



Beams are used to connect durations shorter than a quarter note when the durations occur within the same beat. Not all professional copyists follow the same rules for determining the stem direction of beamed notes. Our preference is to decide the direction of the stems on the basis of the note that is farthest from the middle line. That is, if the note that is farthest from the middle line is below it, all the stems that are to be beamed together will point upward (Ex. 2-4).

Example 2-4



Self-Test 2-5

(Answers begin on page 558.)

A. Fill in the blanks.

Beat and meter type	Beat note	Division of the beat	Time signature
1.			$\frac{4}{4}$
2. Compound triple			
3.			$\frac{2}{8}$
4. Compound duple			
5.			3
6.			12

- F. Listen to a recording of the beginning of each of the five movements of Beethoven's Symphony no. 6, op. 68, and identify the beat and meter types of each. Then name three time signatures that *could* have been used to notate the movement.

Movement	Beat type	Meter type	Possible time signatures
I	_____	_____	_____
II	_____	_____	_____
III	_____	_____	_____
IV	_____	_____	_____
V	_____	_____	_____

- G. Scale review. Given the scale degree, the note, and whether the key is major or minor, supply the name of the key. Assume melodic minor for all minor key examples.

ex. $\uparrow \hat{6}$ is C# in e minor

- | | |
|--|--|
| 1. $\hat{4}$ is B $\flat$ in _____ minor | 8. $\hat{5}$ is B $\flat$ in _____ major |
| 2. $\hat{3}$ is B in _____ major | 9. $\uparrow \hat{6}$ is G# in _____ minor |
| 3. $\uparrow \hat{7}$ is B# in _____ minor | 10. $\hat{5}$ is C in _____ major |
| 4. $\hat{6}$ is F# in _____ major | 11. $\hat{3}$ is B $\flat$ in _____ minor |
| 5. $\hat{4}$ is E $\flat$ in _____ major | 12. $\downarrow \hat{7}$ is E in _____ minor |
| 6. $\hat{5}$ is G in _____ minor | 13. $\hat{7}$ is D# in _____ major |
| 7. $\hat{6}$ is B in _____ major | 14. $\hat{2}$ is B $\flat$ in _____ major |

- H. Interval review. Notate the specified interval above the given note.

1 m2 2 P4 3 P5 4 M2 5 M7 6 +6 7 M3 8 M6 9 $\circ 7$

- I. Interval review. Notate the specified interval below the given note.

1 m3 2 m6 3 $\circ 5$ 4 m7 5 P5 6 m2 7 M7 8 +2 9 P4

Exercise 2-4 See Workbook.

Summary

Rhythm refers to the time aspect of music, as contrasted with the pitch aspect. The relative duration of a musical sound is specified by a **durational symbol**, such as a whole note, half note, and so on. One or more **dots** may follow a durational symbol, each one adding to the duration one-half the value of the note or dot that precedes it; a **tie** connects two notes, creating a value equal to their sum. Most durational symbols use **stems**, and there are conventions of notation regarding the direction of the stems. **Beams** are often used to group together (but not to tie) durations shorter than a quarter note.

The basic pulse of a musical passage is called the **beat**, and the **tempo** is the rate at which the beats occur. The general tempo may be indicated by one of many terms in English or other languages, or it may be specified more exactly by a **metronome** marking.

Beats usually group into patterns of two, three, or four beats, referred to as **duple**, **triple**, and **quadruple** meters, respectively. Associated with each meter is its own pattern of **metric accents**. Beats in any meter usually divide into two equal parts (**simple beat**) or three equal parts (**compound beat**), giving rise to such terms as "triple simple" and "duple compound." A **tuplet** is used when a beat divides in a way that is contrary to the prevailing division of the beat. **Hypermeter** is the expression of a metric pattern at a higher level, as in groups of measures.

A **time signature** is a symbol that tells the performer the beat and meter types and what note value will represent the beat. A listener can identify the beat and meter types, but not the note value that represents the beat, just by listening to the music. The beat values for simple time signatures are always undotted notes, whereas those for compound time signatures are always dotted notes.

Variations



For additional review and practice, please see Chapter 2 on our website at www.mhhe.com/kostka7e.

Workbook Chap. 2

Chapter 2

ELEMENTS OF RHYTHM

EXERCISE 2-1

- A. Show how many notes or rests of the shorter duration would be required to equal the longer duration.

ex. $\text{♩} \times 2 = \text{♩}$

1. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

2. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

3. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

4. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

5. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

6. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

7. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

8. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

9. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

10. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

11. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

12. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

13. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

14. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

15. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

16. $\text{♩} \times \underline{\hspace{1cm}} = \text{♩}$

- B. Sing aloud each of the following songs. Then identify the meter type of each, using the terms *duple*, *triple*, and *quadruple*.

1. "Auld Lang Syne" _____

2. "Star-Spangled Banner" _____

3. "Pop Goes the Weasel" _____

4. "America" ("My Country, 'Tis of Thee") _____

5. "Swing Low, Sweet Chariot" _____

C. Scale review. Fill in the blanks, using the melodic minor for all minor-key examples.

ex. $\hat{6}$ is $F\sharp$ in A (M)

1. $\downarrow\hat{7}$ is C in ____ (m)

2. $\hat{4}$ is ____ in $c\sharp$

3. ____ is A in F

4. $\hat{5}$ is $C\sharp$ in ____ (m)

5. $\hat{2}$ is ____ in E

6. $\hat{7}$ is A in ____ (M)

7. $\downarrow\hat{6}$ is ____ in c

8. ____ is $C\sharp$ in b

9. $\hat{6}$ is C in ____ (M)

10. ____ is $F\sharp$ in g

11. $\hat{4}$ is G in ____ (M)

12. $\hat{5}$ is ____ in G

13. ____ is $A\flat$ in f

14. $\downarrow\hat{6}$ is $C\sharp$ in ____ (m)

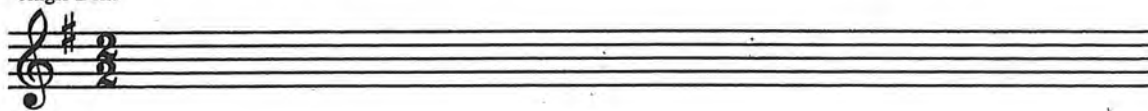
EXERCISE 2-2

A. Fill in the blanks.

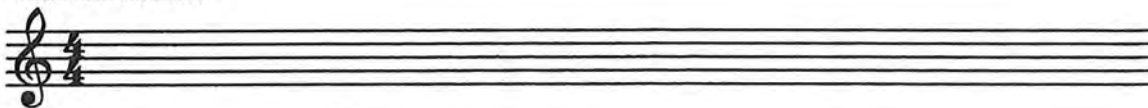
	<i>Beat and Meter Type</i>	<i>Beat Note</i>	<i>Division of the Beat</i>	<i>Time Signature</i>
1.				C
2.	Simple triple			
3.	Simple duple			
4.				2
5.	Simple quadruple			

B. Renotate the excerpts from textbook Example 2-1 using the specified time signatures.

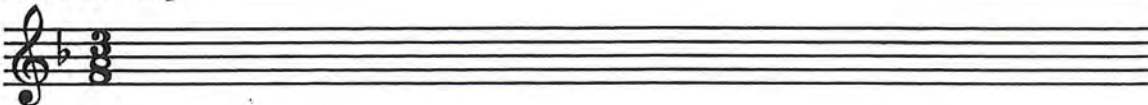
"Jingle Bells"



"America the Beautiful"



"Home on the Range"



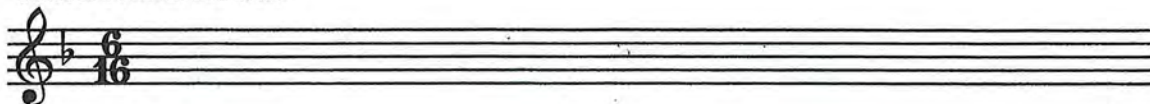
EXERCISE 2-3

A. Fill in the blanks.

	<i>Beat and Meter Type</i>	<i>Beat Note</i>	<i>Division of the Beat</i>	<i>Time Signature</i>
1.	Compound triple			
2.				6 16 12
3.				
4.	Compound duple			
5.				9

B. Renotate the excerpts from textbook Example 2-2 using the specified time signatures.

"Take Me Out to the Ball Game"



"Down in the Valley"



"Pop Goes the Weasel"



EXERCISE 2-4

A. Fill in the blanks.

	Beat and Meter Type	Beat Note	Division of the Beat	Time Signature
1.	Compound quadruple			
2.	Simple triple			
3.				4
4.				6
5.				
6.				9

B. Each measure below is incomplete. Add one or more rests to the end of each to complete the measure.

1. $\frac{6}{4}$ 

7. 

2. C 

8. $\frac{9}{4}$ 

3. $\frac{2}{16}$ 

9. $\frac{3}{2}$ 

4. $\frac{12}{16}$ 

10. $\frac{12}{8}$ 

5. $\frac{3}{8}$ 

11. $\frac{4}{8}$ 

6. $\frac{9}{8}$ 

12. $\frac{6}{4}$ 

- C. Provide the best time signature for each exercise. In some cases more than one correct answer might be possible.

1.	7.
2.	8.
3.	9.
4.	10.
5.	11.
6.	12.

- D. Each of the following fragments is notated so that the placement of the beats is obscured in some fashion. Without changing the way the music will sound, rewrite each one to clarify the beat placement. This may involve breaking some of the long notes into tied shorter notes or rebeaming groups of notes.

1. $\frac{4}{4}$	$\frac{4}{4}$ _____
2. $\frac{3}{2}$	$\frac{3}{2}$ _____
3. $\frac{9}{8}$	$\frac{9}{8}$ _____
4. $\frac{2}{4}$	$\frac{2}{4}$ _____
5. $\frac{12}{16}$	$\frac{12}{16}$ _____
6. $\frac{6}{2}$	$\frac{6}{2}$ _____

E. Add stems as required.

1. Each duration is a half note.



2. Each duration is a sixteenth note. Beam them in groups of four.



F. Scale review. Fill in the key, scale degree, or note, whichever is missing. Assume the melodic minor form for all minor keys.

ex. 1 2 3 4

D: 3 (m) $\uparrow 7$ F: 4 c: A: 2

5 6 7 8 9

 (m) $\uparrow 7$ d: 4 Eb: f: $\uparrow 6$ (m) 3

10 11 12 13 14

Bb: (M) 6 g: $\uparrow 6$ b: (M) 5

G. Interval review. Notate the specified interval above the given note.

1 2 3 4 5 6 7 8 9

M6 +4 M2 M3 m6 $\circ 7$ M7 +2 P5

H. Interval review. Notate the specified interval below the given note.

1 2 3 4 5 6 7 8 9

$\circ 5$ m6 m7 P4 M3 M7 m2 P5 +6

Chapter 3 Textbook

Chapter Three

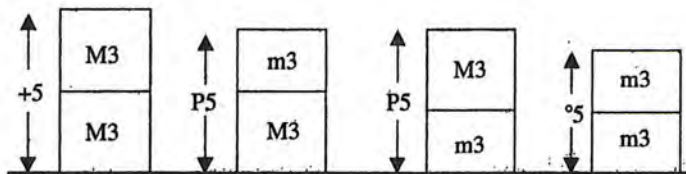
Introduction to Triads and Seventh Chords

Introduction

In this chapter we begin working with chords, the basic vocabulary of tonal harmony. We will not be concerned at this stage with how chords are used compositionally or even what kinds of chords occur in the major and minor modes, although we will encounter these topics soon enough. First we have to learn how to spell the more common chord types and how to recognize them in various contexts.

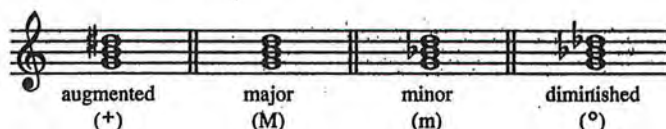
Triads

In "To the Student" (pp. xi-xiv), we explained that tonal harmony makes use of **tertian** (built of 3rds) chords. The fundamental tertian sonority is the **triad**, a three-note chord consisting of a 5th divided into two superimposed 3rds. There are four possible ways to combine major and minor 3rds to produce a tertian triad.



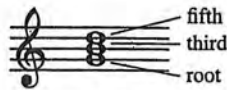
The names and abbreviations for these four triad types are given in Example 3-1.

Example 3-1



Play these triads at the piano and compare the way they sound. You might be able to guess from listening to them that in tonal music the major and minor triads are found the most often, the augmented the least often. There are also names (in addition to note names) for the members of a triad (Ex. 3-2).

Example 3-2



Study the preceding diagram and examples very carefully before going on.

CHECKPOINT

1. Which triad types contain a m3 as the bottom interval? As the top interval?
2. Which triad types contain a M3 as the top interval? As the bottom interval?
3. Which triad types contain a P5 between the root and the 5th? a $\circ$ 5? a +5?

Self-Test 3-1

(Answers begin on page 559.)

A. Spell the triad, given the root and the type. Major triads are indicated by an uppercase letter (G), minor by an uppercase letter followed by the letter "m" (Gm), augmented by a "+" (G+), and diminished by a " $\circ$ " (G $\circ$).

- | | |
|----------------------|------------------------|
| 1. B $\flat$ m _____ | 7. A _____ |
| 2. E _____ | 8. Dm _____ |
| 3. G $\circ$ _____ | 9. G $\flat$ _____ |
| 4. F $\circ$ _____ | 10. B _____ |
| 5. Cm _____ | 11. A $\flat$ m _____ |
| 6. D+ _____ | 12. C $\sharp$ m _____ |

B. Notate the triad, given the root and type.

ex.	1	2	3	4	5	6	7
M	m	M	+	$\circ$	M	M	m
8	9	10	11	12	13	14	15
+	M	m	m	M	$\circ$	m	+

C. Fill in the blanks.

	ex.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Fifth	F	_____	_____	_____	D#	_____	_____	_____	_____	G#	B
Third	D	A	G $\flat$	_____	_____	_____	F#	C#	_____	_____	_____
Root	B $\flat$	_____	_____	B	_____	C $\flat$	_____	_____	F	_____	_____
Type	M	+	m	m	+	M	°	M	°	m	M

D. Given the chord quality and one member of the triad, notate the remainder of the triad, with the root as the lowest tone.

ex. 1 2 3 4 5 6 7

third + third M fifth ° root m fifth M root + fifth m third m

8 9 10 11 12 13 14 15

fifth M root ° third m fifth + root M fifth m third M third °

Exercise 3-1 See Workbook.

Seventh Chords

If we extend a tertian triad by adding another 3rd on top of the 5th of the triad, the result is a four-note chord. Because the interval between this added note and the root is some kind of 7th (major, minor, or diminished), chords of this sort are called **seventh chords**.

Because it would be possible to use more than one kind of 7th with each triad type, there are many more seventh-chord types than triad types. However, tonal harmony commonly makes use of only five seventh-chord types (Ex. 3-3). Below each chord in Example 3-3 you will find the commonly used name for each chord and the symbol used as an abbreviation. Be sure to play Example 3-3 to familiarize yourself with the sound of these chords.

Example 3-3

Type of chord:	major seventh	major-minor seventh	minor seventh
Symbol:	M7	Mm7	m7
Construction:	major triad major 7th	major triad minor 7th	minor triad minor 7th



Type of chord:	half-diminished seventh	(fully) diminished seventh
Symbol:	$\flat 7$	$\circ 7$
Construction:	diminished triad minor 7th	diminished triad diminished 7th

Quite soon we will begin composition exercises using triads. Although seventh chords will not be used in composition exercises for some time, you will nevertheless begin to become familiar with them from an analytical standpoint through examples and analysis assignments.

CHECKPOINT

1. Which seventh-chord types have a diminished triad on the bottom?
2. Which ones have a M3 between the 5th and the 7th of the chord?
3. Which ones have a m3 between the 3rd and the 5th of the chord?
4. Which ones contain at least one P5? Which contain two?
5. Which one consists entirely of a stack of minor thirds?

Self-Test 3-2

(Answers begin on page 560.)

- A. Identify the type of each seventh chord, using the abbreviations given in Example 3-3 (M7, Mm7, m7, $\flat 7$, $\circ 7$).

ex. 1 2 3 4 5 6 7



8 9 10 11 12 13 14 15

B. Notate the seventh chord, given the root and type.

ex. 1 2 3 4 5 6 7

Mm7 $\flat 7$ Mm7 M7 Mm7 m7 $\flat 7$ $\flat 7$

8 9 10 11 12 13 14 15

$\flat 7$ M7 M7 M7 m7 m7 M7 $\flat 7$

C. Given the seventh chord quality and one member of the chord, notate the rest of the chord.

ex. 1 2 3 4 5 6 7

third of Mm7 seventh of $\flat 7$ root of Mm7 third of M7 fifth of $\flat 7$ fifth of M7 seventh of $\flat 7$ third of $\flat 7$

8 9 10 11 12 13 14 15

seventh of Mm7 root of $\flat 7$ fifth of m7 third of M7 root of $\flat 7$ seventh of $\flat 7$ fifth of m7 third of Mm7

Exercise 3-2 See Workbook.

This would be an appropriate point at which to begin work on

Counterpoint Unit 1, which can be found at www.mhhe.com/kostka7e.

Inversions of Chords

Up to now, we have been notating all chords with the root as the lowest tone. However, in a musical context, any part of a chord might appear as the lowest tone. The three possible **bass positions** of the triad are illustrated in Example 3-4.

Example 3-4

The bass position that we have been using, with the root as the lowest tone (or “in the bass”), is called **root position**. You might assume that “third position” would be the term for a chord with the 3rd as the lowest tone, but musical terminology is fraught with inconsistencies. Instead, this position is called **first inversion**. Reasonably enough, **second inversion** is used for chords with the 5th in the bass. The term **inversion** is used here to mean the transfer of the lowest note to any higher octave.

Example 3-5



All the chords in Example 3-6 are F major triads in first inversion. Notice that the upper notes of the chord can be spaced in any way without altering the bass position. Also, any of the notes can be duplicated (or **doubled**) in different octaves.

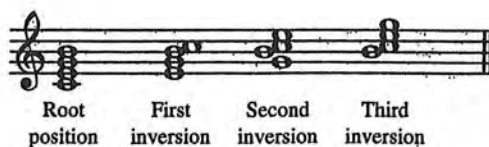
Example 3-6



(All are in first inversion)

The inversion of seventh chords works just like the inversion of triads, except that three inversions (four bass positions) are possible (Ex. 3-7).

Example 3-7



It is important to understand that the inversion of a triad or seventh chord is determined only by what member of the chord is in the *bass*; any chord members may appear in the soprano or in the other voices without changing the inversion.

Inversion Symbols and Figured Bass

In analyzing music we often use numbers to indicate the bass positions of chords. Instead of using 1 for first inversion, 2 for second inversion, and so on, we use numbers derived from the Baroque system called **figured bass** or **thoroughbass**. During the Baroque period (approximately 1600–1750), the keyboard player in an ensemble read from a part consisting only of a bass line and some symbols indicating the chord to be played above each bass note.

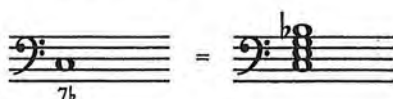
In the Baroque system, the symbols consisted basically of numbers representing intervals above the bass to be formed by the members of the chord, but the notes could actually be played in any octave above the bass. The system dealt only with intervals, not with roots of chords, because the theory of chord roots had not been devised when figured bass was first developed.

The following table illustrates the figured-bass symbols for root position and inverted triads and seventh chords for a G major triad and a G Mm 7.

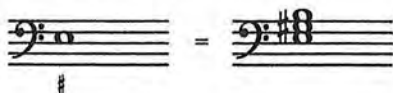
Sonority desired							
Complete figured bass symbol	5 3	6 3	6 4	7 5 3	6 5 3	6 4 3	6 4 2
Symbol most often used		6	6 4	7	6 5	4 3	4 2
How to find the root	Bass note	6th above bass	4th above bass	Bass note	6th above bass	4th above bass	2nd above bass

The Baroque keyboardist reading a figured bass followed the key signature unless told to do otherwise. So a root position triad, for example, might be major, minor, or diminished, depending upon the key signature. If the Baroque composer wanted to direct the keyboard player to raise or lower a note, several methods could be used, including the following three.

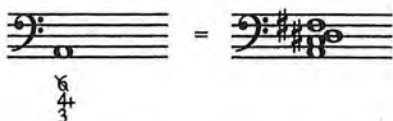
1. An accidental next to an arabic numeral in the figured bass could be used to raise or lower a note.



2. An accidental by itself always referred to the 3rd above the bass and could be used to alter that note.



3. A slash or plus sign in connection with an arabic numeral meant to raise that note.



Another symbol that you will occasionally encounter is a horizontal line, usually short, meaning to keep the same note or chord. For instance, $\frac{5}{3} \frac{6}{\text{—}}$ over a bass note means to use the same bass note for a root position triad followed by one in first inversion.

Example 3-8 illustrates a portion of an actual figured bass part from the Baroque period, along with a possible **realization** that would have been improvised by the keyboardist. Some keyboard players may have added embellishments not shown in this realization. Bach included the numeral 5 at several places to remind the player to play a root position triad.

Example 3-8 Bach, *Easter Oratorio*, II.

The image shows a musical score for a figured bass. The top staff is the figured bass line in 3/4 time, key of D major (two sharps). The figures above the notes are: 6, 6/5, 6/4, 5, 5, 6, 6, 5, 6/4, 7/4. The bottom staff shows a realization of this figured bass, with a treble clef and a bass clef, showing chords and a bass line.

The realization of figured basses is still considered to be an effective way to learn certain aspects of tonal composition, and we will occasionally use exercises of this kind in the text.

A few figured-bass symbols have been adopted for use in harmonic analysis. We call these **bass-position symbols** to distinguish them from figured bass, which is not the same thing. Bass-position symbols are usually used with a roman numeral (as in I^6 or V^6_3) as part of a harmonic analysis. (Roman-numeral analysis is explained in the next chapter.) Notice that when a seventh chord is inverted, the 7 is replaced by the appropriate bass-position symbol.

Bass position	Triad symbol	Seventh chord symbol
Root position	(none)	7
Root position	6	$\frac{6}{5}$
Second inversion	$\frac{6}{4}$	$\frac{4}{3}$
Third inversion	(none)	$\frac{4}{2}$ (or 2)

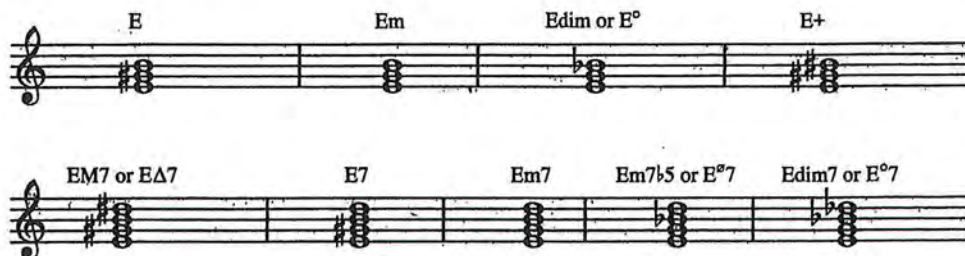
Lead-Sheet Symbols

There are some intriguing parallels and contrasts between the figured-bass system of the seventeenth and eighteenth centuries and the lead-sheet symbols (sometimes called pop symbols) developed for use with jazz and other types of popular music in the twentieth and twenty-first centuries. Both facilitated the notation process and served to provide sufficient information to allow the performer to improvise within certain bounds. However, whereas the figured-bass system provided the bass line with symbols indicating the chords

that were to be constructed *above* it, lead-sheet symbols appear along with a melody and indicate the chords that are to be constructed *below*.

Example 3-9 illustrates some **lead-sheet symbols** for the nine chord types that we have studied so far, along with some commonly used alternatives. Other chords and alternate symbols can be found in Appendix B in the back of this book.

Example 3-9



The list of symbols in Example 3-9 is incomplete because there are some chords that will be introduced in later chapters. A special case is the chord with an added sixth, as in C6, which calls for a triad with an added note a M6 above the root. Also, lead-sheet symbols will occasionally specify a particular bass note, as in C/G, which calls for a C major triad over a G in the bass—a triad in second inversion. This is called slash-chord notation. Finally, you may discover that lead-sheet symbols frequently differ from one edition to the next because editors and arrangers routinely make substitutions, simplifying or complicating the harmony as they see fit.

The top staff of Example 3-10 is from the beginning of a typical American “standard” ballad, and it uses five of the chord types seen in Example 3-9. The bottom staff shows the chords in close position, but they would be voiced differently by a jazz pianist. Notice that the $\flat$ in F#m7b5 does not literally mean to flat the fifth of the chord, but to lower it a half step—in this case from C# to C.



DISC 1: TRACK 1

Example 3-10 Kosma, “Autumn Leaves”

Lead-sheet symbols can be a very helpful first step toward a harmonic analysis, and we will occasionally give you practice with them in self-tests and exercises.

Self-Test 3-3

(Answers begin on page 561.)

A. Identify the root and type of each chord, and show the correct bass-position symbol (Bps).

	ex.	ex.	1	2	3	4	5	6	
Root	F	Bb	—	—	—	—	—	—	
Type	M	Mm7	—	—	—	—	—	—	
Bps	—	$\frac{6}{b}$	—	—	—	—	—	—	

	7	8	9	10	11	12	13	14
Root	—	—	—	—	—	—	—	—
Type	—	—	—	—	—	—	—	—
Bps	—	—	—	—	—	—	—	—

B. The bottom staff of this recitative is played on bassoon and keyboard, the keyboard player (the "continuo") realizing the figured bass. Fill in each blank below the bass line with the lead-sheet symbol of the chord to be played at that point, using slash-chord notation for inverted chords, as in the example. Remember that a numeral 5 by itself is simply a reminder to use a root position triad.

Bach, *Easter Oratorio*, II



DISC 1: TRACK 2

Bass		
Bassoon Continuo		
	ex.	1 2

3

lebt, und un-ser Herz, so erst in Trau-rig-keit zer-flos-sen und ge - schwebt, ver-gisst den Schmerz und

3 4 5 6 7 8

6

sinnt auf Freu - den-lie - der; denn un-ser Hei - land le - bet wie - der.

9 10 11 12 13

- C. Notate on the bottom staff the chords indicated by the lead-sheet symbols. Notate all chords in root position unless the symbol calls for an inversion. A 6 after a chord symbol means to add a note a M6 above the root.

Hendricks and Adderley, "Sermonette"



DISC 1 : TRACK 3

I heard me a Ser - mon - ette, have you heard it yet

4 C7 Am/C A7/C# Dm F/A Bb Am7 Gm7 F#dim7 G G7 C7

with that soul - ful mes - sage that you won't soon for - get?

Exercise 3-3 See Workbook.

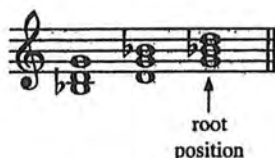
Recognizing Chords in Various Textures

Some students, especially those without much keyboard experience, find it difficult at first to analyze a chord that is distributed over two or more staves, as in Example 3-11.

Example 3-11



Example 3-12



One procedure to follow with the chord is to make an inventory of all the **pitch classes*** found in the chord (Bb, G, and D) and to notate the chord with each pitch class in turn as the lowest note. The other notes should be put as close to the bottom note as possible. The version that consists only of stacked 3rds is in root position. We can see from Example 3-12 that the chord in Example 3-11 is a g minor triad in first inversion.

The chord in Example 3-13 contains the pitch classes E, A, C#, and G, allowing four bass positions.

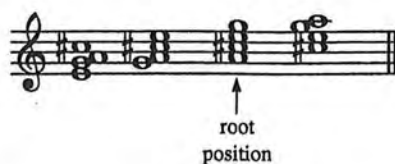
Example 3-13



Example 3-14 tells us that the chord in Example 3-13 is an A major-minor seventh chord in second inversion.

* The term *pitch class* is used to group together all pitches that have an identical sound or that are identical except for the octave or octaves that separate them. For example, all Bbs, Cs and Dbs belong to the same pitch class, no matter what octave they are found in.

Example 3-14



You might already be able to carry out this process in your head, which will speed things up considerably. If not, you will learn to do so with practice.

CHECKPOINT

1. What is the symbol for the first inversion of a triad? Of a seventh chord?
2. Explain $\frac{4}{2}$, $\frac{6}{4}$, and $\frac{4}{3}$.
3. Which bass position for which chord type requires no symbol?

Self-Test 3-4

(Answers begin on page 562.)

- A. Label each chord with an appropriate lead-sheet symbol in the space above the chord. Use slash-chord notation for inverted chords. All of the notes in each exercise belong to the same chord.

1. Fischer, Blumen-Strauss



DISC 1 : TRACK 3

1 2 3 4 5 6 7 8 9 10 11 12 13

Root _____

Type _____

Bps _____



DISC 1 : TRACK 3

The 8 under the treble clef on the tenor staff (third staff from the top) means that the notes are to be sung an 8ve lower than written.

S 1 2 3 4 5 6 7
 Be - hold, God is my help - er:
 A Be - hold, God is my help - er:
 T Be - hold, God is my help - er:
 B Be - hold, God is my help - er:
 Be - hold, God is my help - er:

Root _____
 Type _____
 Bps _____



DISC 1: TRACK 3

3. Schumann, *Wiegenliedchen*, op. 124, no. 6

(Note: Chord 14 is missing an A.)

1 2 3 4 5 6 7

Root _____

Type _____

Bps _____

8 9 10 11 12 13 14 15

C. Time signature review. Fill in the blanks.

	Beat and meter type	Beat note	Division of the beat	Time signature
1.	Compound duple			
2.				$\frac{2}{2}$
3.				4
4.				12

Exercise 3-4 See Workbook.

Summary

The fundamental sonority of tonal harmony is the **triad**, a three-note chord consisting of a 5th divided into two superimposed 3rds. The bottom note of the 5th is the **root**, and the top note is the 5th. The note that divides the 5th is the 3rd. There are four triad types: **major**, **minor**, **diminished**, and **augmented**.

A **seventh chord** may be thought of as a triad with another 3rd added above the 5th of the triad. The added note is a 7th above the root. Although many seventh chord types are possible, only five occur with any frequency in tonal harmony:

major seventh chord (M7): major triad with a M7 above the root

major-minor seventh chord (Mm7): major triad with a m7 above the root

minor seventh chord (m7): minor triad with a m7 above the root

half-diminished seventh chord ($^{\circ}7$): diminished triad with a m7 above the root

diminished seventh chord ($^{\circ}7$): diminished triad with a $^{\circ}7$ above the root

Root position is the term for a chord with the root notated as the lowest tone. Any other arrangement is called an **inversion**. A chord with the 3rd as the lowest tone is in **first inversion**, whereas one with the 5th as the lowest tone is in **second inversion**. A seventh chord with the 7th as the lowest tone is in **third inversion**. There are symbols for most of the various bass positions:

Bass position	Triad symbol	Seventh-chord symbol	Bass note
Root position	none	7	root
First inversion	6	$\frac{6}{5}$	third
Second inversion	$\frac{6}{4}$	$\frac{4}{3}$	fifth
Third inversion	n/a	$\frac{4}{2}$	seventh

Inversion symbols are derived from **figured bass**, a method of abbreviated notation used in the Baroque era. **Lead-sheet symbols** are used in jazz and most popular music to indicate chords to be played under a given melody. Both figured-bass symbols and lead-sheet (pop) symbols will be used occasionally throughout much of this text.

Variations



For additional review and practice, please see Chapter 3 on our website at www.mhhe.com/kostka7e.

Chapter 3

INTRODUCTION TO TRIADS AND SEVENTH CHORDS

EXERCISE 3-1

A. Spell the triad, given the root and the type. Major triads are indicated by an uppercase letter (G), minor by an uppercase letter followed by the letter "m" (Gm), augmented by a "+" (G+), and diminished by a "°" (G°).

- | | | | |
|-------------|-------------|--------------|---------------|
| 1. Gm _____ | 4. A° _____ | 7. C+ _____ | 10. F#m _____ |
| 2. E♭ _____ | 5. Fm _____ | 8. A#° _____ | 11. B+ _____ |
| 3. D° _____ | 6. D♭ _____ | 9. E _____ | 12. E♭m _____ |

B. Notate the triad, given the root and the type.

ex. 1 2 3 4 5 6 7

m M ° M + m m °

8 9 10 11 12 13 14 15

m + M M m ° M m

16 17 18 19 20 21 22 23

M ° m M + m + °

24 25 26 27 28 29 30 31

M m m ° M ° m M

C. Fill in the blanks.

	ex.	1	2	3	4	5	6	7	8	9	10
5th:	G#	A $\flat$	—	F#	—	—	—	—	—	B	—
3rd:	E	—	—	—	—	E $\flat$	—	—	B $\flat$	—	A
Root:	C#	—	D	—	A $\flat$	—	G#	E $\flat$	—	—	—
Type:	m	M	+	m	m	°	m	M	+	m	°

D. Given the chord quality and one member of the triad, notate the remainder of the triad.

ex. 1 2 3 4 5 6 7

5th M 3rd M 3rd + 5th m root M 3rd m 5th ° 3rd m

8 9 10 11 12 13 14 15

3rd ° 5th M root m 5th + 3rd m 3rd M root ° 5th M

16 17 18 19 20 21 22 23

5th M 3rd m root + 5th m 3rd M 5th ° root M 3rd m

24 25 26 27 28 29 30 31

root ° 3rd M 5th + 3rd m root M 3rd + 5th m 5th °

EXERCISE 3-2

A. Identify the type of seventh chord, using the abbreviations given in Example 3-3.

ex. 1 2 3 4 5 6 7

Mm7

8 9 10 11 12 13 14 15

B. Notate the seventh chord, given the root and type.

ex. 1 2 3 4 5 6 7

M7 Mm7 M7 ø7 Mm7 M7 ø7 Mm7

8 9 10 11 12 13 14 15

ø7 m7 ø7 m7 ø7 m7 Mm7 ø7

C. Given the seventh-chord quality and one member of the chord, notate the rest of the chord.

ex. 1 2 3 4 5 6 7

5th m7 7th M7 3rd m7 5th ø7 5th m7 3rd Mm7 7th ø7 root M7

8 9 10 11 12 13 14 15

7th ø7 root Mm7 3rd M7 3rd m7 5th ø7 root m7 7th ø7 5th ø7

EXERCISE 3-3

- A. Identify the root and type of each chord and show the correct bass-position symbol (Bps).

	1	2	3	4	5	6	7	8
								
Root	—	—	—	—	—	—	—	—
Type	—	—	—	—	—	—	—	—
Bps	—	—	—	—	—	—	—	—

	9	10	11	12	13	14	15	16
								
Root	—	—	—	—	—	—	—	—
Type	—	—	—	—	—	—	—	—
Bps	—	—	—	—	—	—	—	—

- B. Fill in the blanks below each figured bass with the lead-sheet symbol of the chord that would be played at the corresponding point in the excerpt. Use slash-chord notation, as in C/E, for inverted chords. The figures 5 and $\overset{5}{3}$ both mean to use a root position triad.

1. Bach, "Gott lebet noch" (adapted)

		6		$\overset{4}{2}$	6	6	6	6	7				
													
	1	2	3	4	5	6	7	8	9	10	11	12	13

2. Bach, "Dich bet' ich an, mein höchster Gott"

(The first C#3 in the bass is not to be harmonized.)

		7	$\overset{7}{\#}$	6	$\overset{6}{5}$			$\overset{4}{2}$	6	$\overset{6}{5}$	$\#$					
																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

3. Corelli, Sonata V, op. 2, Sarabande

6 6 5 6 5 6 6

1 2 3 4 5 6 7 8 9 10 11 12 13 14

7 6 7b 6 6 7

15 16 17 18 19 20 21 22 23 24 25 26 27

6 7b 6 5 6 b

28 29 30 31 32 33 34 35 36 37 38 39 40

C. Notate using half notes on the bottom staff the chords indicated by the lead-sheet symbols. Notate all chords in root position.



Terry, "Serenade to a Bus Seat"

Bb Bdim7 Am7b5 D7 Gm7 C7 F

EXERCISE 3-4

- A. Label each chord with an appropriate lead-sheet symbol in the space above the chord. Use slash-chord notation for inverted chords. All the notes in each exercise belong to the same chord.

1 2 3 4

5 6 7 8 9

- B. Provide the root, type, and bass-position symbol (Bps) for each chord in the following excerpts. Each chord is numbered. Put your analysis of the chords in the blanks below each excerpt.



3-4_B1.mp3

1. Bach, "Wer weiss, wie nahe mir mein Ende"

Root	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Type	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Bps	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

Root	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Type	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Bps	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34



2. Schumann, "Ich will meine Seele tauchen," op. 48, no. 5

3-4_B2.mp3

Leise

p

Root	_____	_____	_____	_____
Type	_____	_____	_____	_____
Bps	1	2	3	4

Root	_____	_____	_____	_____
Type	_____	_____	_____	_____
Bps	5	6	7	8

5

Li - lie soll klin - gend hau - chen ein

Root	_____	_____	_____	_____
Type	_____	_____	_____	_____
Bps	9	10	11	12

Lied von der Lieb - - sten mein. Das

Root	_____	_____	_____	_____	_____	_____	_____
Type	_____	_____	_____	_____	_____	_____	_____
Bps	13	14	15	16	17	18	19



3. Gottschalk, "Jerusalem"

3-4_B3.mp3

Root	_____	_____	_____	_____
Type	_____	_____	_____	_____
Bps	1	2	3	4

Root	_____	_____	_____	_____	_____
Type	_____	_____	_____	_____	_____
Bps	5	6	7	8	9

C. Time signature review. Fill in the blanks.

	<i>Beat and Meter Type</i>	<i>Beat Note</i>	<i>Division of the Beat</i>	<i>Time Signature</i>
1.	Simple triple			
2.				9
3.				6
4.				4 16

All Textbook Answers

Appendix D Chap. 1-2-3

Answers to Self-Tests

The answers given in certain kinds of Self-Test problems must be considered to be suggested solutions because more than one correct answer might be possible. When you have questions, consult your teacher.

Chapter One

SELF-TEST 1-1

Part A, p. 3.

1. C1 2. E2 3. F3 4. B4 5. A5 6. G6 7. D7

Part B, p. 3.

F4 B5 A4 A3 G2 D4 C4 G3 B4 C4 D3 F4

E4 A2 F3 C6 B3 G4 B2 E5 D3 C4 B1 G3 D5 F2 D4

or

SELF-TEST 1-2

Part A, pp. 8-9.

C major E major

D♭ major B♭ major

C♯ major A major

F major F♯ major

Part B, p. 9.

1. A♭ 2. E 3. F 4. E♭ 5. G 6. G♭ 7. C♯

Part C, p. 9.

A major D♭ major F♯ major B♭ major B major C♭ major D major C major

Part D, p. 9.

1. E♭ 2. C♯ 3. two sharps 4. F 5. four flats
 6. five sharps 7. G♭ 8. two flats 9. G 10. D♭
 11. six sharps 12. seven flats 13. E 14. three sharps

Part D, p. 14.

- | | | | | |
|---------------|-----------------|---------------|-----------------|----------------|
| 1. one flat | 2. e $\flat$ | 3. c $\sharp$ | 4. three sharps | 5. d $\sharp$ |
| 6. five flats | 7. seven sharps | 8. g | 9. four flats | 10. two sharps |
| 11. c | 12. seven flats | 13. e | 14. g $\sharp$ | |

SELF-TEST 1-4

p. 17.

- | | | | | |
|-------|-------|-------|-------|-------|
| 1. 2 | 2. 5 | 3. 7 | 4. 1 | 5. 3 |
| 6. 4 | 7. 8 | 8. 6 | 9. 4 | 10. 2 |
| 11. 6 | 12. 7 | 13. 8 | 14. 3 | 15. 5 |

SELF-TEST 1-5

Part A, p. 19.

All are "P" except nos. 4 and 7.

Part B, p. 19.

- | | | | | |
|------|------|------|------|-------|
| 1. M | 2. m | 3. m | 4. M | 5. m |
| 6. m | 7. m | 8. M | 9. M | 10. m |

Part C, p. 19.

SELF-TEST 1-6

Part A, p. 21.

- | | | | | |
|---------|----------------|----------------|----------------|----------|
| 1. $+5$ | 2. $^{\circ}7$ | 3. M3 | 4. $^{\circ}4$ | 5. $+2$ |
| 6. m7 | 7. $^{\circ}5$ | 8. $^{\circ}3$ | 9. $+6$ | 10. $+4$ |

Part B, p. 22.

- | | | | | |
|-------|-------|----------------|-------|---------|
| 1. P5 | 2. m2 | 3. $^{\circ}7$ | 4. m6 | 5. $+4$ |
| 6. M7 | 7. M3 | 8. $^{\circ}3$ | | |

Part C, p. 22.

$\frac{P5}{1}$ $\frac{m7}{2}$ $\frac{m3}{3}$ $\frac{M6}{4}$ $\frac{+4}{5}$ $\frac{M7}{6}$ $\frac{+5}{7}$ $\frac{m6}{8}$ $\frac{M2}{9}$ $\frac{°7}{10}$

Part D, p. 22.

- | | | | | |
|--------|--------|-------|-------|--------|
| 1. m3 | 2. P1 | 3. m6 | 4. P8 | 5. M3 |
| 6. P4 | 7. m3 | 8. °5 | 9. m2 | 10. +1 |
| 11. m2 | 12. M7 | | | |

Part E, p. 22.

1. d 2. c 3. c 4. d 5. c 6. d 7. c 8. c 9. d 10. d bass

Chapter Two

SELF-TEST 2-1

Part A, p. 26.

- | | | | | | |
|-------|-------|-------|--------|-------|-------|
| 1. 2 | 2. 4 | 3. 3 | 4. 8 | 5. 4 | 6. 3 |
| 7. 4 | 8. 7 | 9. 5 | 10. 6 | 11. 2 | 12. 4 |
| 13. 8 | 14. 4 | 15. 2 | 16. 12 | | |

Part B, p. 26.

1. triple 2. duple (or quadruple) 3. quadruple (or duple)
4. duple (or quadruple) 5. triple

Part C, p. 26.

- | | | | | |
|--------------|----------------|--------------|----------------|----------------|
| 1. B $\flat$ | 2. A $\flat$ | 3. E | 4. D $\sharp$ | 5. E |
| 6. B | 7. B $\flat$ | 8. E $\flat$ | 9. A $\flat$ | 10. A |
| 11. G | 12. G $\sharp$ | 13. F | 14. C $\sharp$ | 15. C $\sharp$ |

SELF-TEST 2-2

p. 27.

1. simple quadruple (or simple duple)
2. compound duple (or compound quadruple)
3. simple triple
4. simple duple (or simple quadruple)
5. compound duple (or compound quadruple)

SELF-TEST 2-3

Part A, p. 29.

1. ♪; 2/4

2. simple triple; ♪; ♪♪

3. simple duple; ♪; 2/2

4. ♪; 6/8

5. ♪♪; 3/8

Part B, p. 29.

1.



2.



3.



SELF-TEST 2-4

Part A, p. 31.

1. ♪♪; 6/8

2. compound triple; ♪; ♪♪♪

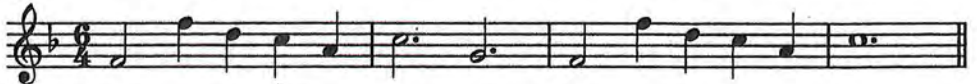
3. compound duple; ♪♪; 6/4

4. ♪; 12/8

5. compound triple; ♪; 6/8

Part B, p. 32.

1.



2.



3.



SELF-TEST 2-5

Part A, p. 34.

1. simple quadruple; $\downarrow$; $\downarrow$ $\downarrow$ $\downarrow$ 2. $\downarrow$ $\downarrow$ $\downarrow$; $\frac{8}{8}$ 3. simple duple; $\downarrow$; $\downarrow$ $\downarrow$
 4. $\downarrow$; $\frac{8}{8}$ 5. simple triple; $\downarrow$; $\frac{8}{8}$ 6. compound quadruple; $\downarrow$; $\frac{12}{8}$

Part B, p. 35.

1. $\frac{7}{8}$ 2. $\frac{7}{8}$ (or $\frac{7}{16}$) 3. $\frac{7}{8}$ (or $\frac{7}{16}$) 4. $\frac{7}{8}$ 5. $\frac{7}{8}$ 6. $\frac{7}{8}$ (or $\frac{7}{16}$)

Notice that $\frac{7}{8}$ would not be a good answer for no. 3 because this rest would obscure the beats in the measure (see p. 33).

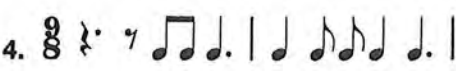
Part C, p. 35.

1. $\frac{8}{8}$ 2. $\frac{4}{4}$ or $\frac{2}{2}$ or C or $\frac{6}{8}$ 3. $\frac{8}{8}$ 4. $\frac{16}{8}$ 5. $\frac{12}{8}$ 6. same as no. 2

Part D, p. 35.

1. $\frac{6}{8}$  3. $\frac{4}{8}$ 

(The syncopation in m. 1 is very common and might well appear as $\downarrow$ $\downarrow$ $\downarrow$)

2. $\frac{6}{4}$  4. $\frac{9}{8}$ 

Part E, p. 35.

1. 

2. 

Part F, p. 36.

1. simple duple (or quadruple); 2 (or 4) over some note value (1, 2, 4, 8, and so on)
2. compound quadruple (or duple); 12 (or 6) over some note value
3. sounds like compound duple or compound single, but notated as simple triple (see pp. 30–31); 3 over some note value
4. simple quadruple (or duple); 4 (or 2) over some note value
5. compound duple (or quadruple); 6 (or 12) over some note value

Part G, p. 36.

- | | | | | |
|-------|--------|-------|--------|-------|
| 1. f | 2. G | 3. c# | 4. A | 5. Bb |
| 6. c | 7. D | 8. Eb | 9. b | 10. F |
| 11. g | 12. f# | 13. E | 14. Ab | |

Part H, p. 36.



Part I, p. 36.



Chapter Three

SELF-TEST 3-1

Part A, p. 39.

- | | | | |
|-------------|-------------|--------------|-------------|
| 1. Bb Db F | 2. E G# B | 3. G Bb Db | 4. F Ab Cb |
| 5. C Eb G | 6. D F# A# | 7. A C# E | 8. D F A |
| 9. Gb Bb Db | 10. B D# F# | 11. Ab Cb Eb | 12. C# E G# |

Part B, p. 39.

Part C, p. 40.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Fifth	C#	Bb	F#	D#	Gb	A	E	Cb	G#	B
Third	A	Gb	D	B	Eb	F#	C#	Ab	E	G#
Root	F	Eb	B	G	Cb	D#	A	F	C#	E
Type	+	m	m	+	M	°	M	°	m	M

Part D, p. 40.

SELF-TEST 3-2

Part A, p. 41.

- | | | | | |
|--------|--------|---------|--------|---------|
| 1. m7 | 2. M7 | 3. °7 | 4. °7 | 5. M7 |
| 6. °7 | 7. m7 | 8. Mm7 | 9. M7 | 10. Mm7 |
| 11. °7 | 12. °7 | 13. Mm7 | 14. °7 | 15. m7 |

Part B, p. 42.

1 2 3 4 5 6 7

8 9 10 11 12 13 14 15

o7 Mm7 M7 Mm7 m7 o7 o7

o7 M7 M7 M7 m7 m7 M7 o7

Part C, p. 42.

1 2 3 4 5 6 7

seventh of o7 root of Mm7 third of M7 fifth of o7 fifth of M7 seventh of o7 third of o7

8 9 10 11 12 13 14 15

seventh of Mm7 root of o7 fifth of m7 third of M7 root of o7 seventh of o7 fifth of m7 third of Mm7

SELF-TEST 3-3

Part A, p. 47.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Root	E	A	G#	E	C#	D	E	G	B	Eb	F#	G	E	D
Type	m7	M	o7	Mm7	m	o7	M7	m	o7	M	o7	m7	o	Mm7
Bps	6 5	6	4 3	4 3	6 4	4 2	7	6	4 3	6 4	6 5	7	6	4 2

Part B, pp. 47-48.

1. G 2. C#°/E 3. D 4. D#°/F# 5. D#°7/F#
6. B7/D# 7. Em 8. F#7/E 9. Bm 10. E/G#
11. A/C# 12. E 13. A

Part C, p. 48.



SELF-TEST 3-4

Part A, p. 50.

1. Fm7 2. A#°7/C# 3. E 4. Fm/C 5. B7/A
 6. G°7/Bb 7. C/E 8. F#°/C# 9. Db7 10. C°7/Bb 11. F#M7

Part B, pp. 51-52.

1. Fischer.

	1	2	3	4	5	6	7	8	9	10	11	12	13
Root	E	G#	A	F	B	F	G	C	D	B	D	G	C
Type	M	°7	m	M7	°7	M	Mm7	M	m7	°	m	Mm7	M
Bps		4 3	6	7	4 3		4 2	6	7	6		7	6 4

2. Byrd.

	1	2	3	4	5	6	7
Root	F	C	F	Eb	A	Bb	F
Type	m	M	M	M	°	M	M
Bps					6		

3. Schumann.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Root	A	A	D	D	G	A	G#	A	A	D	D	G	A	D	D
Type	M	Mm7	M	M	M	Mm7	°	Mm7	Mm7	M	M	M	Mm7	M	Mm7
Bps	6	7		6		7	6	6 5	4 3		6		7		6 5

Part C, p. 52.

1. ; $\frac{6}{16}$
 2. simple duple; ; $\frac{2}{4}$
 3. simple quadruple; ; $\frac{4}{8}$
 4. compound quadruple; ; $\frac{12}{8}$

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Question 7. (Suggested time—20 minutes)

Complete the bass line for the melody below, following eighteenth-century voice-leading procedures. Below the bass line, write the Roman and Arabic numerals that indicate the harmonies and inversions implied by the soprano and bass.

Observe the following.

A. Keep the portion you compose consistent with the first phrase.

1. Write an appropriate cadence at each phrase ending, including a perfect authentic cadence at the final cadence.
2. Give melodic interest to the bass line. (Nonharmonic tones, if included, must be limited to unaccented passing and neighbor tones.)
3. Vary the motion of the bass line in relation to the soprano.
4. Use mostly quarter notes. (Where appropriate, note values ranging from half notes to eighth notes may be used.)

B. Do not notate alto and tenor lines.

Start here
↓

2019 AP[®] MUSIC THEORY FREE-RESPONSE QUESTIONS

Question 6. (Suggested time—10 minutes)

Write the following progression in four voices, following eighteenth-century voice-leading procedures. Continue logically from the spacing of the first chord. Do not add embellishments unless indicated by the Roman and Arabic numerals. Use only quarter and half notes.



A: I V⁷ vi V₂⁴/ii ii⁶ V I

2019 AP[®] MUSIC THEORY FREE-RESPONSE QUESTIONS

MUSIC THEORY

SECTION II, Part A

Time—Approximately 1 hour and 10 minutes

Directions: Answer questions 1-7 in the space provided. If you choose to use the facing pages of manuscript paper for scratch work, be sure to save time for writing your final answer in the staves provided directly below each question. If you need to rewrite your answer to any question, use the facing page of music manuscript paper and indicate on the page with the question that your answer is on the facing page.

Questions 1-2

For each of these questions, you are to notate on the staves provided the correct pitch and rhythm of a short melody that you will hear. Make sure that any accidentals you use are appropriate for the key signature provided. In each case, the pulse will be established before the first playing of the melody.

Question 1. The melody will be played three times. There will be a pause of 30 seconds after the first playing and a one-minute pause after each subsequent playing. The melody you will hear uses all four of the measures provided below and contains no rests. The melody will be played on a cello.

The pitch of the first note has been provided. Be sure to notate the rhythm of that note. Now listen to the melody for the first time and begin working. 

Moderato



The melody for **Question 1** will now be played a second time. 

The melody for **Question 1** will now be played a final time. 

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AP[®] Music Theory

Free-Response Questions

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Question 4. Before listening to the first playing, please look at the staff below. Notice that there are nine chords in the progression; the soprano and bass notes and the Roman numeral of the first chord are given.

Remember to notate only the soprano and bass voices and to write, in every blank, the numerals indicating the chords and their inversions.

Now listen to the progression for the first time and begin working. 



f: i $\overset{i}{\text{IV}}$ V i VI $\overset{ii^2}{\text{ii}}$ $\overset{i^6}{\text{V}}$ V¹ $\overset{i^1}{\text{i}}$

The progression for **Question 4** will now be played a second time. 

The progression for **Question 4** will now be played a third time. 

The progression for **Question 4** will now be played a final time. 

The remaining free-response questions for the music theory test are without audio prompts. You may answer them in the order you choose. You have a total of 45 minutes to complete free-response questions 5–7. A suggested time for each question is printed in your test booklet. Read the three questions carefully and use your time effectively. Now turn the page and begin working.

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Question 5. (Suggested time—15 minutes)

Realize the figured bass below in four voices, following traditional eighteenth-century voice-leading procedures. Continue logically from the spacing of the first chord. Do not add embellishments unless indicated by the figured bass. Prepare and resolve the nonharmonic tone as a suspension. On the blank below each chord, write the Roman numeral that appropriately indicates harmonic function.

$\begin{matrix} 6 \\ 4 \\ 3 \end{matrix}$ 6 $\begin{matrix} 6 \\ 5 \end{matrix}$ 6 4 — #

g: — — — — — — —