VOLUME ONE

The Shaping of Musical Elements

WORKBOOK

ARMAND RUSSELL
and ALLEN TRUBITT

University of Hawaii

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CONTENTS

PREFACE

This workbook accompanies volume 1 of this two-volume text. The first volume is normally covered in the first year of college-level music theory. The goal of the text is an understanding of musical structure, acquired through the practical applications provided by exercises in (1) analysis and (2) creative writing.

The creative writing includes a wide range of possibilities varying in restrictions, length, and creative potential. Some are small, limited problems, while others entail more creativity through writing rhythms, melodic lines, and harmonic progressions or harmonizing melodies or composing short pieces. Analytical problems generally precede creative ones in most chapters, but it is recommended that at least some of both types be undertaken to assure comprehension of the concepts set forth in the text and their application. The abundance of exercises provided allows flexibility in the kind of assignments given, the types of music to be analyzed, and the level of difficulty; however, it is assumed that no one class would use all of the material.

In addition to these more customary exercises each chapter concludes with suggested "laboratory experiences," in which the students may experience the sounds and effects of the musical concepts being studied, sometimes working individually, sometimes as a group. Laboratory experiences may include directed or guided listening, performance through singing or playing, and other exercises working with "live" music or group discussions.

The workbook provides opportunities to apply the concepts and principles discussed in the text in a progressive manner, from the learning of facts to the development of judgment in musical situations. The purpose of the workbook is to bridge the gap between theory problems chosen and monitored by a teacher and the activities of the self-reliant, independent musician.

Consistent with this approach in encouraging independence, blank staves with setup systems are provided only when a particular, specialized format is needed. For most exercises it is valuable for the student to be given experience creating the standard layouts for staves, systems, clefs, and so forth in the changing contexts of their theoretical study.

CHAPTER ONE

Notation, Intervals, and Scales

Student Name: _____ Section: _____

Instructor Name: _____ Date: _____

EXERCISES

1-1. Complete charts A and B by filling in the time signatures. Notice that some meters appear on both charts. Is there a difference between the two? How can one know which is intended? Does tempo make a difference in this?

A. Simple Meters

Number of BDs per measure

Note values representing BD

	1	2	3	4	5	6	7
𝅗𝅥				$\frac{4}{2}$			
♩			$\frac{3}{4}$				
♪						$\frac{6}{8}$	
𝅘𝅥𝅯	$\frac{1}{16}$						

B. Compound Meter

Number of BDs per measure

Note values representing BD

	1	2	3	4	5	6	7
𝅗𝅥.		$\frac{6}{4}$					
♩.				$\frac{12}{8}$			
♪.			$\frac{9}{16}$				
𝅘𝅥𝅯.	$\frac{3}{32}$						

1-2. Add bar lines and correct the beams and flags to suit the given meter. Begin each exercise on the first beat of the measure.

SAMPLE

SOLUTION

a. 

b. 

c. 

d. 

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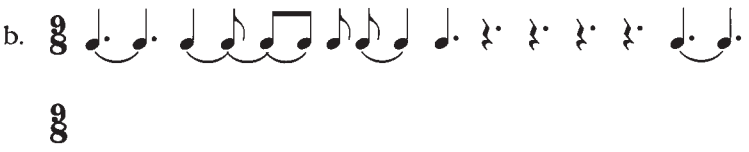
1-3. Add bar lines and simplify the notation wherever appropriate. All exercises begin on the first beat of a measure.

SAMPLE

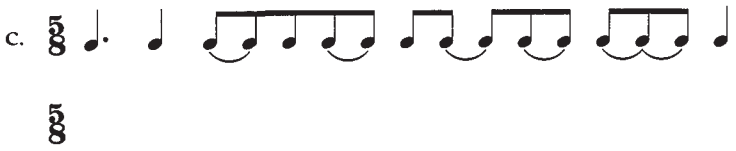
SOLUTION

a.

b.



c.



1-4. Correct all errors you find in the following. Changes may be needed in tying or beaming.

SAMPLE

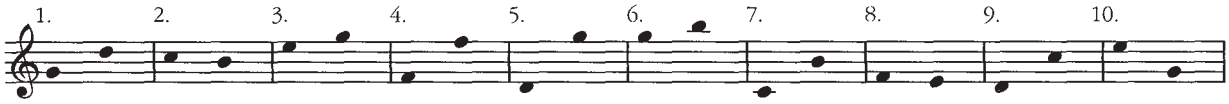
SOLUTION

a.

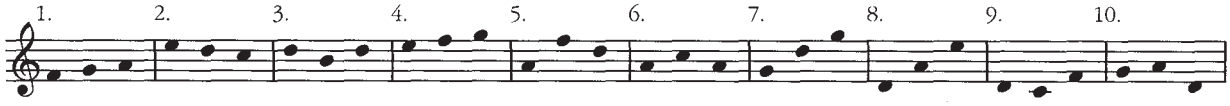
b.

c.

1-5. a. Beam as eighth notes each of the following pairs of notes. Write the stems in the correct direction (or).



b. Beam these as groups of three eighth notes (or).



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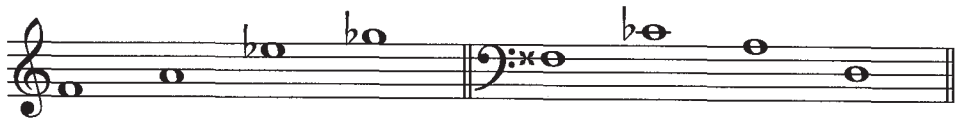
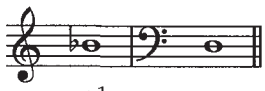
1-6. Write an enharmonic equivalent for each of the following notes.

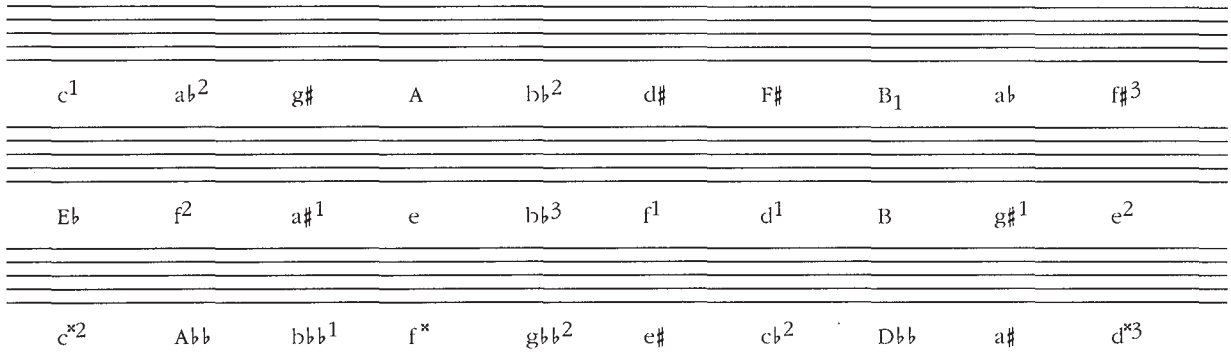


1-7. Write each note in an appropriate clef, being careful to place the note in the right octave.

SAMPLE



$b\flat^1$ d



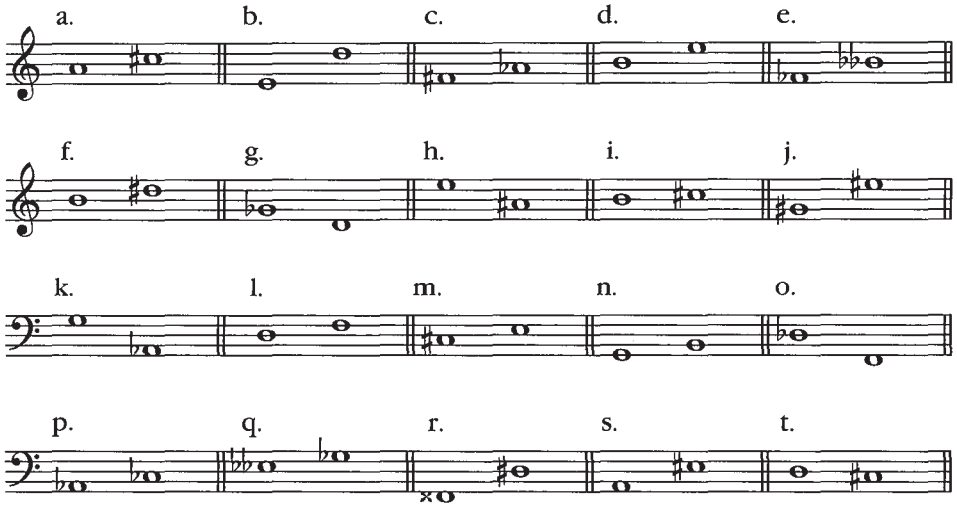
c^1	$a\flat^2$	$g\sharp$	A	$b\flat^2$	$d\sharp$	$F\sharp$	B_1	$a\flat$	$f\sharp^3$
$E\flat$	f^2	$a\sharp^1$	e	$b\flat^3$	f^1	d^1	B	$g\sharp^1$	e^2
c^{x2}	$A\flat\flat$	$b\flat\flat^1$	f^x	$g\flat\flat^2$	$e\sharp$	$c\flat^2$	$D\flat\flat$	$a\sharp$	d^{x3}

1-8. Indicate the Arabic number for all intervals in exercise 1-5a.

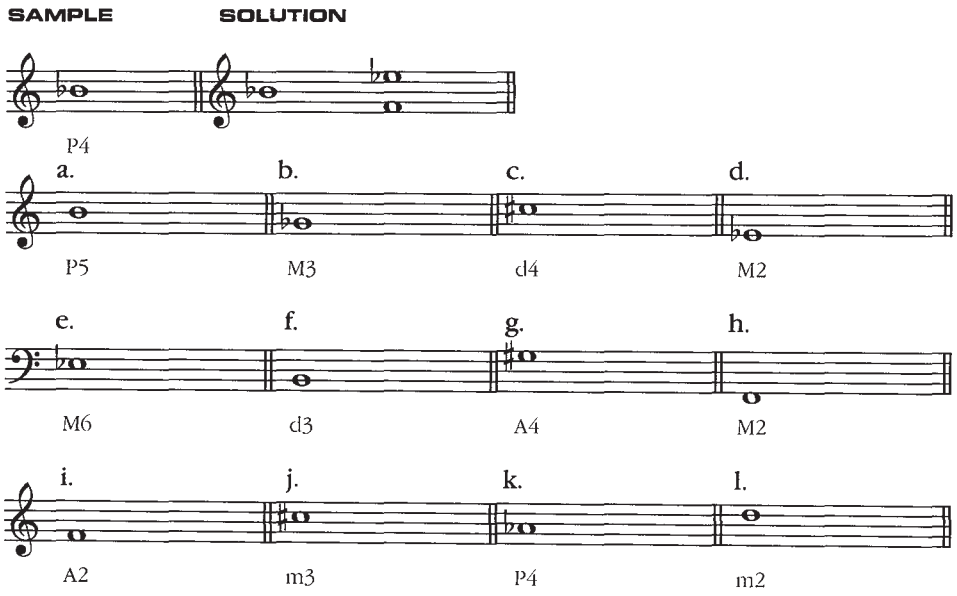
1. _____ 2. _____ 3. _____ 4. _____ 5. _____

6. _____ 7. _____ 8. _____ 9. _____ 10. _____

1-9. Identify these intervals, using the proper abbreviations.



1-10. Write the interval required, above and below the given note.



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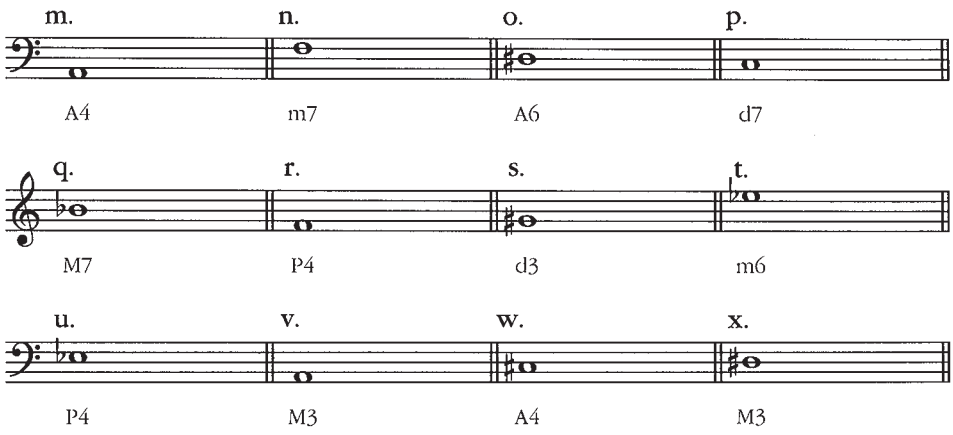
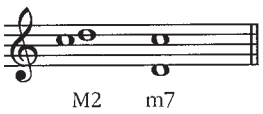
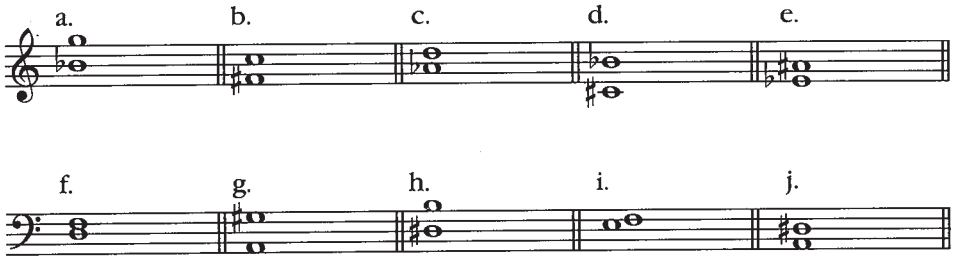
Exercise 1-10. (continued)



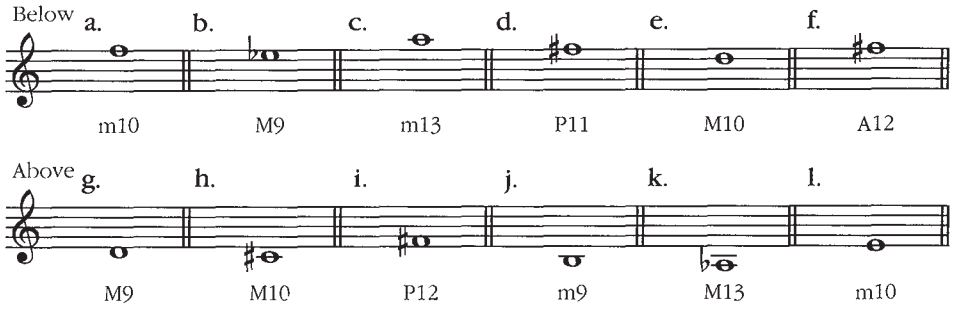
1-11. Identify each interval, then write its inversion and the name of the inversion.

SAMPLE



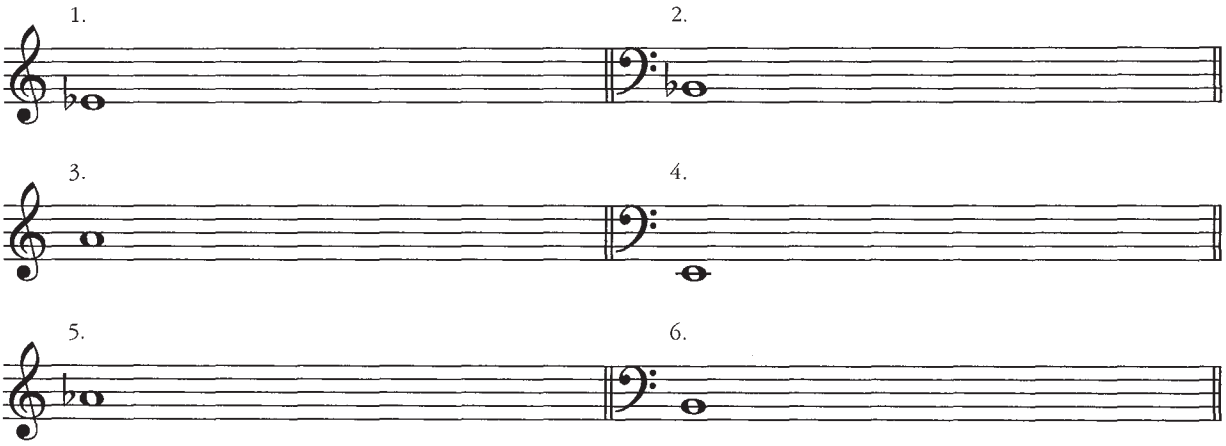


1-12. Write these compound intervals, as indicated.

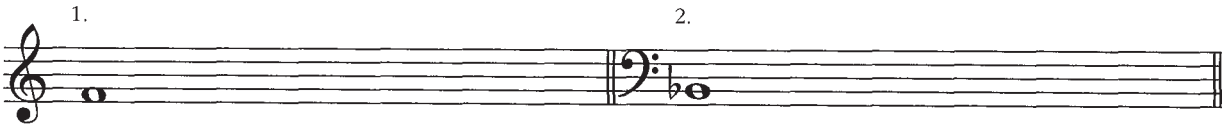


1-13. Write these scales beginning on the given note.

a. Major scales



b. Natural minor scales



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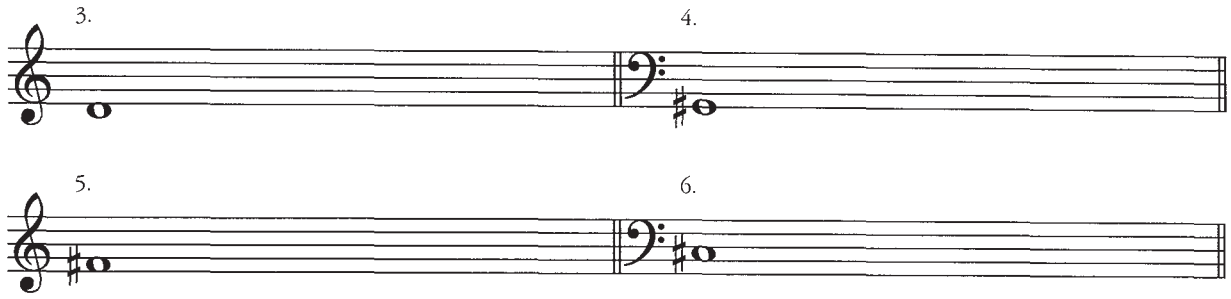
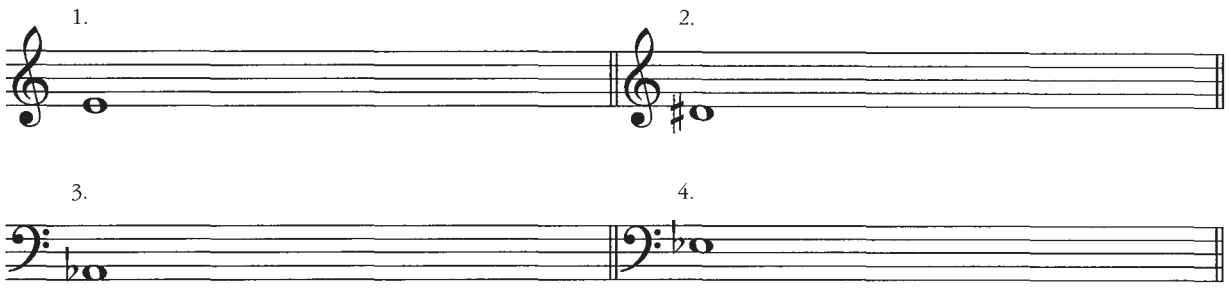
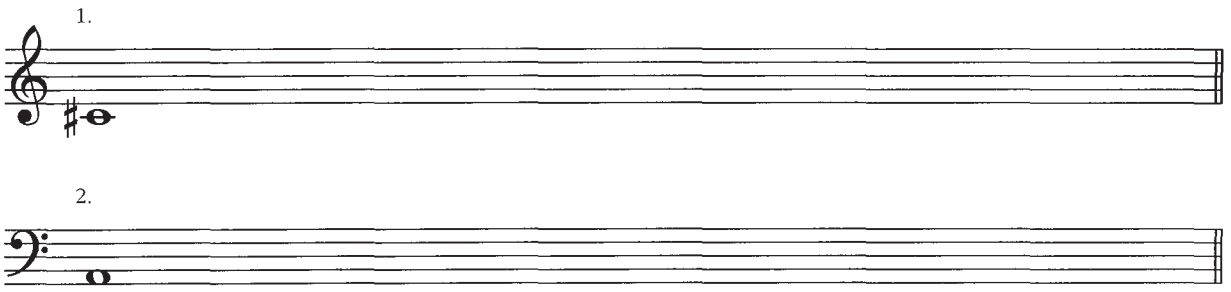
Exercise 1-13. (continued)



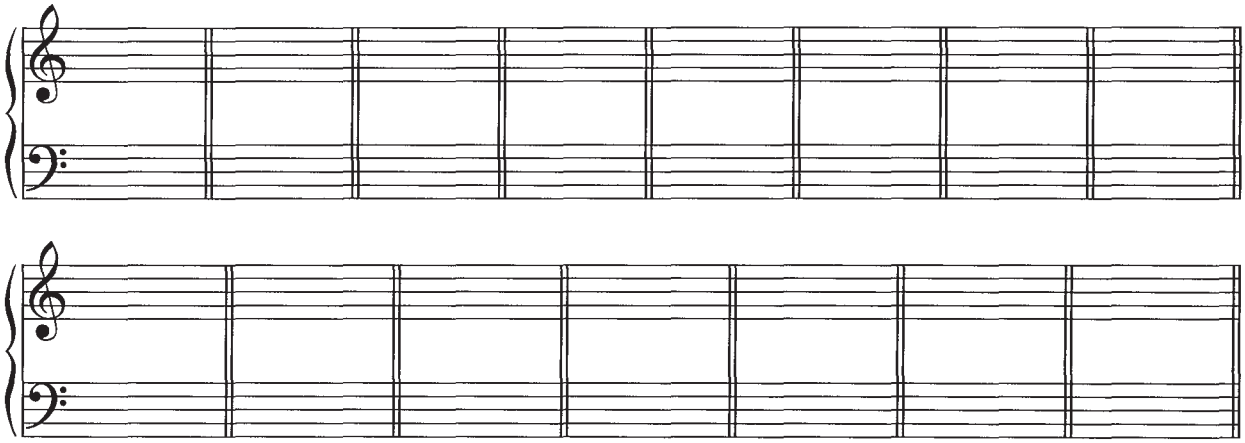
c. Harmonic minor scales



d. Melodic minor scales (both ascending and descending forms)



1-14. Write all key signatures in treble and bass clef.



LABORATORY EXPERIENCES

Exp. 1-1. Using various percussion sounds, create a rhythmic ensemble. The performers play only the notes needed to indicate these metric elements:

a. the basic durations;

b. the first beat of each measure;

c. the divisions of the basic durations;

d. (optional) the subdivisions of the BDs.

Exp. 1-2. Apply the setting in experience 1-1 to the following rhythmic patterns. Maintain the same speed for all basic durations.

a. sixteen bars: four bars of $\frac{2}{4}$, four bars of $\frac{6}{8}$, four bars of $\frac{6}{32}$, four bars of $\frac{2}{2}$;

b. twenty bars: four bars of $\frac{3}{4}$, four bars of $\frac{2}{8}$, four bars of $\frac{9}{8}$, four bars of $\frac{3}{2}$, four bars of $\frac{9}{16}$.

Exp. 1-3. Use the same percussive sounds as in experience 1-1, but divide the ensemble as follows:

a. the basic durations;

b. the strongest (first) beat of each measure plus the secondary accent (in bars with five BDs, place the secondary accent on the third beat);

c. the divisions of the BDs;

d. (optional) the subdivisions of the BDs.

Exp. 1-4. Apply the setting in experience 1-1 to these rhythmic patterns. The same speed should be maintained for all BDs.

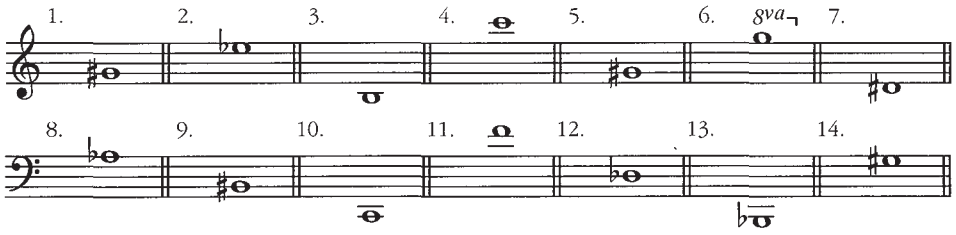
a. sixteen bars: four bars of $\frac{4}{4}$, four bars of $\frac{12}{8}$, four bars of $\frac{4}{2}$, four bars of $\frac{12}{32}$;

b. twenty bars: four bars of $\frac{5}{4}$, four bars of $\frac{4}{8}$, four bars of $\frac{15}{8}$, four bars of $\frac{5}{8}$, four bars of $\frac{4}{1}$.

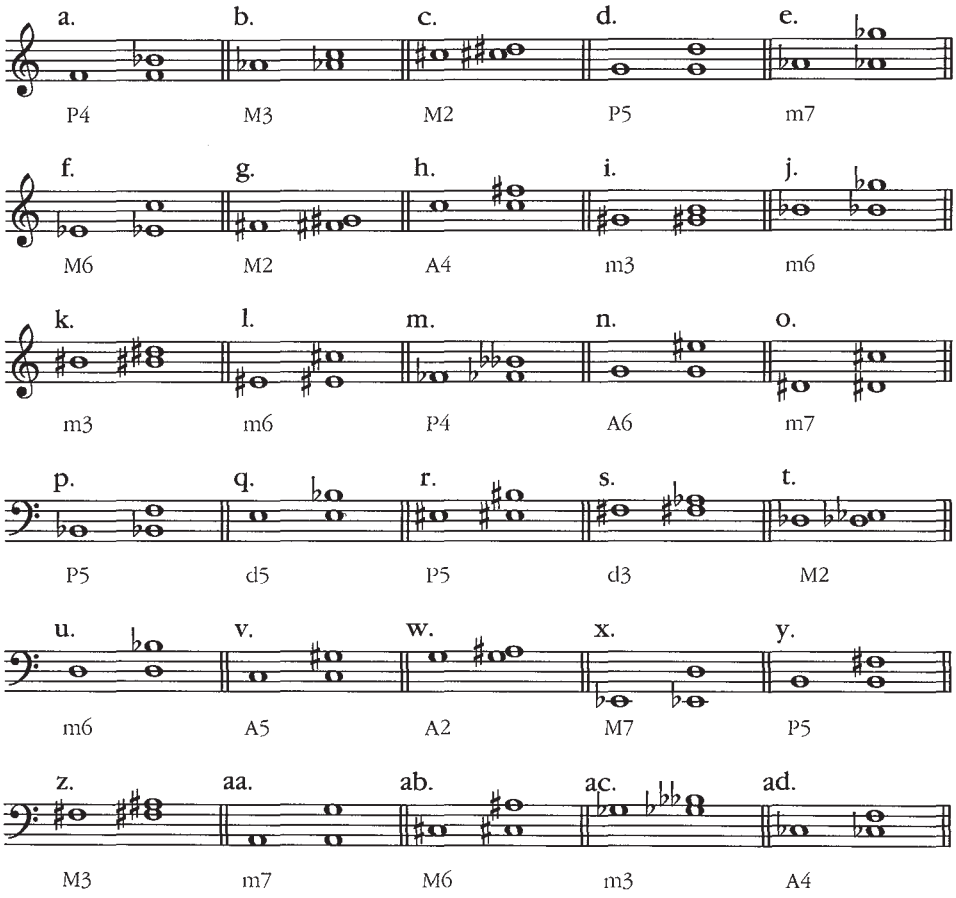
Exp. 1-5. Locate at the keyboard:

a. a^2 $f\sharp^3$ $a\flat$ G $e\flat^1$ $B\flat$ $c\sharp^2$ B1 $g\sharp$ $g\sharp^3$ $E\flat$ $a\sharp^2$;

b. the following notated pitches.



Exp. 1-6. Slowly move a card or sheet of paper across each line of music, from left to right. When you see the single note and the name of the required interval above the given note, stop the card until you have calculated what the correct answer should be, then slide the card further to check your answer. Later, move the card from right to left, identifying the interval before you see the printed answer.



Exp. 1-7. Practice recognizing these items:

a. names of keys when the key signatures are given (major and minor);

b. key signatures when the names of the keys are given.

Devise a drill sheet like that given for the interval drill in experience 1-6.

CHAPTER TWO

Melody and Tonality

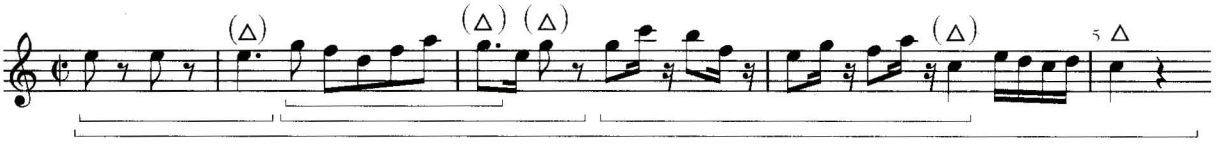
Student Name: _____ Section: _____

Instructor Name: _____ Date: _____

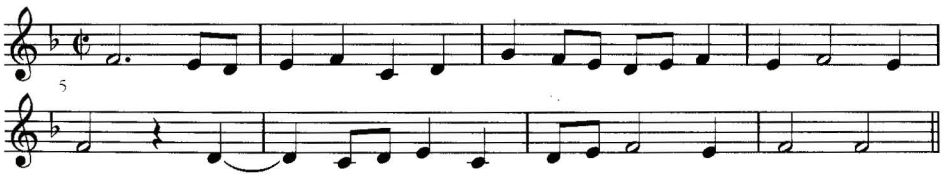
EXERCISES

2-1. Bracket the agogic patterns in the examples below. Write an arrowhead over the agogic accent (thesis) of each pattern. If an agogic accent is subordinated by a longer note following, write a parenthesis around the arrow. Don't overlook rests in determining the effective length of the notes. If a measure does not contain an agogic accent, mark the metric accent with an (∧). Do not put an arrowhead on a rest or a tied note.

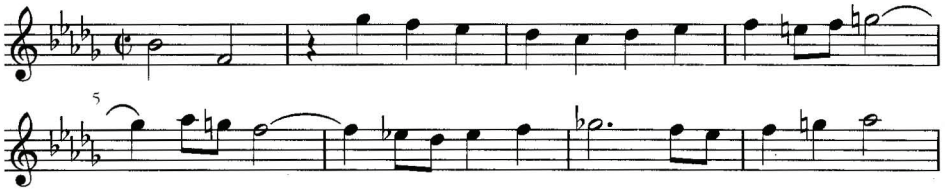
SAMPLE



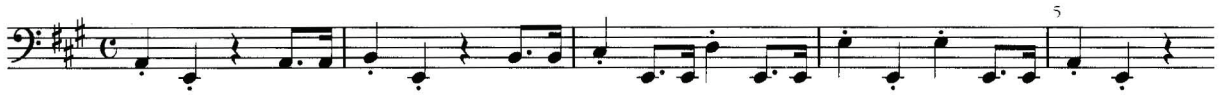
a. Cavendish: *Zephyrus Brings the Time*



b. Bach: *Well-Tempered Clavier* I, Fugue 22



c. Schubert: *An Sylvia,* D. 891



d. Mozart: Symphony No. 40, K. 550, third movement

2-2. Write a four-bar rhythmic example for each of the given meter signatures. In each pattern include at least three agogic accents that confirm the meter. Each measure should have a different rhythm.

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

b. $\frac{4}{4}$

c. $\frac{6}{8}$

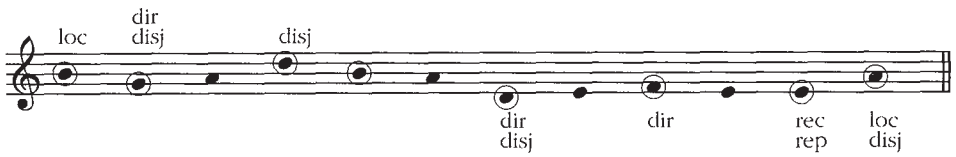
2-3. For each of the given meters, write a four-measure rhythmic pattern containing at least two subordinate agogic accents. Include at least one bar in which the agogic accent occurs *not* on the first beat but later in the measure.

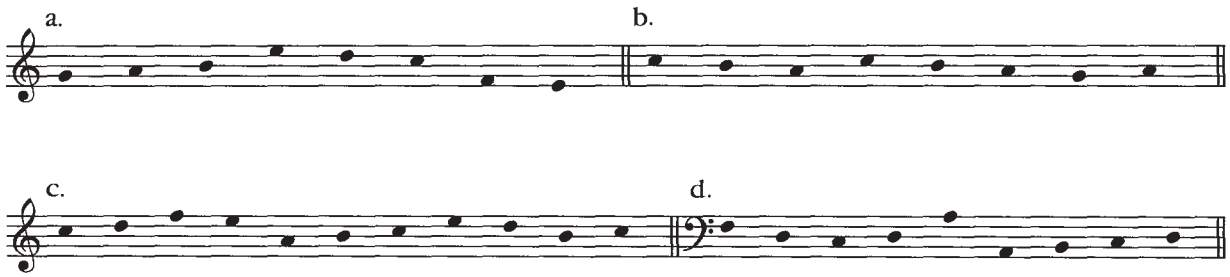
a. $\frac{2}{2}$

b. $\frac{5}{4}$

2-4. Circle the notes in the following melodies that gain prominence through contour. List the factors that cause the prominence.

SAMPLE





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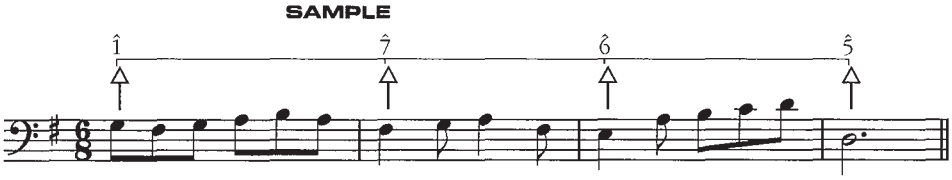
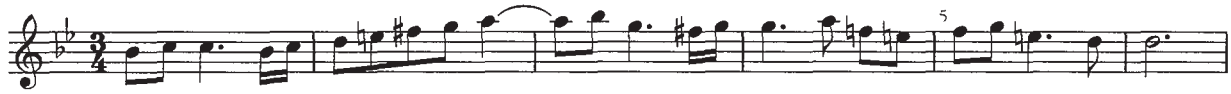
2-5. Identify (with an upward stemmed arrow) the emergent tones in these melodies. Keep in mind that both rhythm and contour must be taken into account to determine the emergent tone in each measure. It may be helpful to identify two emergent tones in a few measures, but try to select one emergent tone per bar wherever possible. Mark step progressions (remember that to be part of a step progression a tone must be emergent).

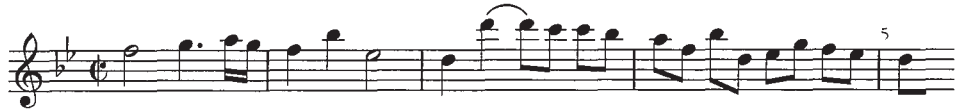
SAMPLE



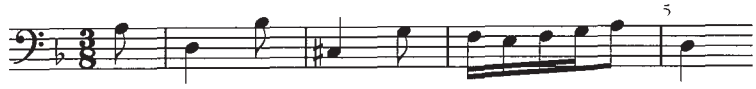
a. Handel: Klavier Suite XVI, HHA iv/6, 42, Sarabande



b. Handel: Concerto Grosso in B-flat, HHA iv/12, 17, second movement



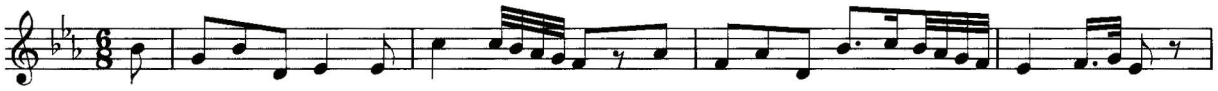
c. Bach: Suite No. 2 for violoncello solo, BWV 1008, Gigue



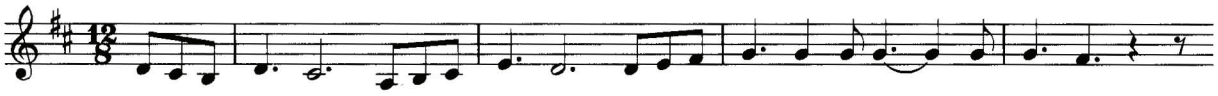
d. Mozart: Music for Two Woodwinds, K. 487, No. 10

Exercise 2-5. (continued)

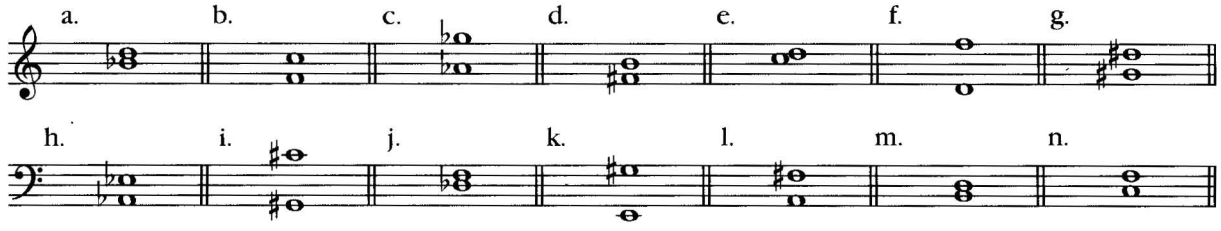
e. Schubert: Symphony No. 6, D. 589, second movement



f. Tchaikovsky: Symphony No. 5, second movement



2-6. Draw a circle around the root of each interval.



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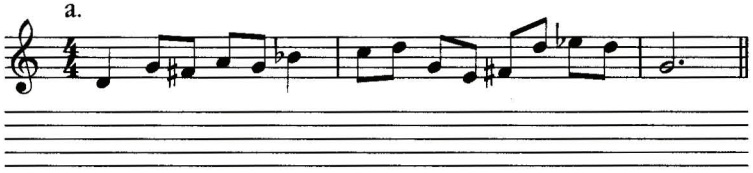
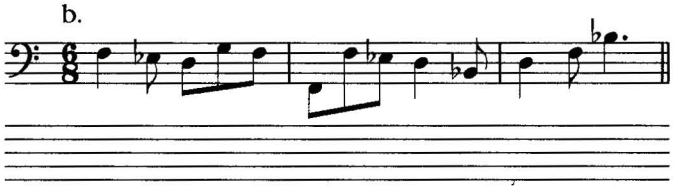
2-7. Write the pitch complement for each of these melodies.

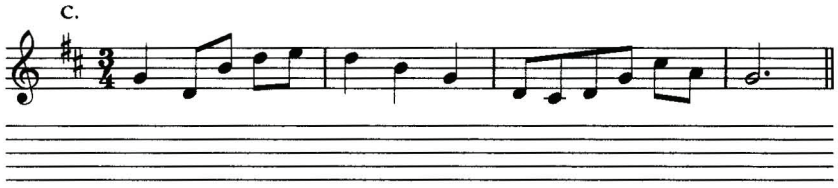
a.



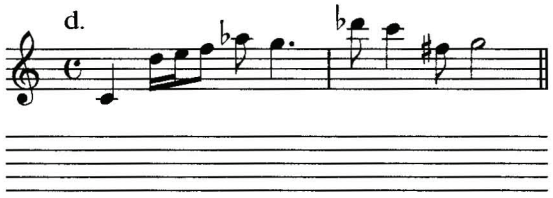
b.



c.

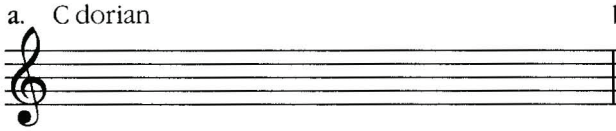


d.

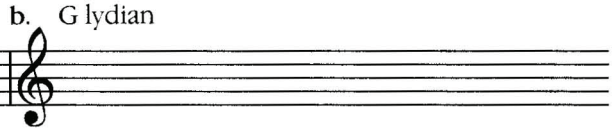


2-8. Write the scales indicated. Do not use key signatures; write each necessary sharp or flat.

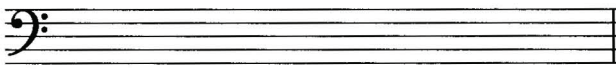
a. C dorian



b. G lydian



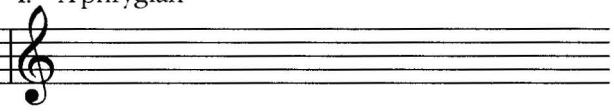
c. C♯ aeolian



d. F mixolydian

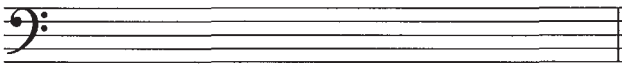
e. E dorian

f. A phrygian



Exercise 2-8. (continued)

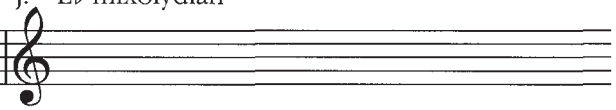
g. F♯ ionian



h. B♭ lydian

i. F♯ phrygian

j. E♭ mixolydian



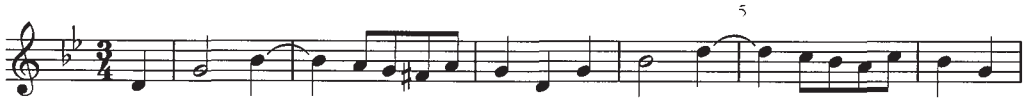
2-9. For each of the given melodies, do the following:

a. Write the pitch complement.

b. Mark the emergent tones with upward arrows.

c. Write the scale used for the melody.

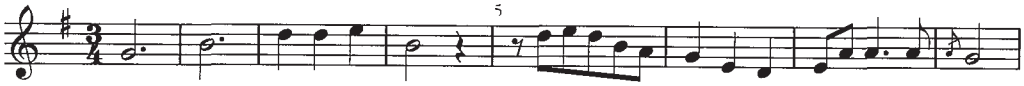
a. Mozart: Symphony No. 40, K. 550, third movement



pitch complement

scale

b. Dvorak: Sonatina in G for violin and piano, op. 100, first movement



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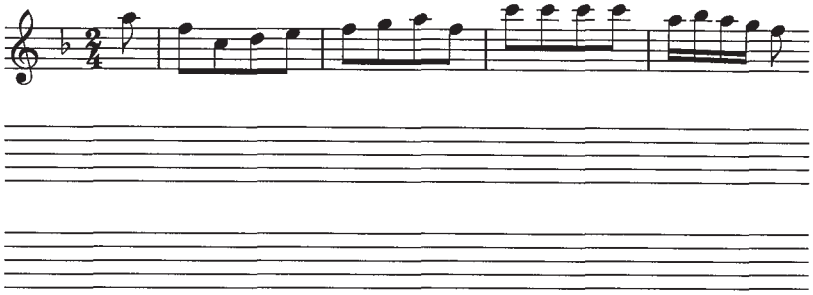
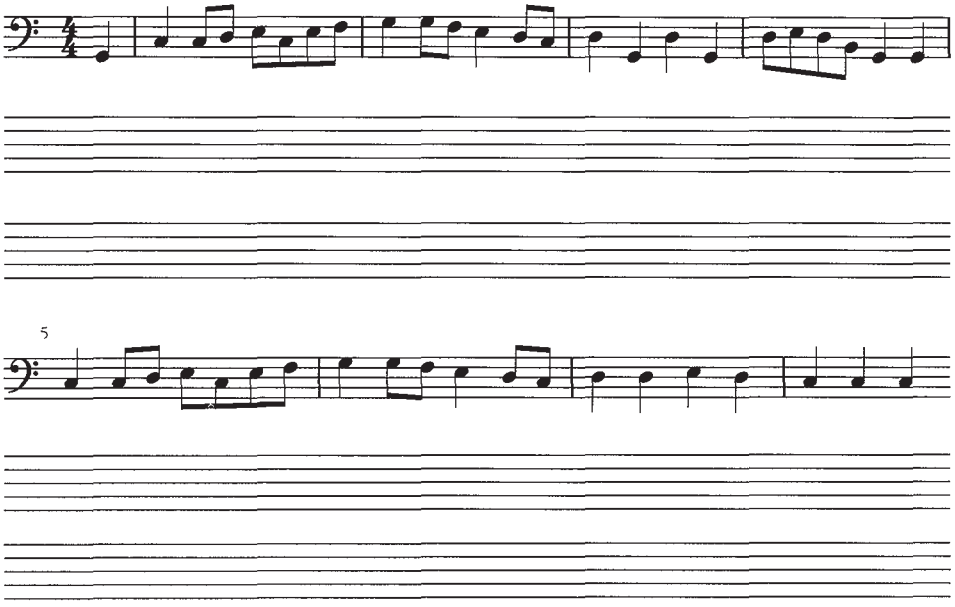
Exercise 2-9. (continued)

c. Haydn: String Quartet, op. 74, no. 2, fourth movement

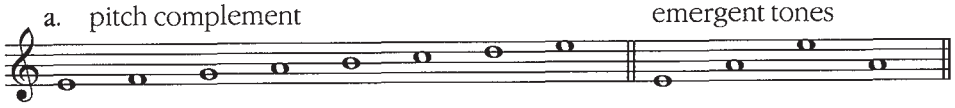


d. "The Gift to be Simple" (Shaker melody)

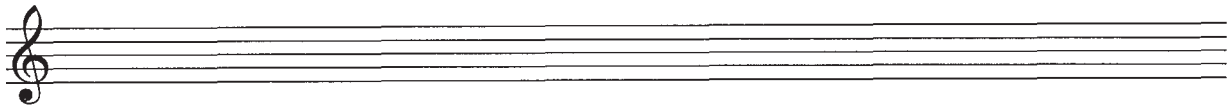


2-10. Compose melodic phrases that meet the requirements given. Select the pitches and rhythms to create the specified emergent tones. Name the tonic and scale used.

a. pitch complement

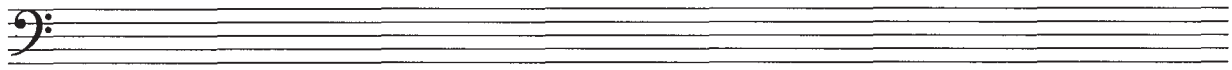


emergent tones

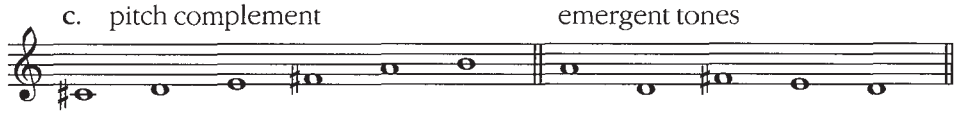


b. pitch complement

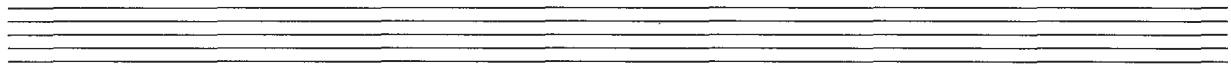
emergent tones



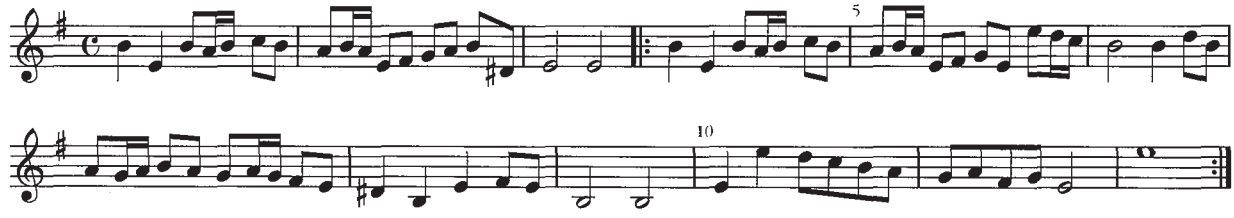
c. pitch complement

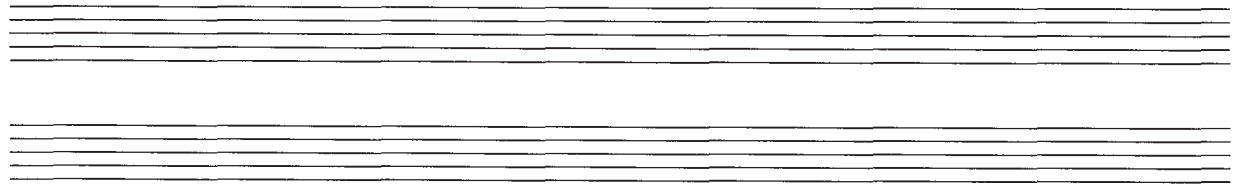


emergent tones



2-11. Write the pitch complement of this melody, then determine the tonic and write the scale (showing any variant degrees).





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Instructor Name: _____ Date: _____

2-12. a. Write the letter name of the submediant degree in these scales:

A major _____ E♭ major _____ B mixolydian _____

F♯ dorian _____ G aeolian _____

b. Write the letter name of the dominant degree in these scales:

D phrygian _____ A♭ lydian _____ B♭ major _____

E ionian _____ C♯ locrian _____

c. In what scale is D the supertonic? _____

the submediant? _____ the dominant? _____

the subtonic? _____

2-13. Compose two melodies for which you decide the pitch complement, the emergent tones, and the tonic. Indicate your decisions for these items for each melody.

a. melody in $\frac{4}{4}$ time:

1. pitch complement

2. emergent tones

3. melody

b. melody in $\frac{6}{8}$ time:

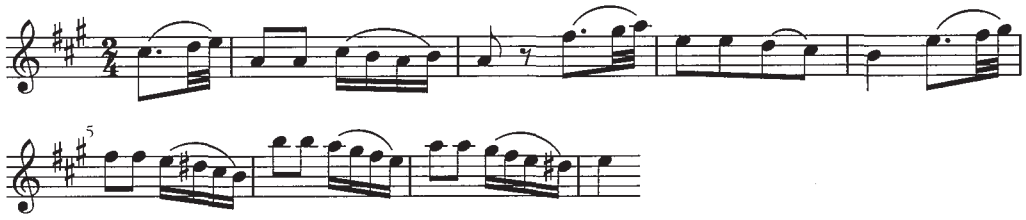
1. pitch complement

2. emergent tones

3. melody

2-14. Indicate the keys used in the following modulating melodies.

a. Haydn: Piano Sonata in C-Sharp Minor, Hob. XVI:36, second movement



first key _____ second key _____

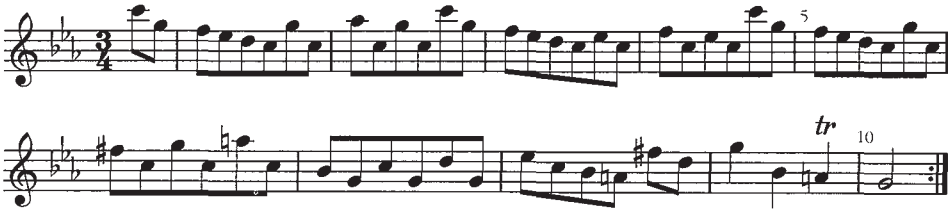
b. Mozart: Minuet and Trio, K. 1

first key _____ second key _____

c. Mozart: Minuet and Trio, K. 1

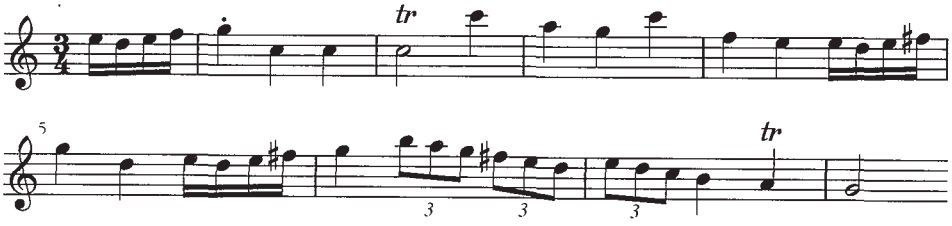
first key _____ second key _____

d. Haydn: Piano Sonata in C Major, Hob. XVI:3, third movement



first key _____ second key _____

e. Haydn: Piano Sonata in C Major, Hob. XVI:3, third movement



first key _____ second key _____

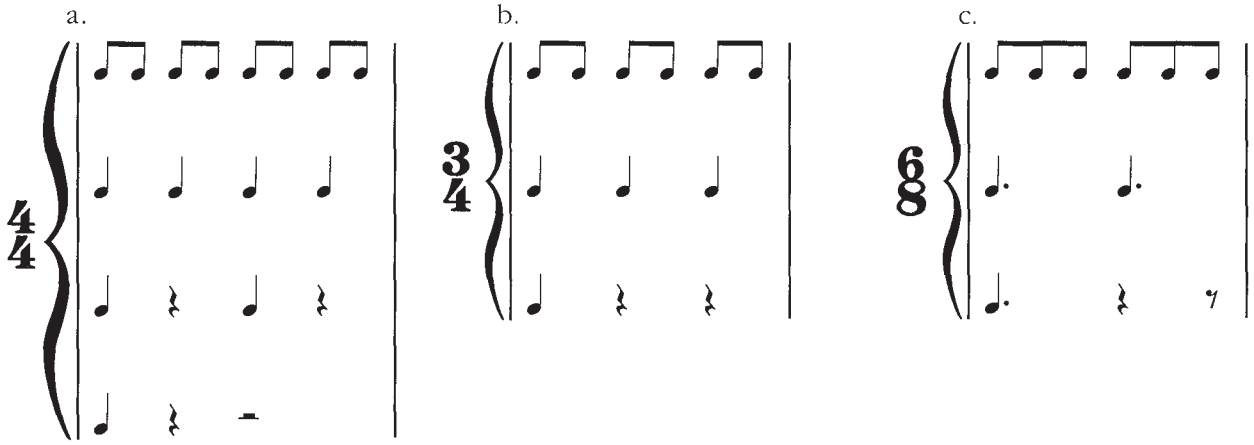
Student Name: _____ Section: _____

Instructor Name: _____ Date: _____

LABORATORY EXPERIENCES

Exp. 2-1. The class uses their bodies, drums, or other instruments to create percussive sounds in the metric patterns written below. Individual solos, two measures in length, should be improvised over this. The soloist should use agogic accents to affirm the traditional metric accents but still try to create a pattern of greater interest than the background patterns. The entire class then repeats the soloist's rhythm. Discuss the location and effect of the agogic accents. Continue the procedure until all have had a solo.

Background metric patterns



Exp. 2-2. Using the same metric background patterns as in laboratory experience 2-1, improvise individual solos that are the same length, but use agogic accents that are syncopations, conflicting with the metric accents.

Exp. 2-3. Using the same metric background patterns, add two soloists, one using meter-affirming agogic accents and the other using syncopations.

Exp. 2-4. Select a few melodies from early chapters in a sight-singing text, in both major and minor keys.

a. Play (or sing) the whole melody.

b. Play the emergent tones that occur with agogic accents.

c. Play each passage in which contour is an important factor affecting emergent tones. Are tones gaining special prominence through skips? change of direction? recurrence? repetition?

d. Play the emergent tones, one or two per measure, for the whole melody.

e. Play (or sing) the whole melody, noticing the emergent tones in the context of the whole melody.

Exp. 2-5. Working in small groups, select a few melodies in major and minor keys (perhaps from a sight-singing text).

a. Sing or play the melody.

b. Play the pitch complement.

c. Choose the emergent tones. Discuss the factors that gave these tones their prominence.

d. Discuss these issues: What is the tonic? Is the tonality clear? What scale is used? Play and sing the scale.

APPENDIX A

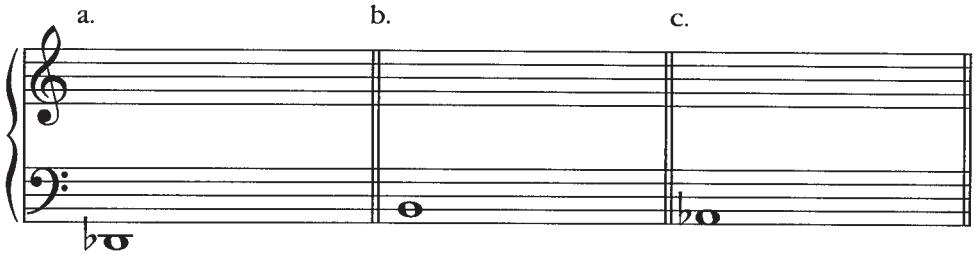
Aspects of Acoustics

Student Name: _____ Section: _____

Instructor Name: _____ Date: _____

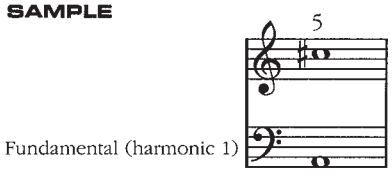
EXERCISES

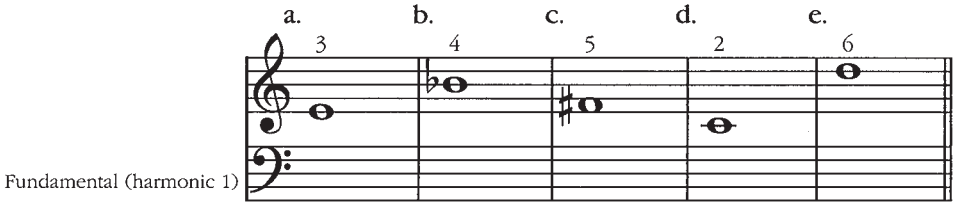
A-1. Each time a tone is produced, the intervals of the harmonic series shown in example A-2 in the textbook are repeated in exactly this relationship above the fundamental. To determine what the tones of the harmonic series would be above a given fundamental, one has only to transpose these intervals. Write the first five harmonics or partials above each of these fundamental tones.



A-2. Each of the given tones is a harmonic in a different series. The number above the tone tells you the harmonic. Determine the series and write the fundamental tone of that series.

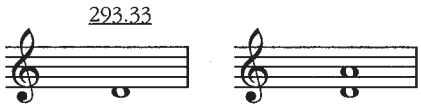
SAMPLE



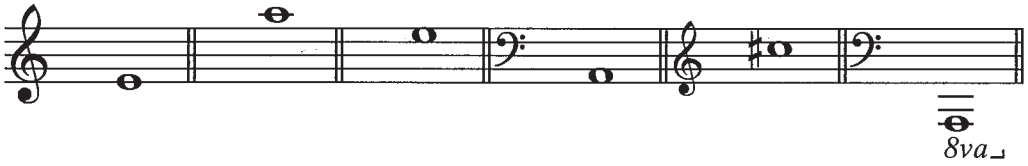


A-3. Calculate the frequencies of the tones shown, starting with a^1 as 440 Hz and using the ratios found in the harmonic series.

SAMPLE **SOLUTION**



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



LABORATORY EXPERIENCE

Exp. A-1. Using the instruments available in your class, do a variety of experiments and demonstrations to illustrate: (1) harmonics and overtones, (2) resonance, (3) tuning systems and methods, (4) the relationship of length or tension to pitch. Using the instrument you are most familiar with, plan a portion of such a demonstration for your class.

Some possibilities include the following.

1. overtones

   brass: lip changes with each fingering or position

   woodwinds: overblowing, register keys

   strings: natural harmonics, artificial harmonics

2. resonance

   brass: dampening the bell, inserting mutes, and so on

   strings: mute on bridge

   piano: opening and closing lid

3. tuning systems and methods

   brass: out-of-tune fingerings (e.g., valve 3), tuning slides, lip adjustments

   woodwinds: tuning barrel, out-of-tune fingerings (e.g., trill fingerings), embouchure adjustments

   strings: fingering system, tuning method

4. relationship of length or tension to pitch

   brass: length of tubing for valves, embouchure tension

   woodwind: placement of holes (length), embouchure (tension)

   strings: placement of fingers, tightening tuning pegs

   piano: length of strings

Vol	Book	Page	Change
	Text		
1	tx	10	ex.1-13c 2/2 not 2/4
1	tx	41	ex.2-20 add an up-arrow above the 5^ so it is an emergent tone.
1	tx	52	ex.2-38 m.3 1st note is C, not B
1	tx	63	2nd from last paragraph, line 2: change p.000 to p.399
1	tx	76	in parag. under "Types of Triads" line 5, change "minor third" to "major third".
1	tx	82	table 4-1: vii$^{\emptyset 7}$ needs slash on the o = vii$^{\emptyset 7}$.
1	tx	83	table 4-2: ii$^{\emptyset 7}$ should have slash on the o: = ii$^{\emptyset 7}$.
1	tx	106	ex.7-5b 1st note in alto = G, not F
1	tx	116	ex.11-9 should be "bin ich nit"; "mit" is wrong.
1	tx	200	ex.14-2b in m.8 down-arrow belongs between 1st & 2nd 8ths, HC; rest of bar in next phrase.
1	tx	200	ex.14-2b m.5 LH has C on top.
1	tx	222	ex.15-14d in m.1 & 3 the brackets with vR should be [vR], not including the Sx2 or S. [See extra sheet]
			m.1 m.3 Sx2 S [vR [vR
1	tx	223	ex .15-15 m.6 bracket with vR should not include the S, hence [vR
1	tx	223	ex. 15-15 m.12 the bracket with vR should not include the S, hence [vR. See corrected version below.
			m.6 m.12 Sx2 S [vR [vR [Also, see extra sheet.]
1	tx	242	ex.16-10 m.1 L above the bass part in LH
1	tx	283	ex.19-5 key is C: not G:
1	tx	296	ex.20-3 m.7 last note in sop. = D, not E
1	tx	298	ex.20-6 m.5: vii$^{\emptyset 7}$ not ii$^{\emptyset 7}$
1	tx	309	ex.21-2 title incomplete:
1	tx	310	ex.21-4 change caption to read: Symmetrical and asymmetrical units
1	tx	320	ex.21-16b Key is c: (minor)
1	tx	353	fig.23-5 meas.no. don't match score arrows. See list of 13 erroneous numbers, from m.14 to m.50:

15,19,23,29,33,43,(50) should be replaced with 14,18,22,32,38,42,(48) respectively as below (in bold & underlined): [See extra sheet]

1	wb	111	exr.10-6f The set of "643" numbers belong under the 2nd note, not the 1st.
1	wb	130	exr.12-4 m.6 V --omit 4 and the 3
1	wb	150	Sonata in A major, Hob. XVI:5, not in G!
1	wb	163	exr15-1, line 6, change p.000 to p.234
1	wb	248	exr.20-2e key sig. of voice OK,but piano must be one flat, pp248-249
1	wb	280	exr.22-1j m.14 LH beat 3 should be D#, not D natural
1	wb	306	exr.23-1f sys 7 key sig. missing in piano part: must have one flat.