Livro

All Twelve: Dodecaphonic Sources for Contemporary Composition

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All Twelve. Dodecaphonic Sources for Contemporary Composition

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Resumo: Aqui é disponibilizado o livro *All Twelve. Dodecaphonic Sources for Contemporary Composition* , de Jerry Gates. A obra apresenta uma abordagem prática de técnicas de composição a partir de conceitos operacionais do dodecafonismo.

Palavras-Chave: Composição, Dodecafonismo, Harmonia.

Abstract: The whole book *All Twelve. Dodecaphonic Sources for Contemporary Composition*, of Jerry Gates is here available. It deals with practical exploration of dodecaphonic techniques for composition.

Keywords: Composition, Dodecaphonism, Harmony

Introduction

A composer frequently needs to work fast, efficiently and cohesively to get the completed composition, song or film cues to the client before deadline. Over time, it has become clear to me that composers also need many tools, or techniques, in their arsenal to create this music and meet the demand. This is particularly true in the world of commercial music where deadlines, and the threat of *never working in this town again*, are ways of life. The thought of the downbeat, or beginning of the recording session, is at 9 AM and you are still composing the music at 8 AM, can be a scary feeling!

Presenting techniques pioneered by Los Angeles film composer/orchestrator Jack Smalley and the late composer George Tremblay, *All Twelve – Dodecaphonic Sources for Contemporary Composition,* will give the seasoned professional and the budding amateur alike more tools to explore and create with. These techniques are derived from Dodecaphonic, or 12 - Tone as they are more commonly known, sources. Because of the random nature that the notes tend to appear in, it is very likely that you will uncover many interesting, and "ear opening," melodies/chord progressions that you might not otherwise create. One can follow the technique's to create new and exciting music or use them as methods to get your "composer's ear" warmed up. This second process can be equated to

1 Jerry Gates é compositor, educador, arranjador e baixista, com mais de 35 anos de experiência na indústria musical. Recentemente publicou *Arranging for Horns* (Berklee Press,2015). Link: http://www.jerrygatesmusic.com , Para ouvir algumas de suas composições, https://soundcloud.com/jerrygatescomp , https://www.reverbnation.com/jerrygates . Jerry Gates cedeu especialmente para a *Revista Dramaturgias* a publicação de seu livro. Os exemplos musicais estão disponíveis na plataforma Soundcloud, na conta LABDRAMA. Ou no link: https://soundcloud.com/user-940155328/sets/all-twelve-jerry-gates . O livro foi rediagramado para esta edição.

an instrumentalist playing scales or other material to get their fingers loosened up before a performance – sometimes the ear needs to have a little help getting warmed up to create too.

The reader should be familiar with an intermediate to advanced level of harmony/music theory to get the most out of this book. The techniques themselves are not difficult to comprehend. However, the extent to which you can apply them will be limited only by your lack of understanding in the above areas.

Above all, have fun exploring this material. Try not to discard an idea because it doesn't analyze a particular way that you might have been taught. Trust your "ear."

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Glossary

Anticipation – The sounding of a note, pitch or rhythm earlier than expected. Typically, the anticipated note value is a quarter, eighth, or sixteenth in duration. However, longer note values are possible.

Delayed Attack – The sounding of a note, pitch or rhythm later than expected. As in the case of anticipated notes, the Delayed Attack's note value typically is a quarter, eighth, or sixteenth in duration. Again, longer note values are also possible.

Diatonic Restriction – The process of extracting notes or pitches, in order of appearance, from a 12 –note source that conforms to a predetermined scale or key.

Dodecaphonic – Twelve different notes or pitches, also known as "12-Tone."

Harmonic Motion – Frequency of harmonic change, or how often one chord moves to the next.

Hexachord – A six - note chord or group of notes. In a 12 – tone row, the first six pitches (or the second six pitches) may be called hexachords.

Order of Appearance – The order, from left to right, in which a group of pitches presents

themselves.

Permutation – The process of reordering a given group of pitches, or row, to create a mathematical variation of the original.

Reharmonization – The process of revising the original harmony of a song or composition.

Retrograde – Reverse order of pitches.

Row - Linear grouping of pitches in a specific order. Often used in the context of Dodecaphonic (12 -Tone) music.

Source Material – A collection of initial pitches, motives, ideas and phrases that will be developed into a composition.

Triad – A vertical grouping of three notes. This grouping typically has a chord quality (sound) of major, minor, augmented or diminished - but doesn't have to (see Vertical Shape). Triads can be *any* three notes sounding together.

Vertical Shape - Group of two or more notes played simultaneously that form a particular sound. This grouping does not have to sound major, minor, augmented or diminished. If 3 notes are sounded at once, a triad is formed.

CD Play List[2]

1) Chapter 2 – Example 2
2) Chapter 2 – Example 3
3) Chapter 2 – Example 4
4) Chapter 2 – Example 5
5) Chapter 2 – Example 6
6) Chapter 3 – Example 2
7) Chapter 3 – Example 3
8) Chapter 3 – Example 4
9) Chapter 4 – Example 2
10) Chapter 6 – Example 3
11) Chapter 6 – Example 4
12) Chapter 6 – Example 5
13) Chapter 6 – Example 6
14) Chapter 7 – Example 2
15) Chapter 7 – Example 4
16) Chapter 7 – Example 5
17) Chapter 8 - Example 4
18) Chapter 8 – Example 5
19) Chapter 8 – Example 7/8

2 Os exemplos musicais estarão disponíveis na plataforma *Soundcloud*.

Chapter 1 – Initial Row Construction

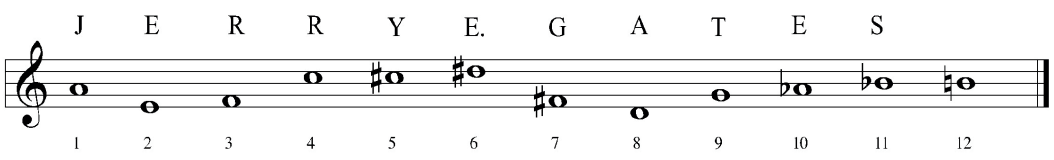
There are hundreds, perhaps thousands of ways to write out twelve pitches without repeating a single note. Sometimes a composer will intentionally create a linear ordering of twelve different pitches (a "row") with certain predetermined intervals next to each other. This composer is looking for a particular sound palette to work with and knows that a specific combination of notes, in a given order, will achieve this goal – the sound that is being created is already known by the composer. In this case there aren't many surprises when the composition is being written. This can be a great tool, particularly in the world of commercial music, where "time is money" and there isn't a great deal of room for experimentation. A downside to this approach is that it is possible to find that we are often using similar groupings of notes for all of our compositions. This happens generally because we get comfortable with the groupings and refrain from trying something new. Perhaps a new approach for some fresh perspective is in order.

Example 1 represents a method for a random ordering of a 12 - note group (row) using the alphabet, your name (or any words/letters that you want to substitute) and the twelve pitches as a guide.

Ex. 1

For Letters:	**Use Note:**
A, M, Y	C
B, N, Z	C# (Db)
C, O	D
D, P	D# (Eb)
E, Q	E
F, R	F
G, S	F# (Gb)
H, T	G
I, U	G# (Ab)
J, V	A
K, W	A# (Bb)
L , X	B

Ex. 2



Refer to examples 1 & 2. Using my name, JERRY E. GATES, will give me 11 pitches out of the 12 that I need. The twelfth note will be the last one available. The "J" in JERRY

corresponds to the note A. The "E" in JERRY coincidentally is the same as note E. The first "R" matches the note F. Now what do we do with the second "R" since the note F is already taken? There are two possibilities.

The first is that we can go to the top of the note list and use the first unused note. In this case, and my choice, is to use the note C. This note has not yet been used. The second possibility, which is a little less random, is to choose *any* note that has not been used. Either choice is acceptable. The main idea is to come up with a 12 note ordering that is fairly random.

Next in line is the "Y" in my name. The note C has been already taken so I will go to the next unused note which is C#(Db). The letter "E" is an *any* note choice because I've decided that I would like to choose a note from those that are remaining. I chose D#(Eb). The "G" in Gates represents note F#. Letter "A" is also an *any* note choice, the note D and "T" corresponds to the note G. Letters "E" and "S" in GATES are the unused notes Ab(G#) and Bb(A#). This brings me to the only note left which is B. My ordering of these pitches, or row, then consists of notes A, E, F, C, C#, D#, F#, D, G, Ab, Bb & B.

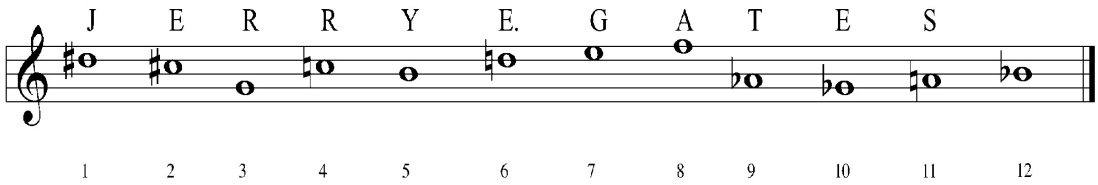
Example 3 represents a second method that can be used to assemble a 12 pitch ordering of notes using the alphabet and again my name as a guide. Notice that the difference between examples 1 & 3 is the way that the alphabet is laid out. Follow the same procedure as in example 1. This time the "J" in Jerry now represents the pitch D#. The letter "E" represents C# and so on. In example 4, it can be immediately observed that this second method gives us a very different ordering of pitches.

Ex. 3

For Letters:	**Use Note:**
A, B, C	C
D, E, F	C# (Db)
G, H	D
I, J	D# (Eb)
K, L	E
M, N	F
O, P	F# (Gb)
Q, R	G
S, T	G# (Ab)
U, V	A
W, X	A# (Bb)
Y, Z	B

Example 4 demonstrates the completed 12 - note row using the second method.

Ex. 4



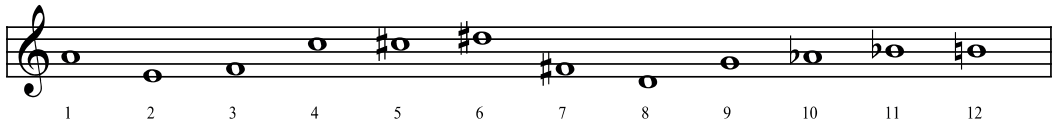
Now that we have some pitches to work with we can begin to compose.

Chapter 2 – Diatonic Restriction

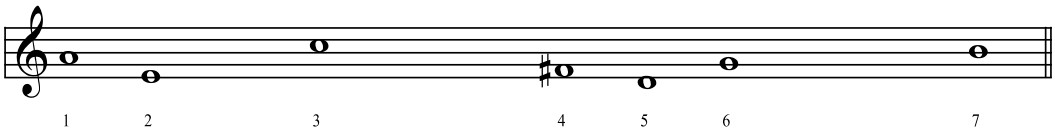
It is often desirable to extract groups or collections of pitches from our 12- note row as source material. This is done because we know that these specific pitches will yield a particular sound or effect. In this chapter we will explore the concept of extracting pitches that apply to a particular key center or tonality. Typically, seven pitches are chosen.

Example 1 illustrates how the restriction process works. Any key or tonality may be used. For this example we will use the key of G Major. We begin with our 12 - note grouping from the previous chapter. Once we have extracted, *in order of appearance*, the 7 diatonic notes from G Major we can then renumber the notes 1 through 7. The remaining 5 notes will be used at a later time.

Ex. 1 - Original Chosen Pitches

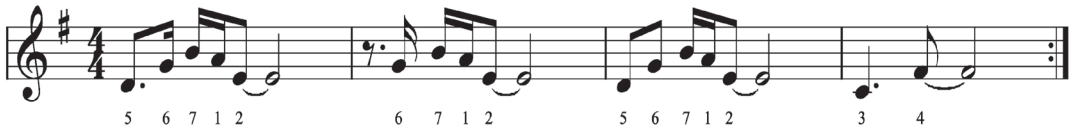


Extracted and Renumbered Pitches From the Key of G



The extracted seven notes can then be used individually as melody, harmony or both together at the same time. Examples 2 through 6 will help demonstrate this technique.

Ex. 2

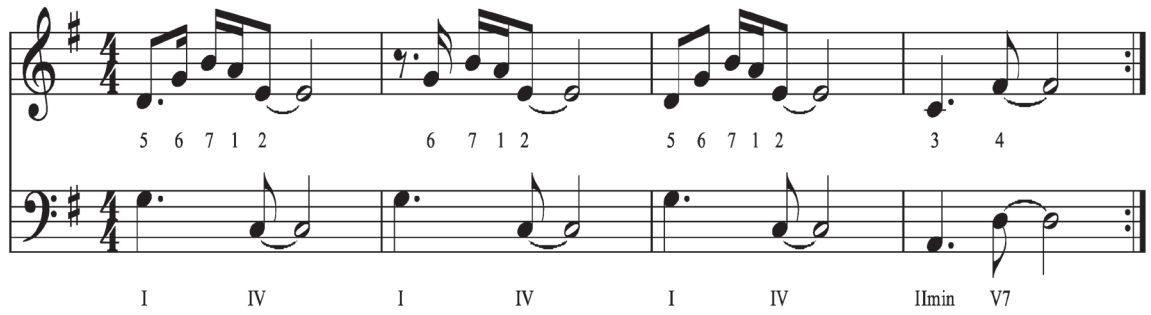


In example 2, a melody has been constructed using the extracted 7 notes, in order of appearance, from the G Major scale. The melody starts on note 5, the **D**, and continues through the group moving next to notes 6,7,1 and then 2 (**G, B, A & E**).

This first melodic phrase employs 5 notes of the diatonic group and is then varied using traditional rhythmic variations in measures 2 & 3. Finally there is a cadence point in measure 4, which uses the remaining two notes of the 7 - note group (**C & F#**). Notice that I did not start the melody on **A**, or note number 1. I could have, but while playing through the available pitches I decided to use a melodic phrase that started on the pitch **D**.

Example 3 adds a simple bass line harmonization using **G** to **C** three times in measures 1-3 and the notes **A** and **D** in measure 4. The arbitrary choice of these diatonic bass notes suggests a simple traditional harmonization of G Major to C Major (I to IV) in measures 1-3. This is followed by a cadence of Amin7 to D7 (IImin7 to V7) in the final measure. While this basic progression works perfectly well, inverting chord voicings (by using alternate bass notes), allows other possibilities.

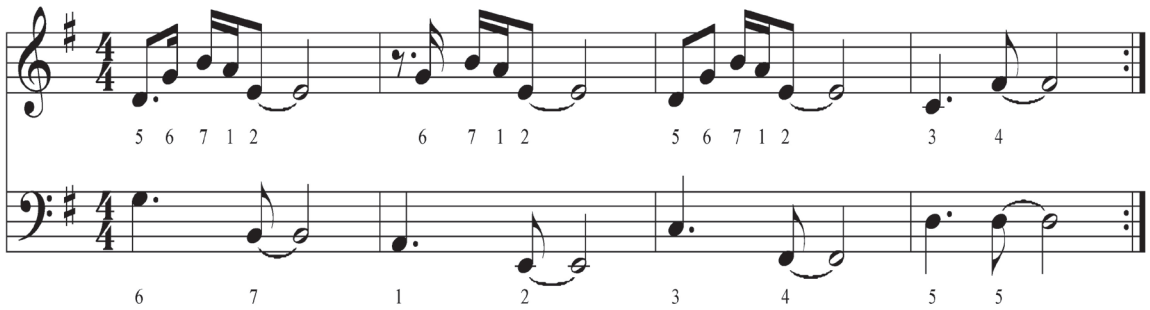
Ex. 3



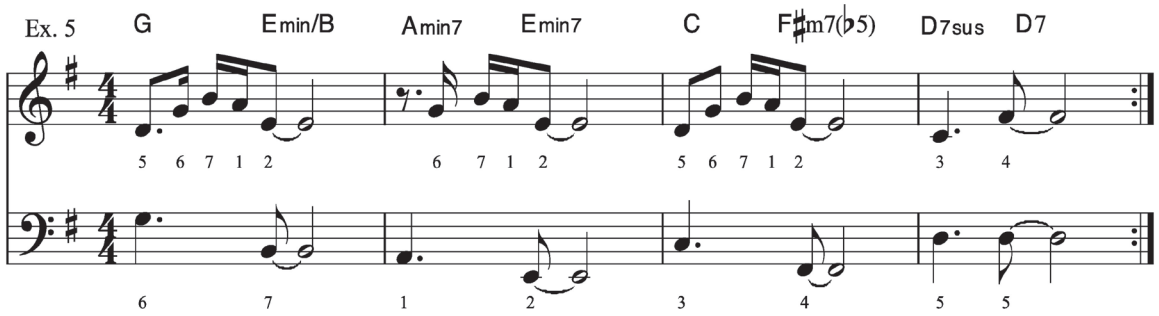
It is always possible to harmonize a melody with whatever chords your ear thinks are acceptable but there are days that your ear, for whatever reason, isn't satisfied with these harmonic choices. Example 4 shows a method to help alleviate this aggravation.

While maintaining the same harmonic rhythm as in example 3, example 4 places notes from the restricted group (G Major) into the bass clef in order of their appearance. Which octave the notes appear in does not matter as long as they function as bass notes. In this example the bass line starts on the note **G** (#6) and continues though the 7 - note cycle to **D**. With the exception of the last measure each rhythmic value receives one note. Since all notes in the melody and bass line are diatonic to the key of G Major one can start and stop anywhere within the cycle as long as notes don't get skipped over. The next step is to determine chord qualities for the completed two - voice example.

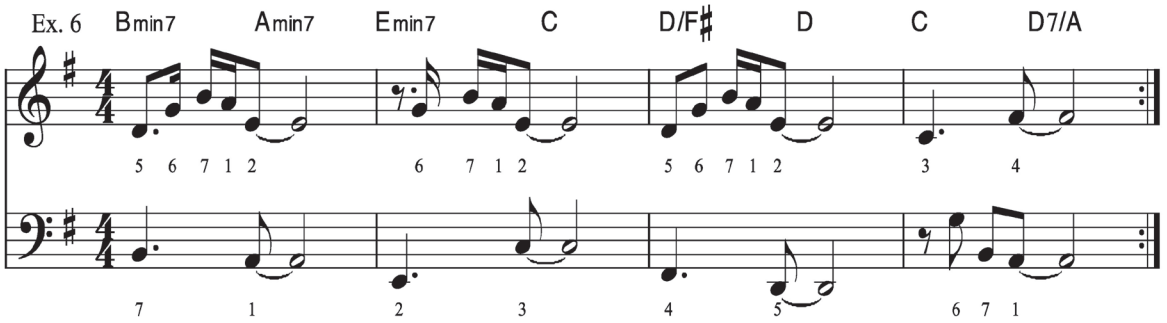
Ex. 4



Example 5 shows a possible diatonic harmonization of this example. Note that all of the choices are diatonic to the key of G Major. The chord qualities of some bass/melody relationships may be obvious (G, Emin7, D7). Other choices (Emin7/B, Amin7 and F#min7b5), work because of their restriction to G Major and will often surprise because of the unusual placement of the chord (Centuries of music has trained our ears to expect certain chords, or cadences, at specific points in a phrase of music. This technique ignores this expectation unless the choice is made to adhere to it).



Example 6 illustrates yet another way to think about putting chords to the original melody by literally shifting the beginning note in the bass clef to the left one spot. The bass line starts on note number 7 rather than number 6. This seemingly small shift will give even more harmonic possibilities. The harmonization sounds drastically different but is equally valid. I've started on **B** (note #7) and used **A** (#1), **E** (#2), **C** (#3), **F#** (#4), **D** (#5), **G** (#6), **B** (#7) again and finished on **A** (#1). Note the chords that the new bass line yields. Other chord options exist for these same bass notes. Through chord inversion, the first chord could be G/B, the second could be F#min7b5/A and the 4th chord Amin7/C. The chord quality is up to you as long as it is diatonic to the key of G Major.

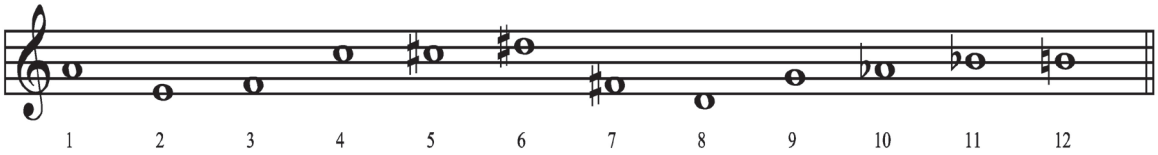


Chapter 3 - Adding Additional Pitches to a Restricted Row

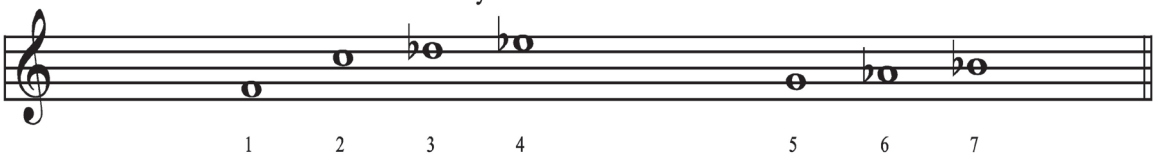
Although traditional a harmonization of the melody works fine, there is often a need to look for a more unusual or challenging harmony – if for no other reason than to discover a fresh idea. This is particularly true when one is working with complex harmonic settings such as Jazz. In the previous chapter we explored several possibilities for a completely diatonic harmonization of the melody. Now lets take the previous techniques a step further.

Example 1 shows once again the original 12 - note source, or row, that we began with. The second staff shows a new restriction, this time to the key of F Minor. The third staff shows the remaining 5 notes after the restriction to this key is made. The numbers below this staff refer to the corresponding notes' placement relative to the original 12 - note group. In an effort to keep confusion of numbers to a minimum I have placed these in parenthesis.

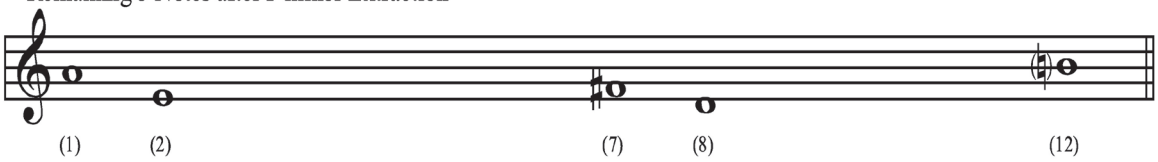
Ex. 1



Extracted and Renumbered Notes From the Key of F minor

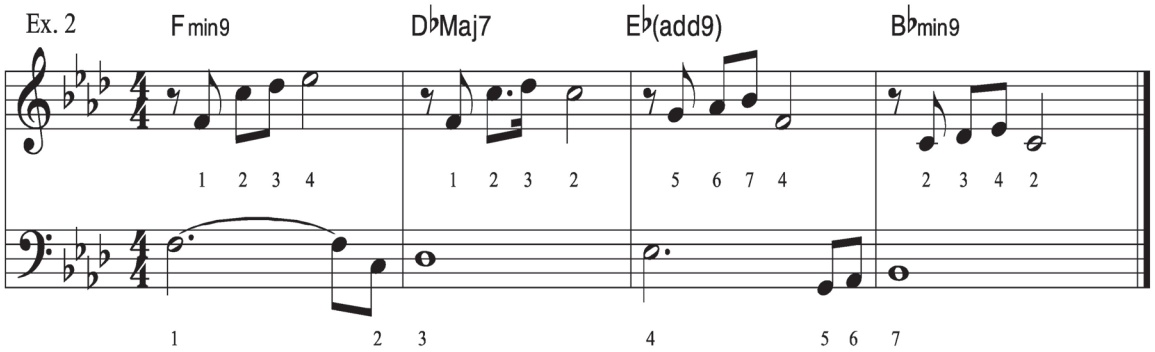


Remaining 5 Notes after F minor Extraction

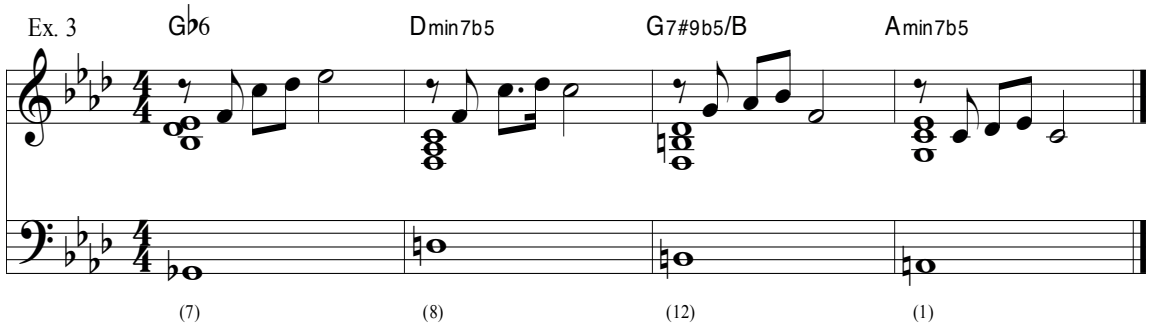


The first step is to write a melody using the notes, in order of appearance, that have been extracted from F Minor. Example 2 presents a possible melody and bass line. This example also shows a chord harmonization of the melody. Notice that the melody follows the order of extracted notes starting on re-numbered note 1 as does the bass line. As in the previous chapter it should be stressed that any note number can begin the melody or bass line. It is important that at this stage however that no notes are skipped. It should also be observed that the chord harmonization is also diatonic to F Minor. In measure 1, the Fmin7 chord is I, the DbMaj7 is a bVI, the Eb add 9 is a bVII and the Bbmin9 acts as IV. These chords are all found in F Minor.

Ex. 2



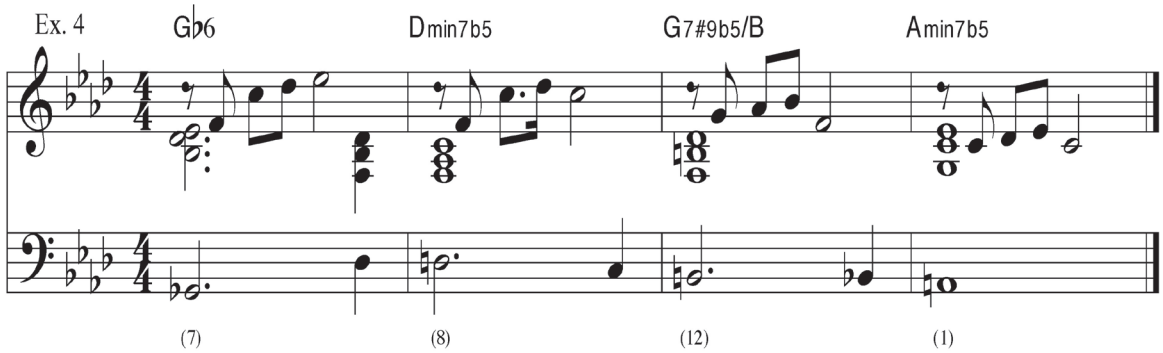
As stated earlier in this chapter, there are often opportunities to look for an unusual or less obvious harmonization. Example 3 begins to show just that. The diatonic melody previously composed is retained for illustration. Instead of using diatonic notes from F Minor for the bass line, four out of a possible five remaining notes (chromatic to the key of F Minor), are used instead (Example 1, 3rd staff). In this example the bass starts on **Gb,** or note (7), from the original 12 note group and proceeds to note (8) pitch **D**, note (12) pitch **B** and finally to note (1) which is pitch **A**.



Chordal harmonization gets very interesting at this point. Any chord quality can be used to harmonize the melody and bass. The only thing to keep in mind is that the melody and bass should have some sort of harmonic relationship to the chord choice. The melody notes in the first measure plus the bass line pitch **Gb** allows for a Gb6 (Gb triad with a major 6th added) to be used for 4 beats. Other possibilities include, but are not limited to, Ebmin7, Ab7/Gb or Dbsus/Gb. In measure two, **D** in the bass coupled with notes **F** & **C** in the melody suggests a D minor chord of some sort. The choice here is Dmin7b5. The melodic note **Db**, which occupies the last 16th of beat 2, is a chromatic neighbor tone. Continuing on to measure 3, the choice is G7#9/B. The #9 being the **Bb** in the melody. This note could be ignored in the chord symbol as it occurs on the weak part of the beat. Finally, the arrival to measure 4. The choice here is the Amin7b5, which takes into account the **A** in the bass line and the **C** & **Eb** in the melody.

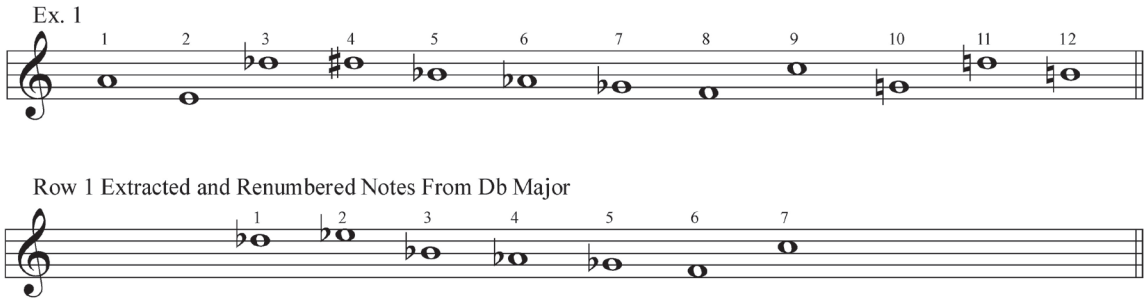
Beyond making sure that the chord quality chosen has a relationship to the melody & bass (chord tone or tension tone), there are two additional thoughts to keep in mind. At first it may seem that your choices for chord qualities may not sound good. Before discarding a choice make sure that traditional voice leading of the inside voices is adhered to as strictly as possible. For example, try to get as many common tone relationships between chords to appear. If common tones don't exist, the next best thing is stepwise motion up or down to the next chord. Example 3 illustrates this point. Notice that with the exception of the first measure, the two inside voices move from chord to chord by either half step or common tone. This movement greatly enhances the smoothness between chord qualities to the listener (and the players), even if they seem quite disjointed at first. The second point is that harmonization can, will, and probably should ignore traditional analysis from chord to chord. This is one way that a composer can create new and fresh sounds. If your ear thinks a harmonization is acceptable for a given scenario then it is probably fine. Example 4 shows how to further make the music smoother from chord to

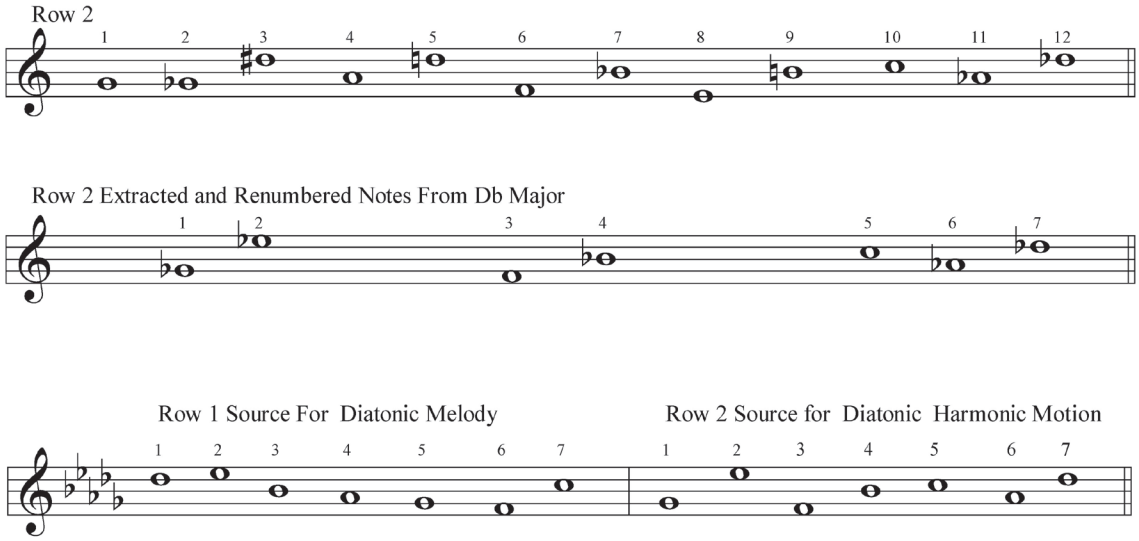
chord.



Chapter 4 – Combining Two Restricted Rows

We will now look at how the technique of Diatonic Restriction is used in an actual song. The name of the song is *What If,* composed by myself. Example 1, on the following page, illustrates several things. First of all, it shows us two different rows being used as source material. These 12-note groups of pitches are labeled Rows 1 and 2, located on lines one and 3. Secondly, we can see that each one of these 12 – note rows has been restricted, in order of appearance, to two smaller 7 - note rows that conform to the key of Db Major (or Bb Minor). These are located on lines two and four. Finally, the last line places both restricted groups, in order of appearance, into the key signature of Db Major. In the last line, we can also observe that each 7-note group is going to be assigned its own function. The newly restricted Row 1 will be used as a source of melody notes for a section of the song. Conversely, Row 2 will provide the foundation for harmonic motion (where the chord changes will occur) and what the bass note will be.



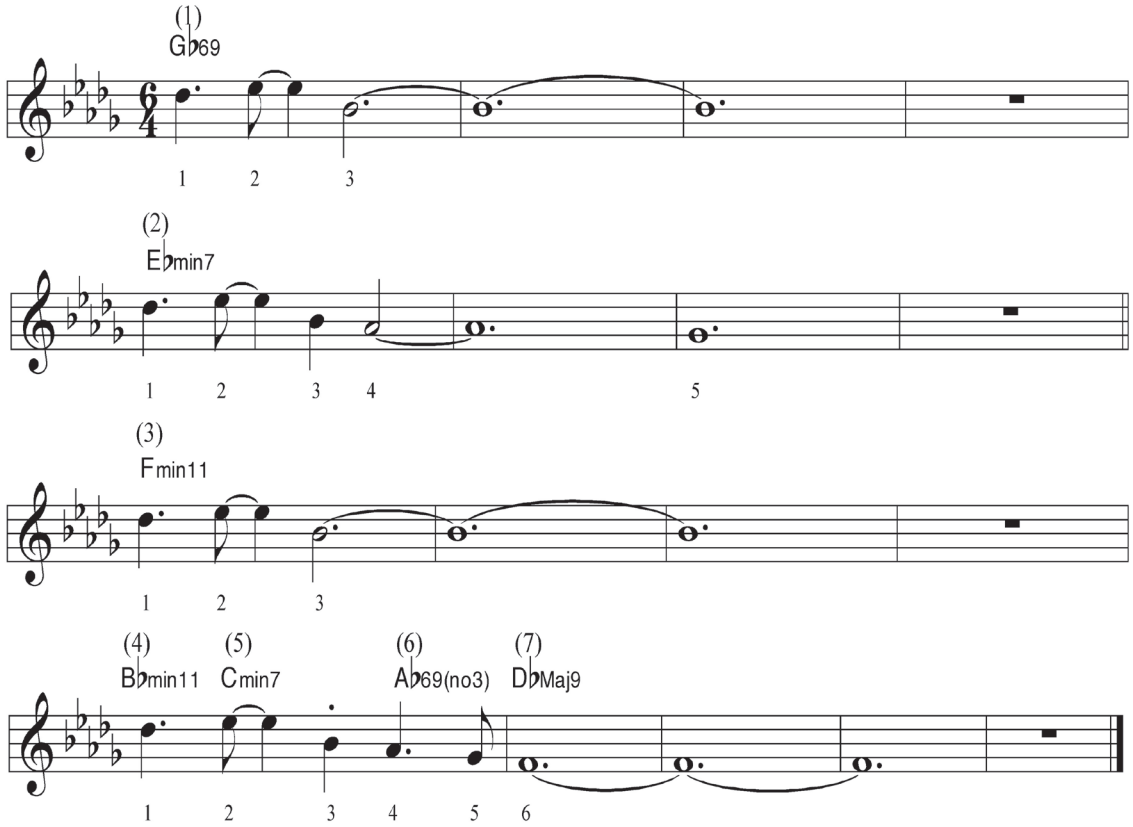


Note: Once divided in this way, melodies and harmonic motion can be created starting on any note of the group and proceeding, in order, to the left or right.

Looking at the melody first, let's look at example 2 on the following page to find out how the two sources were used. In measure 1, the melody begins on the note Db, which is note number 1 and continues to Eb and then Bb to complete the first phrase. I've now used the first three notes from my restricted row (Row 1). If we were to stay strict to the technique, the next pitch to use would be number 4, the note Bb. This is where technique has to take a backseat to your own creativity. Jack Smalley always told me, "Always try to remember that these techniques are not intended to replace any other technique or your own sense of musicianship. You're not trying to re-invent the wheel! These techniques are intended to provide us with notes or source material to do something with."

I've always believed in short melodic phrases that can be easily manipulated, and therefore more easily understood by the listener. The second and third lines of this melody illustrate this point. In measure 5, I begin with the same fragment that I did in the previous line except that I add two additional notes from my diatonic source - note number 4, the Ab and note 5, the Gb. I now have a typical section of eight measures that is fairly typical in today's music. I will repeat the first four measures of this section. This gets me to measure 13 where it feels like I need some sort of cadence to get me to a state of rest. Again, I've used the first five notes of my restricted row (Just as I did in measures 5 – 7, except that I've changed the rhythm in the second half of the measure.). This time however, I continue on to note 6, the note F. I've gotten quite a bit of mileage out of 6 notes! In fact, I've created one whole verse for my song. On the recording, you'll notice that I repeat this section a second time giving me a second verse. The second verse is a little different though in that the instruments stating the melody are a different combination than the first verse. (First Verse: Soprano Saxophone, Flute and Trumpet with a Harmon mute. Second Verse: Soprano Saxophone, Flute, Flugelhorn, Trumpet and two Trombones.).

Ex. 2 Melody from restricted Row 1 (note numbers below) and
Harmonic Motion (note numbers in parenthesis above) from restricted Row 3.



Next, let's look at the harmony that was used. Again, refer back to example 1. This time we will use Row 2 for our bass notes and subsequent chord determinations. As you'll notice on the recording, this song moves along at a pretty fast tempo (although it doesn't feel like it), and therefore doesn't need a great deal of harmonic rhythm. This is particularly true in the style I've chosen to write in, a Bossa Nova. Stylistically, a Bossa Nova has a very relaxed feeling attached to it. If I were to change harmony constantly, say every two beats, it would not sound very relaxed.

In the harmonization of this section of *What If,* it felt natural to use one chord every four measures until reaching measure 13, where more activity seemed to be needed. Note that in example 2 I have begun with note number 1, the Gb from the second restricted row. I've also made the decision that, for this section of the song at least; I will keep the melody and harmony completely diatonic. What this means is that whatever chord I choose from the key of Db, the chord choice has to have a Gb in the bass at the point of the chord's initial sounding. As can be seen in the example, I chose a Gb69 chord. This chord represents the IV chord and is an obvious choice. Other possibilities could have been Ebmin/Gb, Ab7sus/Gb or Cmin7b5/Gb. Observe that each one of these possibilities is completely diatonic to the key of Db Major or its relative minor, Bb Minor. Also, observe that each one of these options has its own sound and most importantly has Gb in the bass.

The next note in line is number 2, the Eb. Following the same thinking as note number 1, I need a diatonic chord to Db Major that has an Eb in the bottom of it. The chord choice also needs to be able to include the melody. The obvious choice is some sort of Ebmin, a II minor chord – in this case, an Ebmin9. Other choices could be Fmin/Eb, Ab-7sus/Eb or Bbmin/Eb.

Continuing the process to note number 3, the note we need to harmonize is F. The choice of Fmin11 could be considered a little curious, on paper. This is because of the "rub" or dissonance that normally is created between the Db melody note and the pitch C that is in the chord. When listening to the recording, there doesn't seem to be a problem with this issue because the harmonic instruments such as piano and guitar are not playing "on the beat" where the Db note is being first sounded.

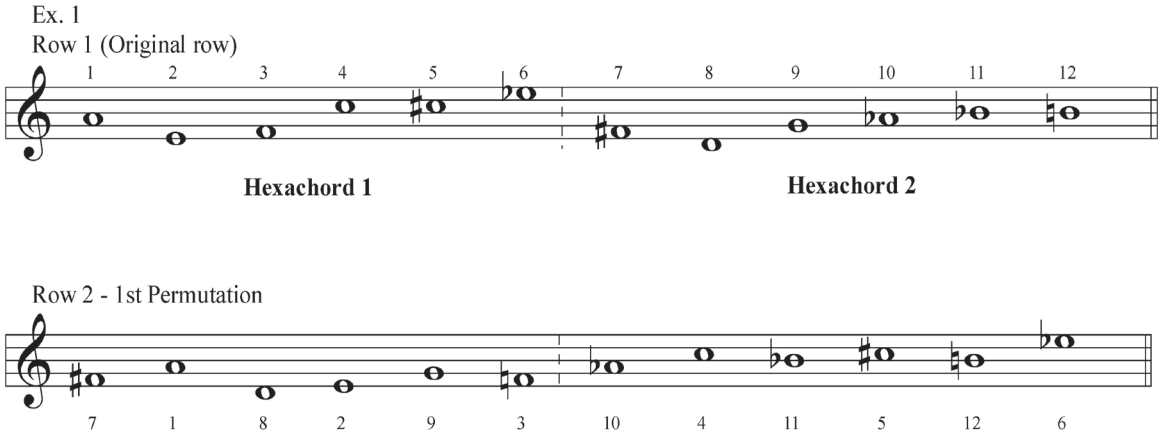
Finally, there is a flurry of activity in measure 13 that helps to bring this section of the song to a close. Melody note 1, the Db, is now harmonized by the chord Bbmin11. This represents note 4 (Bb), from Row 2. Note 5 from Row 2, the pitch C, is Cmin7.

This chord includes the melody notes Eb and Bb. Note 6, the pitch Ab, is an Ab69(-no3), and acts as a V chord to cadence us to a I chord – the DbMaj9 chord that represents note 7 from Row 2 (Db).

When composing a melody or chord progression using these techniques, remember that even though the numbering used for the group of notes you're working with begins with the number 1, you can start on any note number that you wish and proceed in order from that point (forward or retrograde). This will be illustrated further in Chapter 7.

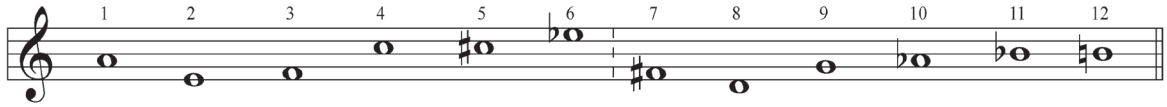
Chapter 5 - Variation of the Row Via Interpolation/Permutation

Now that we have created some short motives, melodic phrases and harmony it has probably become clear that we may need more notes for longer phrases and passages. One of George Tremblay's great contributions to twentieth century music was the concept of permutation of the 12 given pitches in a way that hadn't previously been tried. Permutation means to alter the order of a given set of objects in a group. In Tremblay's case, the objects are notes that can be rearranged or reordered using a simple mathematical process.

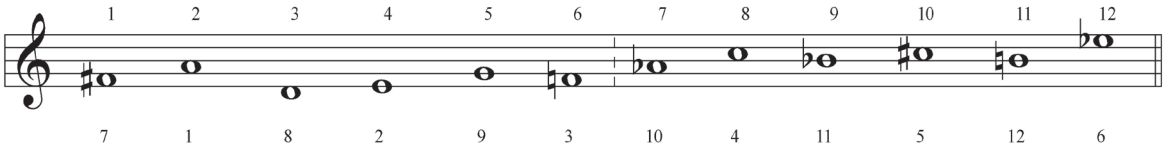


Example 1 shows the original row plus a permutation of it. This first permutation is called Row 2. The simplest way to begin is to divide Row 1 into two, six note groups called hexachords. To get Row 2, begin with note 7 (**F#,** from the second hexachord) and follow it with note 1 (**A**, from the first hexachord). Next, place note 8 after note 1 and then note 2 after note 8. Continue with note 9 after note 2 and note 3 after note 9. By now you can see a pattern develop. Notes 10 & 4 are followed in sequence by notes 11 & 5 and 12 & 6.

Ex. 2
Row 1 (Original row)

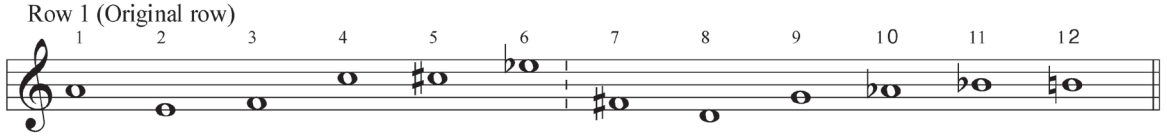


Row 2 - 1st Permutation

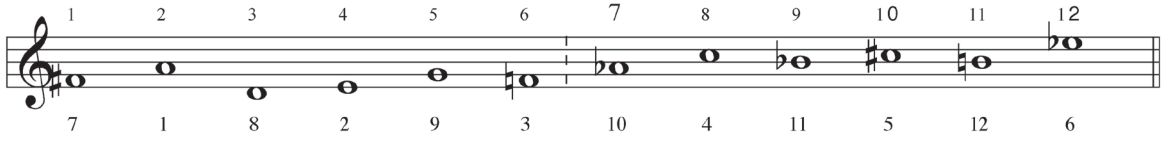


Row 2 is now complete. The next step is to renumber the notes of Row 2 from 1 to 12 as in example 2. We now have a reordering of the original pitches that consists of **F#, A, D, E, G, F, Ab, C, Bb, C#, B and Eb.** The reason for renumbering the pitches in Row 2 is so that we can obtain additional permutations, or variations, of the original group of pitches.

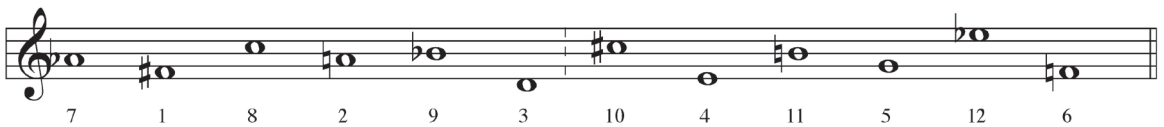
Ex. 3
Row 1 (Original row)



Row 2 - 1st Permutation

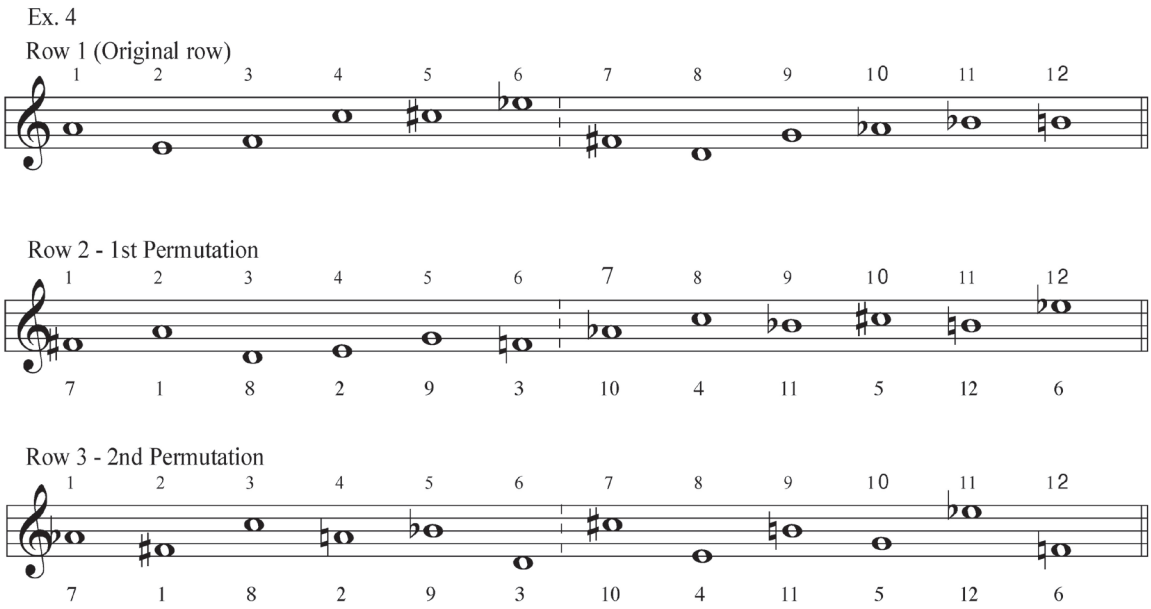


Row 3 - 2nd Permutation



Please refer to example 3. To construct Row 3, use the same process that was demonstrated previously for Row 2. Using Row 2 now, begin with note 7 (**Ab**), and combine

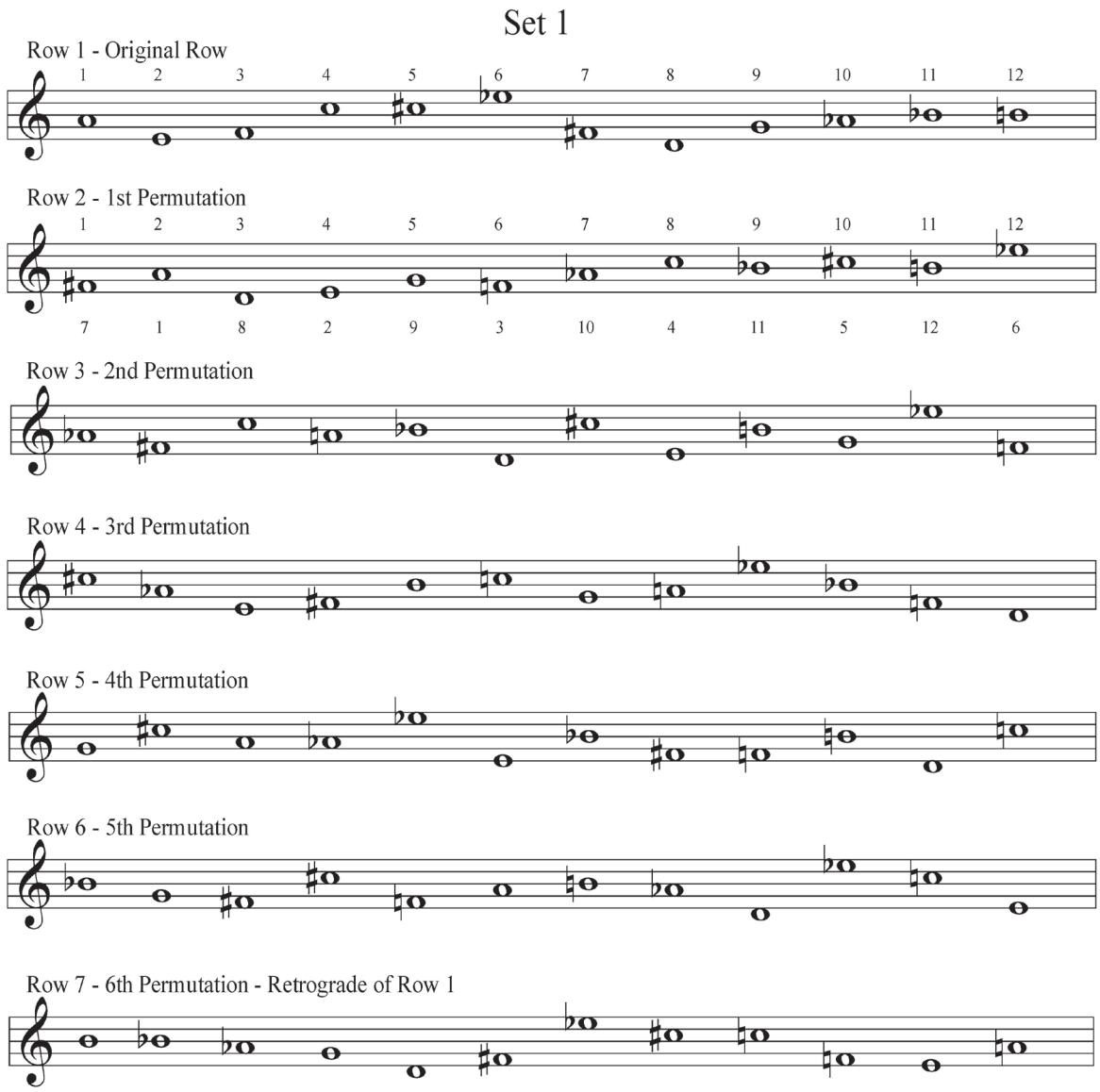
it with note 1 which is **F#**. Next, place note 8 after note 1 and then note 2 after note 8. Continue with note 9 after note 2 and note 3 after note 9. Notes 10 & 4 are followed in sequence by notes 11 & 5 and 12 & 6. Row 3 is now complete.



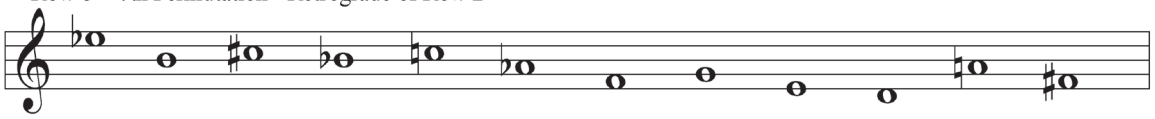
After completion of Row 2, the next step is to renumber the notes of Row 3 from 1 to 12 as in example 4. Looking at example 3, we now have this group of pitches: **Ab, F#, C, A, Bb, D, C#, E, B, G, Eb & F.**

Note on the next 2 pages (example 5), that continuing the process of permutation leads us through a total of twelve rows. Together, these groups of rows are called Set I. Observe that Row 7, the 6th permutation, is a retrograde, or reverse order, of the original row. Row 8 is a retrograde of Row 2; Row 9 is a retrograde of Row 3 and so on. If this isn't true about your own set, you will have to check your rows from the first permutation until the correct notes are found. If we were to construct a thirteenth Row (a twelfth permutation), this row appears as the original row in its original form.

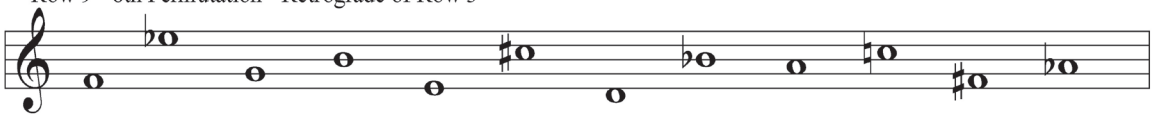
Ex. 5


Set 1
Row 1 - Original Row
1 2 3 4 5 6 7 8 9 10 11 12
Row 2 - 1st Permutation
1 2 3 4 5 6 7 8 9 10 11 12
7 1 8 2 9 3 10 4 11 5 12 6
Row 3 - 2nd Permutation
Row 4 - 3rd Permutation
Row 5 - 4th Permutation
Row 6 - 5th Permutation
Row 7 - 6th Permutation - Retrograde of Row 1

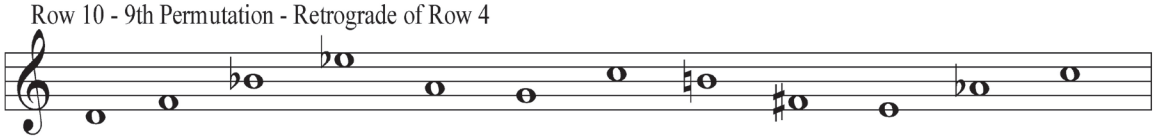
Row 8 - 7th Permutation - Retrograde of Row 2



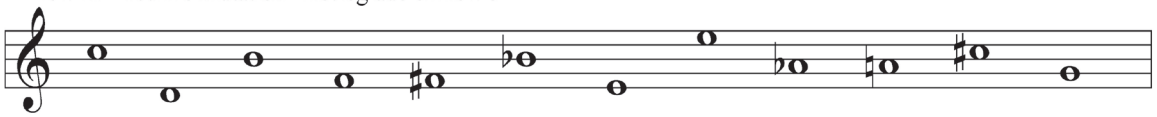
Row 9 - 8th Permutation - Retrograde of Row 3



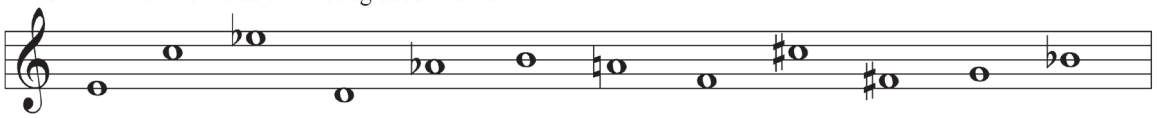
Row 10 - 9th Permutation - Retrograde of Row 4



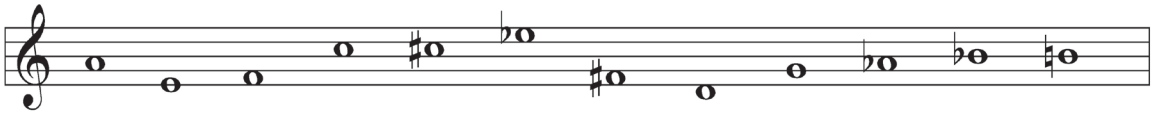
Row 11 - 10th Permutation - Retrograde of Row 5



Row 12 - 11th Permutation - Retrogradeof Row 6

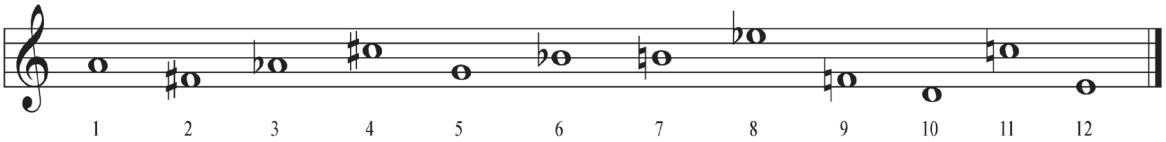


If a 12th Permutation is constructed, a retrograde of Row 7 appears. This tells us that we have correctly constructed the set and can move on to Set 2



Ex. 6

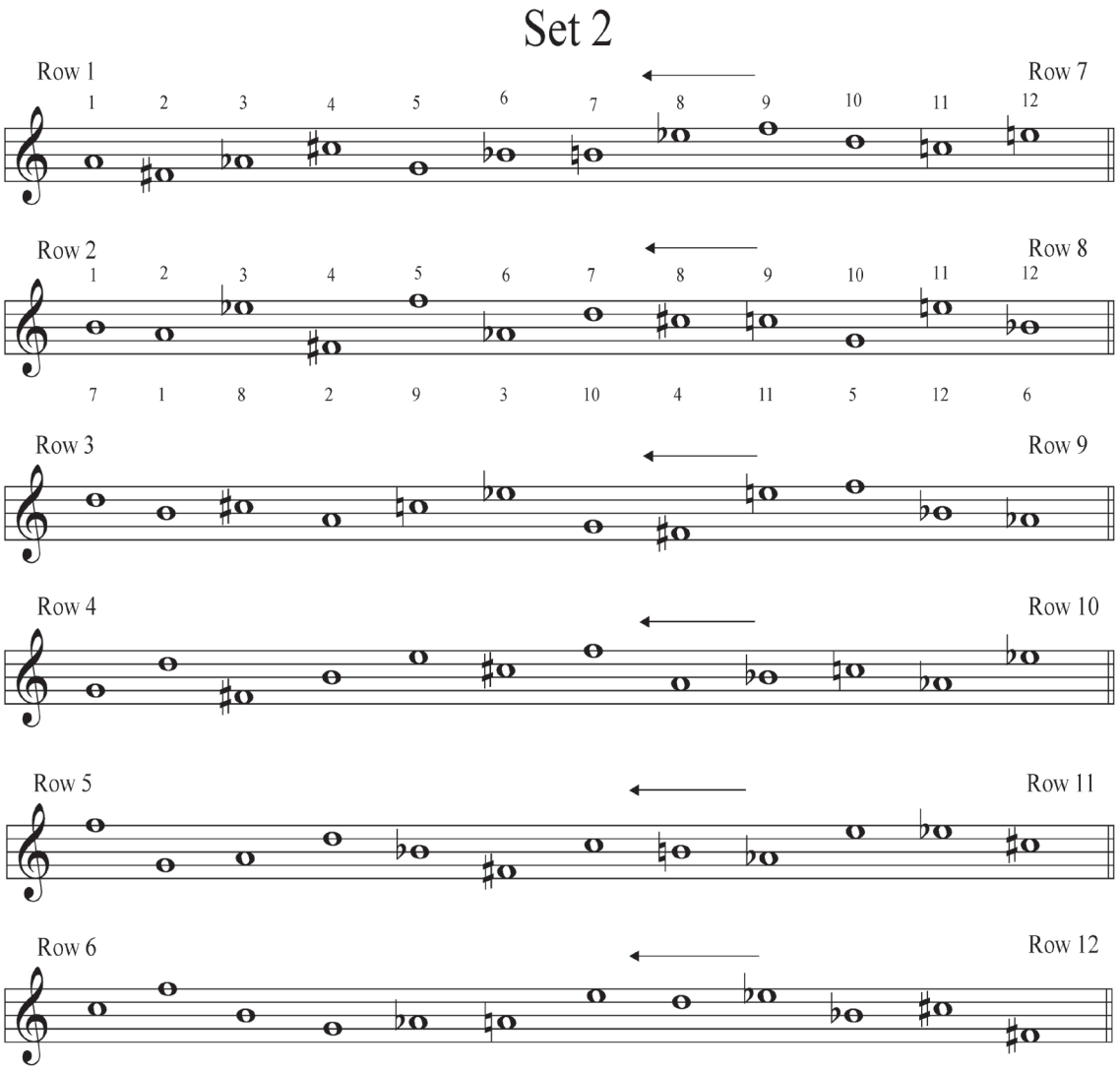
To begin Set 2 (There are a total of 24 Sets, each Set having 12 Rows), extract the first note from the Original Row of Set 1 (Row 1), plus the first note from each of the next 11 Rows.

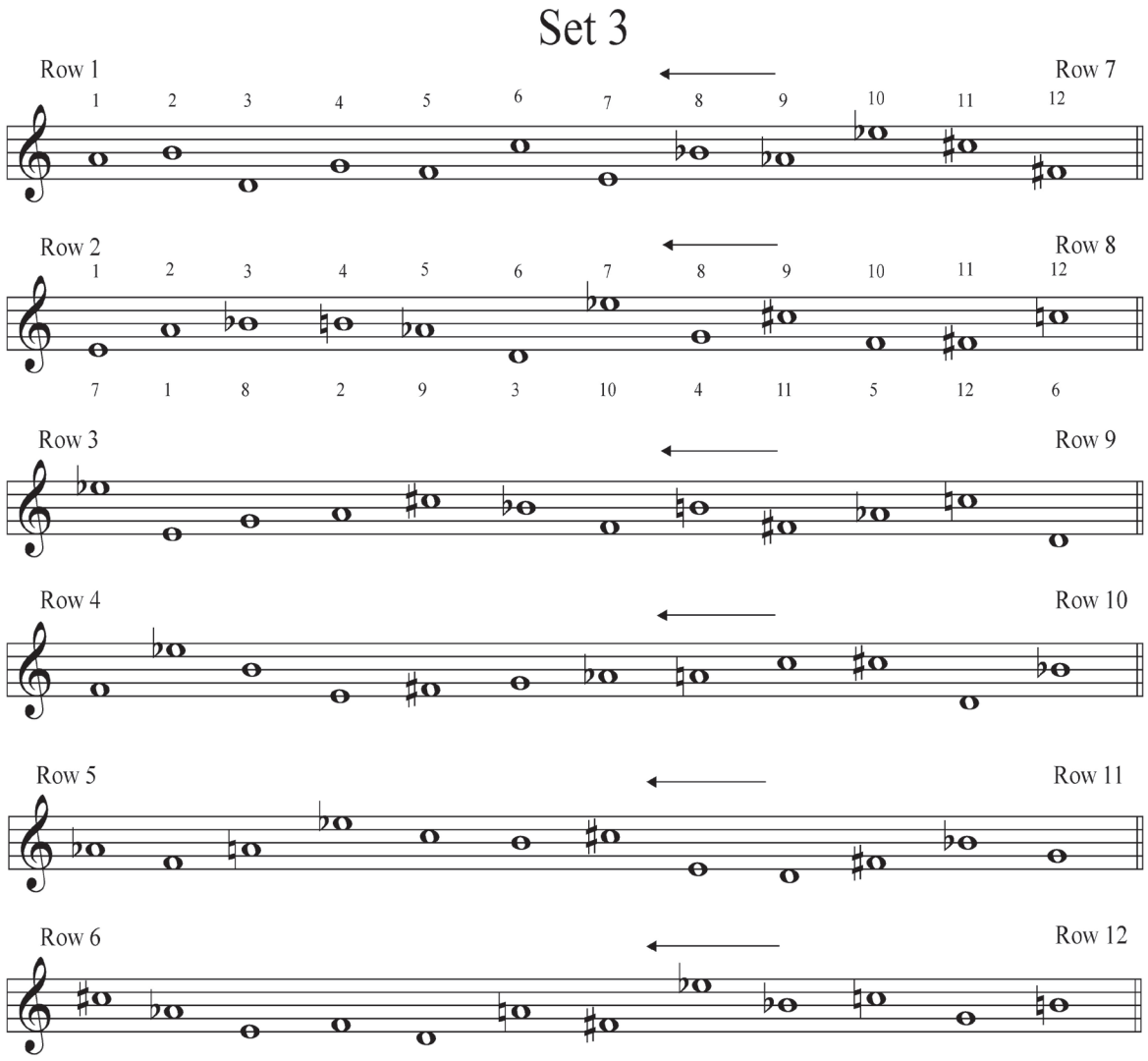


There are a total of 24 possible sets of 12 rows. To construct Set II, assemble the initial row by using the first pitch from each group of 12 notes (from Set I) . Start with **A,** the first note from Row 1, then **F#,** the first note from Row 2. The next note is **Ab/G#,** which is the first note from Row 3. Continue through all twelve rows (4 – 12) until the group is complete. Using example 5 we arrive at example 6 – **A, F#, Ab, C#, G, Bb, B, Eb, F, D, C & E.** This is Row 1 of Set II. The technique of completing Set II is the same as Set I. Or-

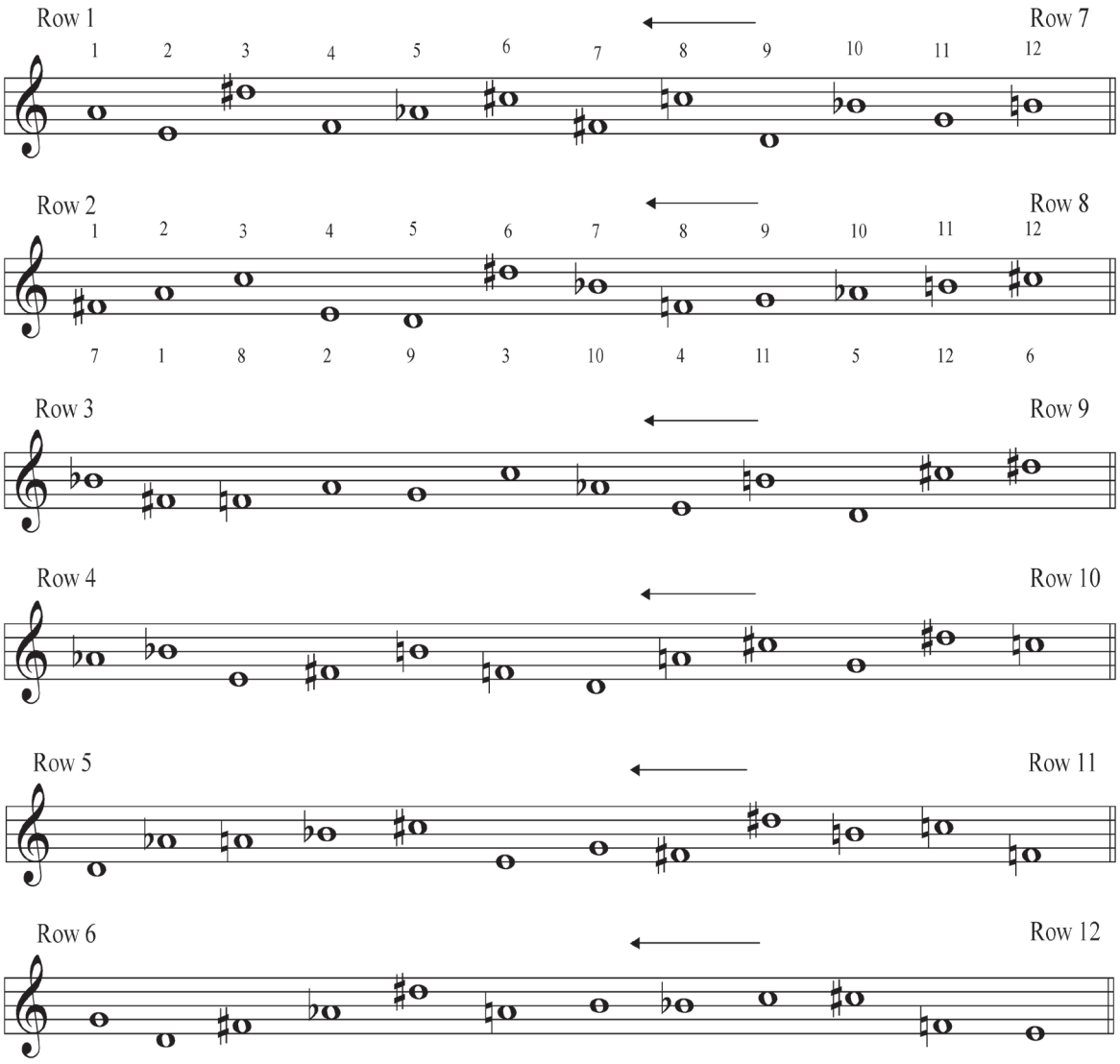
dering of the notes of course will be different. This translates into more variations of the original row. I've all twenty-four sets from the original row to guide you. Note that in Sets 2 through 24, there appears to be only the first six rows of each set. If we remember that Rows 7 through 12 are merely retrogrades of the first six, it is not necessary to include them. We can read rows 1 though 6 backward to achieve the same goal. Going on to a theoretical Row 1 of a twenty-fifth set will yield the original row. This tells us that we have successfully reached the end of this mathematical process.

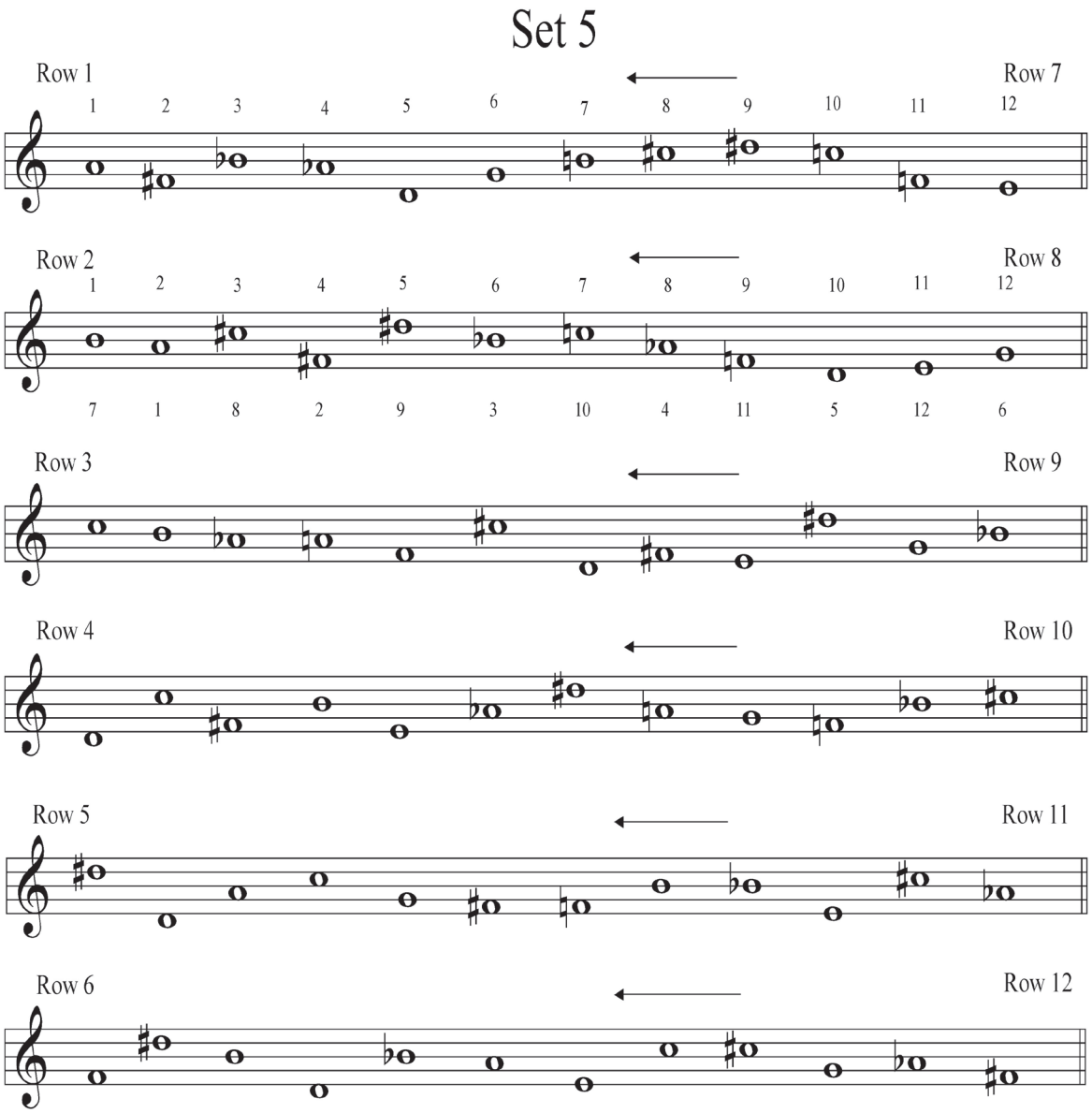
After the completion of twenty-four sets it should be apparent that there is an incredible amount of resource material to explore and choose from – all variations from the original 12-note group of pitches. In Chapter 2 we explored the use of a single row to compose a melody and possible harmonization techniques for it. Chapter 6 will demonstrate how multiple rows; all confined to the same tonal area (diatonically restricted) can be used in a chorale setting.

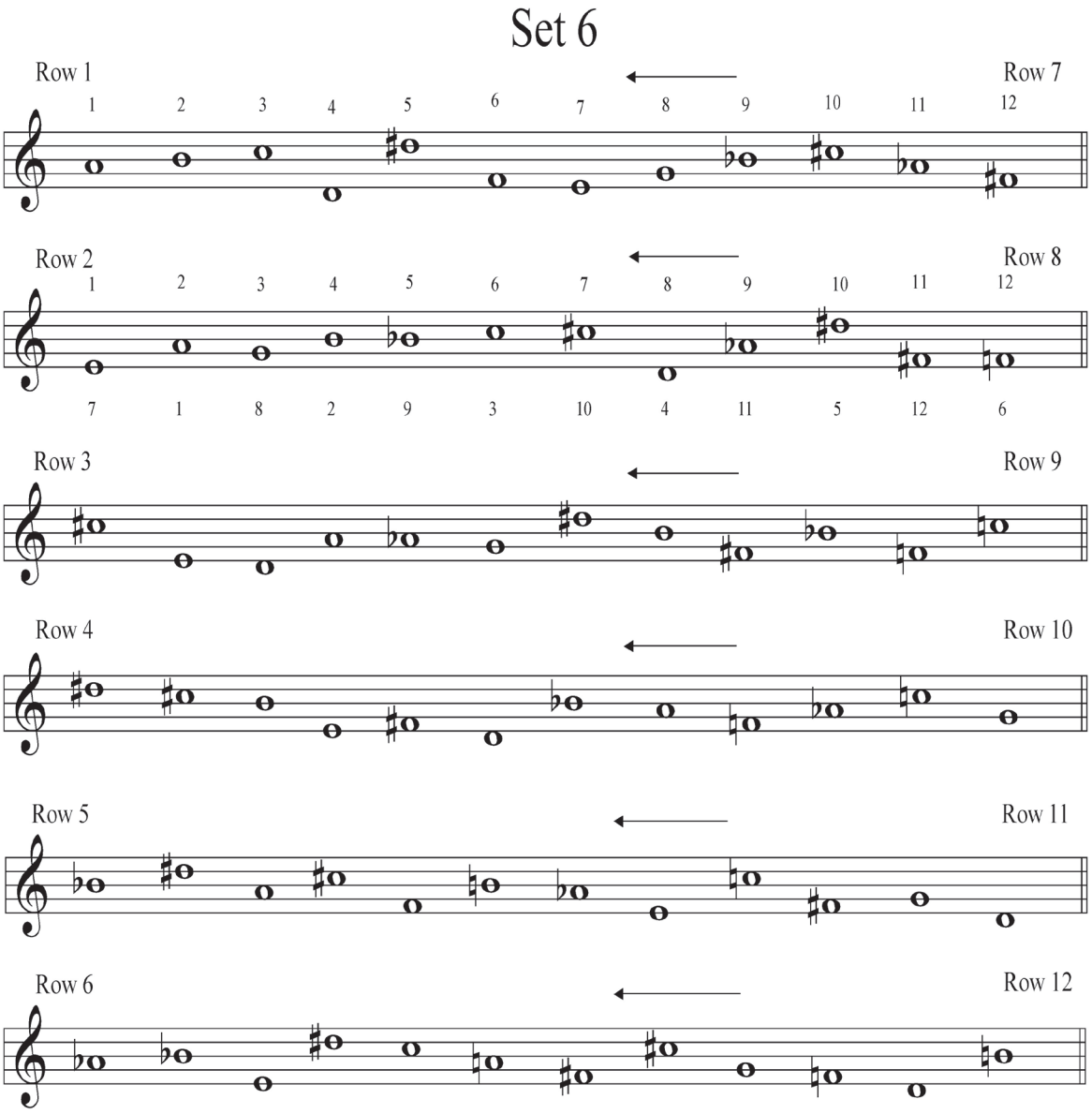


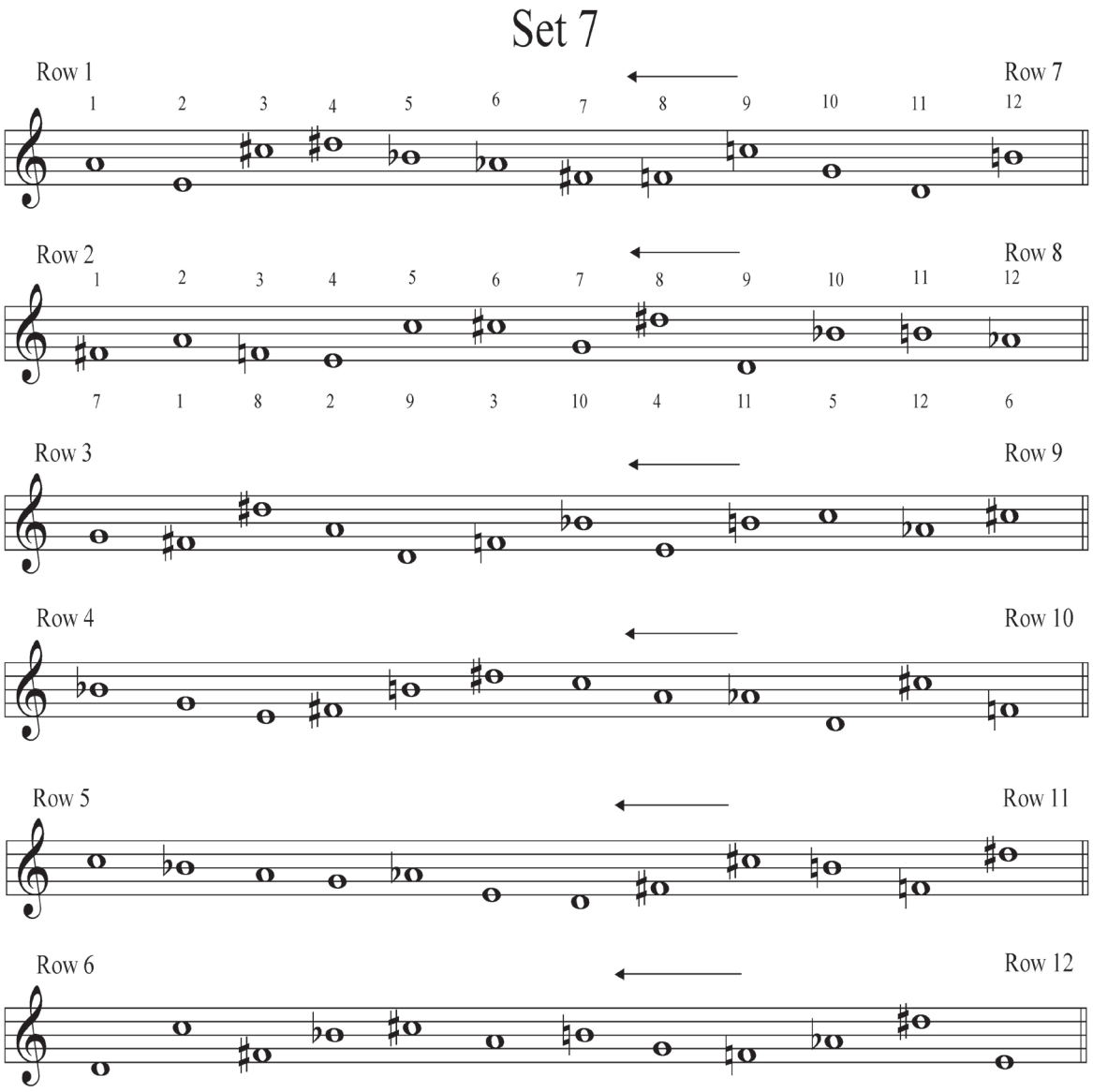

Set 3
Row 1
1 2 3 4 5 6 7 8 9 10 11 12
Row 7
Row 2
1 2 3 4 5 6 7 8 9 10 11 12
7 1 8 2 9 3 10 4 11 5 12 6
Row 8
Row 3
Row 9
Row 4
Row 10
Row 5
Row 11
Row 6
Row 12

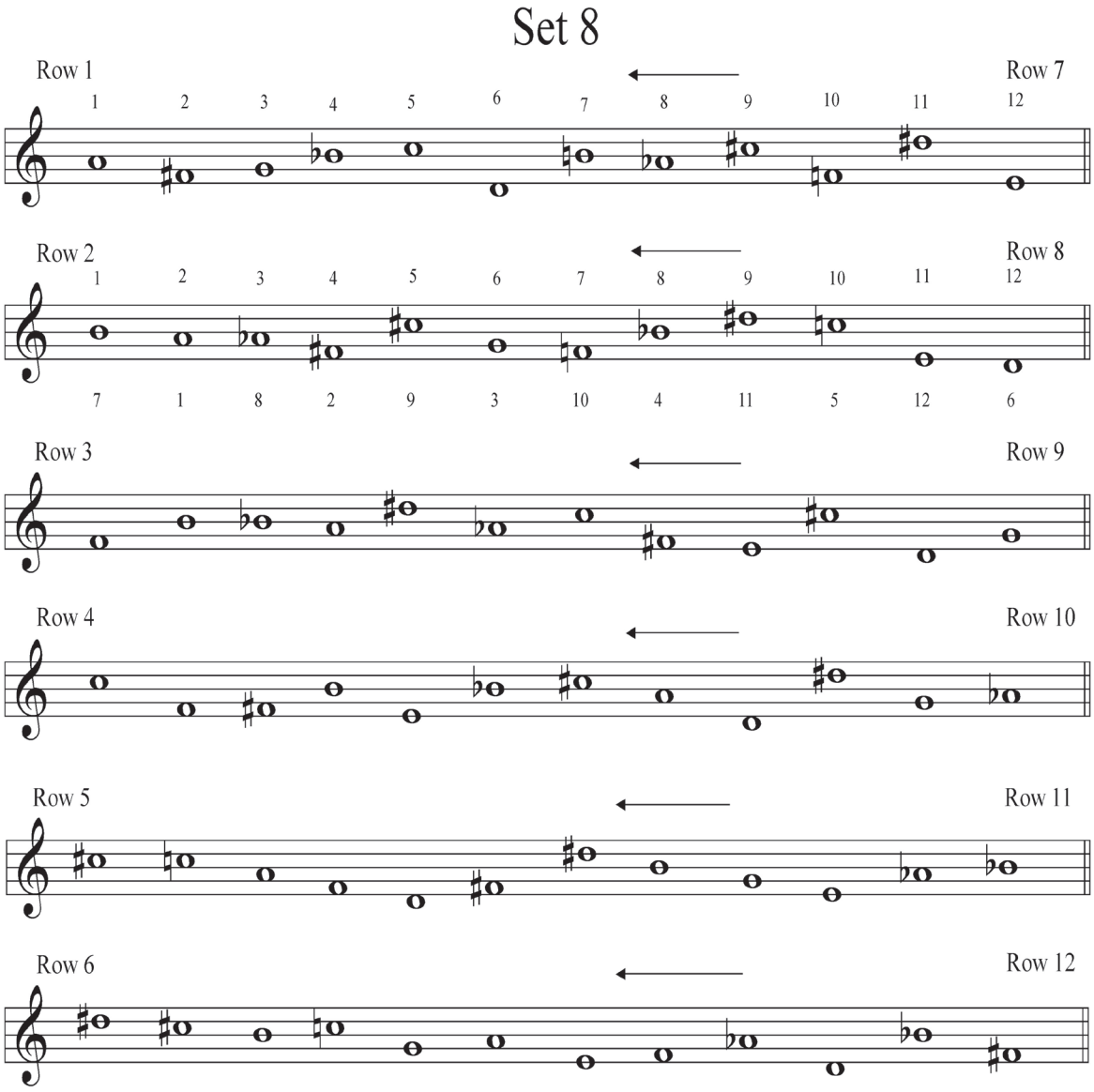
Set 4

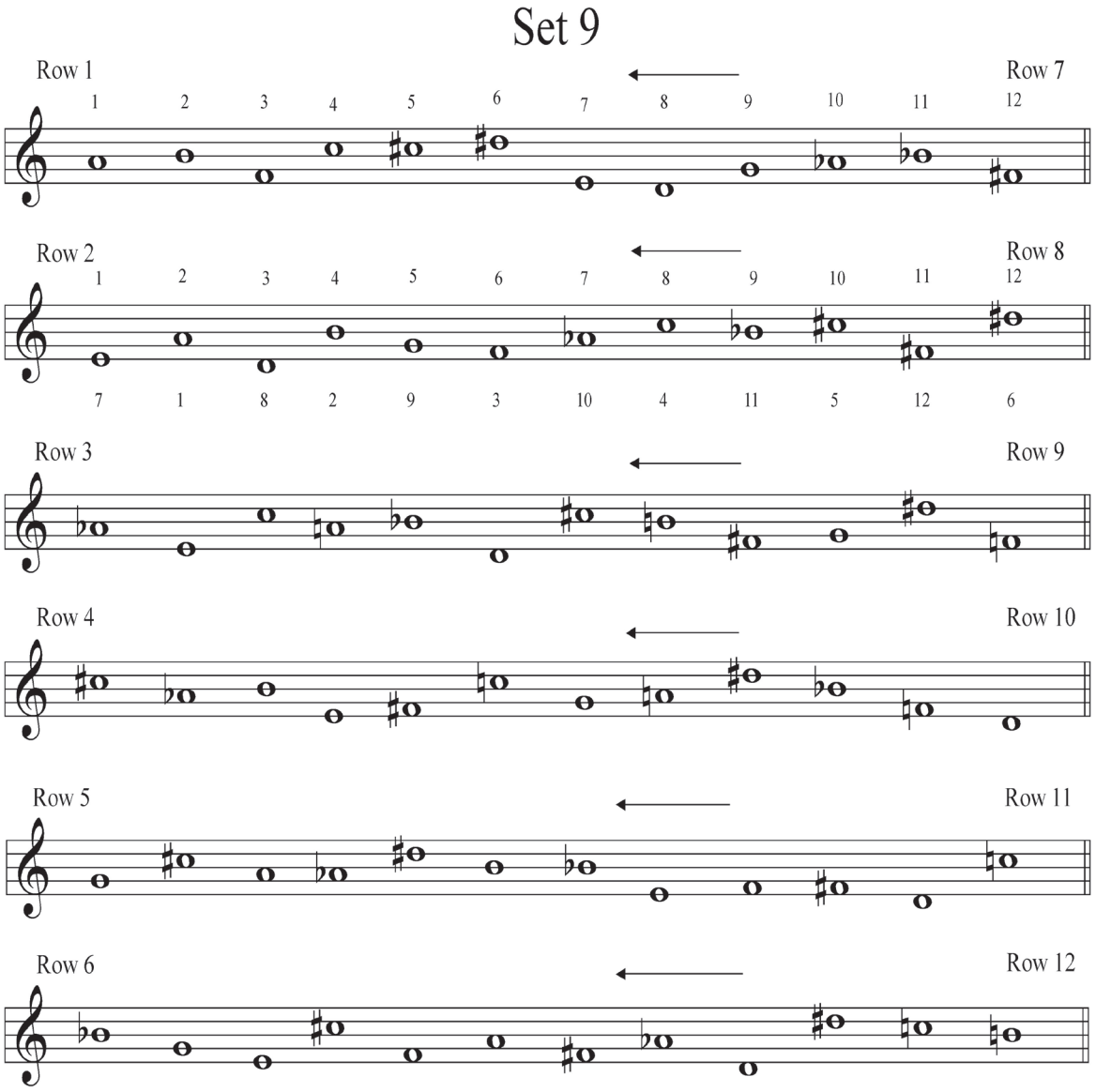

Row 1
1 2 3 4 5 6 7 8 9 10 11 12
Row 7
Row 2
1 2 3 4 5 6 7 8 9 10 11 12
7 1 8 2 9 3 10 4 11 5 12 6
Row 8
Row 3
Row 9
Row 4
Row 10
Row 5
Row 11
Row 6
Row 12

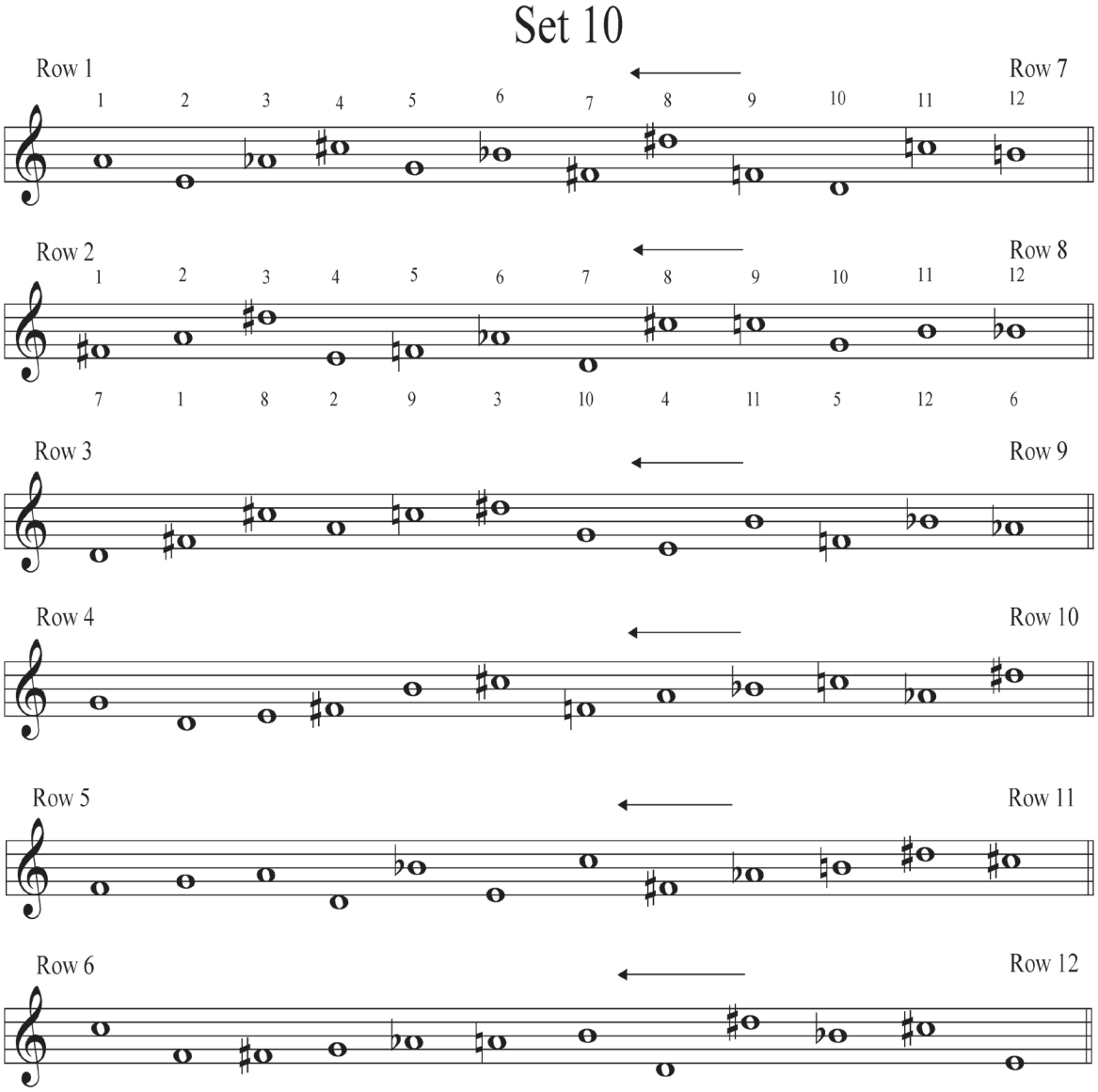

Set 5
Row 1
1 2 3 4 5 6 7 8 9 10 11 12
Row 7
Row 2
1 2 3 4 5 6 7 8 9 10 11 12
7 1 8 2 9 3 10 4 11 5 12 6
Row 8
Row 3
Row 9
Row 4
Row 10
Row 5
Row 11
Row 6
Row 12

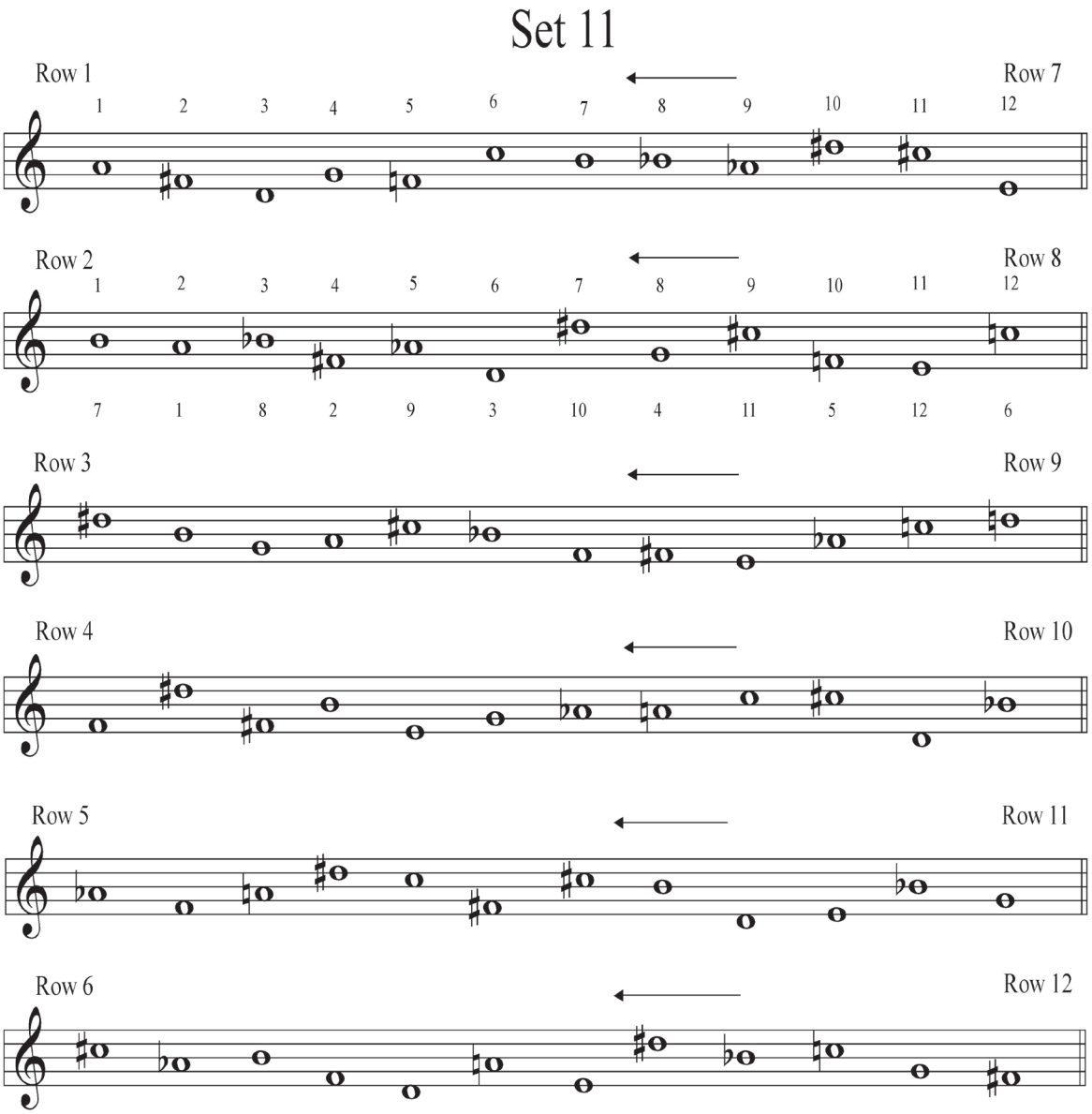

Set 6
Row 1
1 2 3 4 5 6 7 8 9 10 11 12
Row 7
Row 2
1 2 3 4 5 6 7 8 9 10 11 12
7 1 8 2 9 3 10 4 11 5 12 6
Row 8
Row 3
Row 9
Row 4
Row 10
Row 5
Row 11
Row 6
Row 12

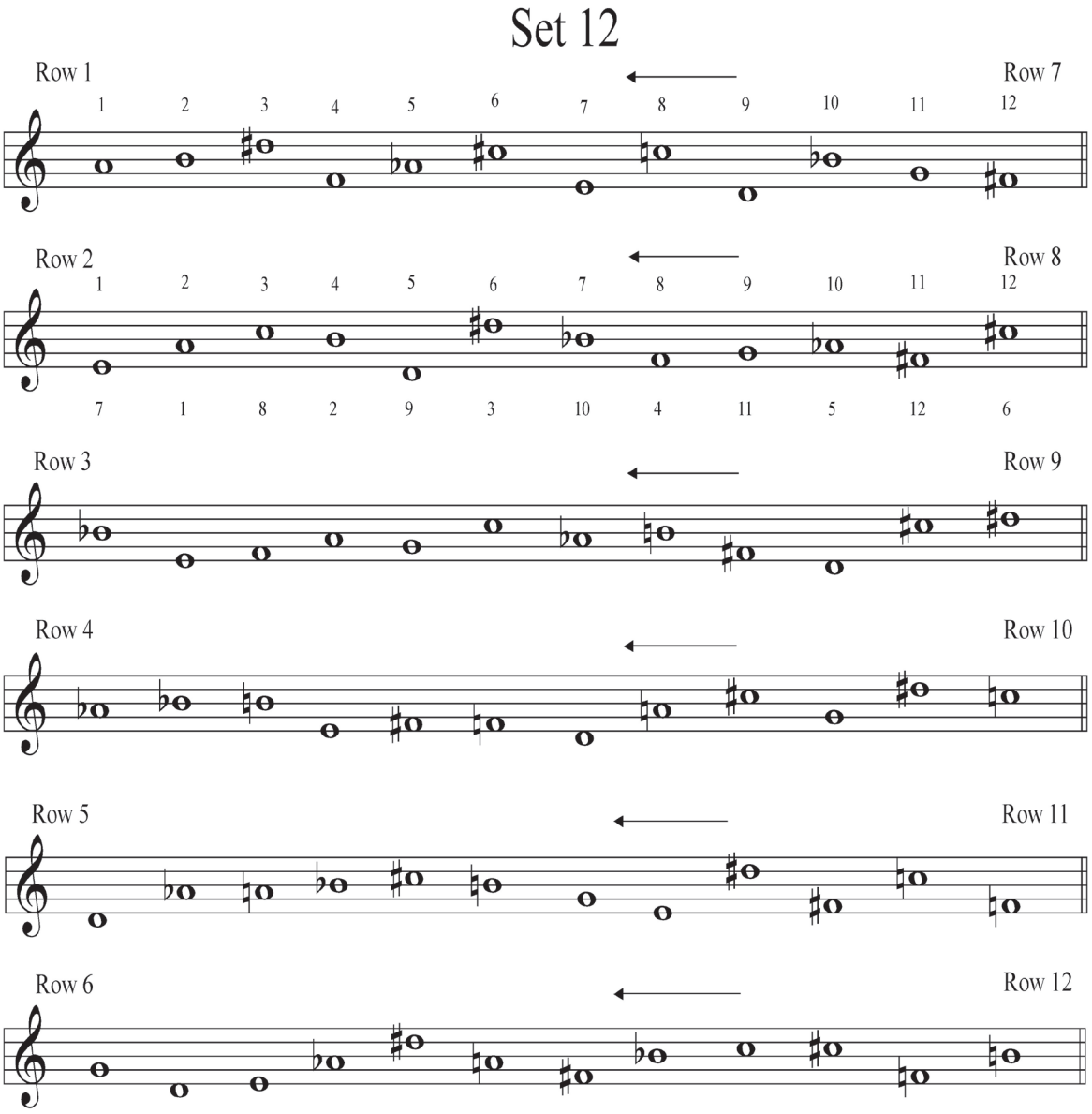

Set 7
Row 1
1 2 3 4 5 6 7 8 9 10 11 12
Row 7
Row 2
1 2 3 4 5 6 7 8 9 10 11 12
7 1 8 2 9 3 10 4 11 5 12 6
Row 8
Row 3
Row 9
Row 4
Row 10
Row 5
Row 11
Row 6
Row 12

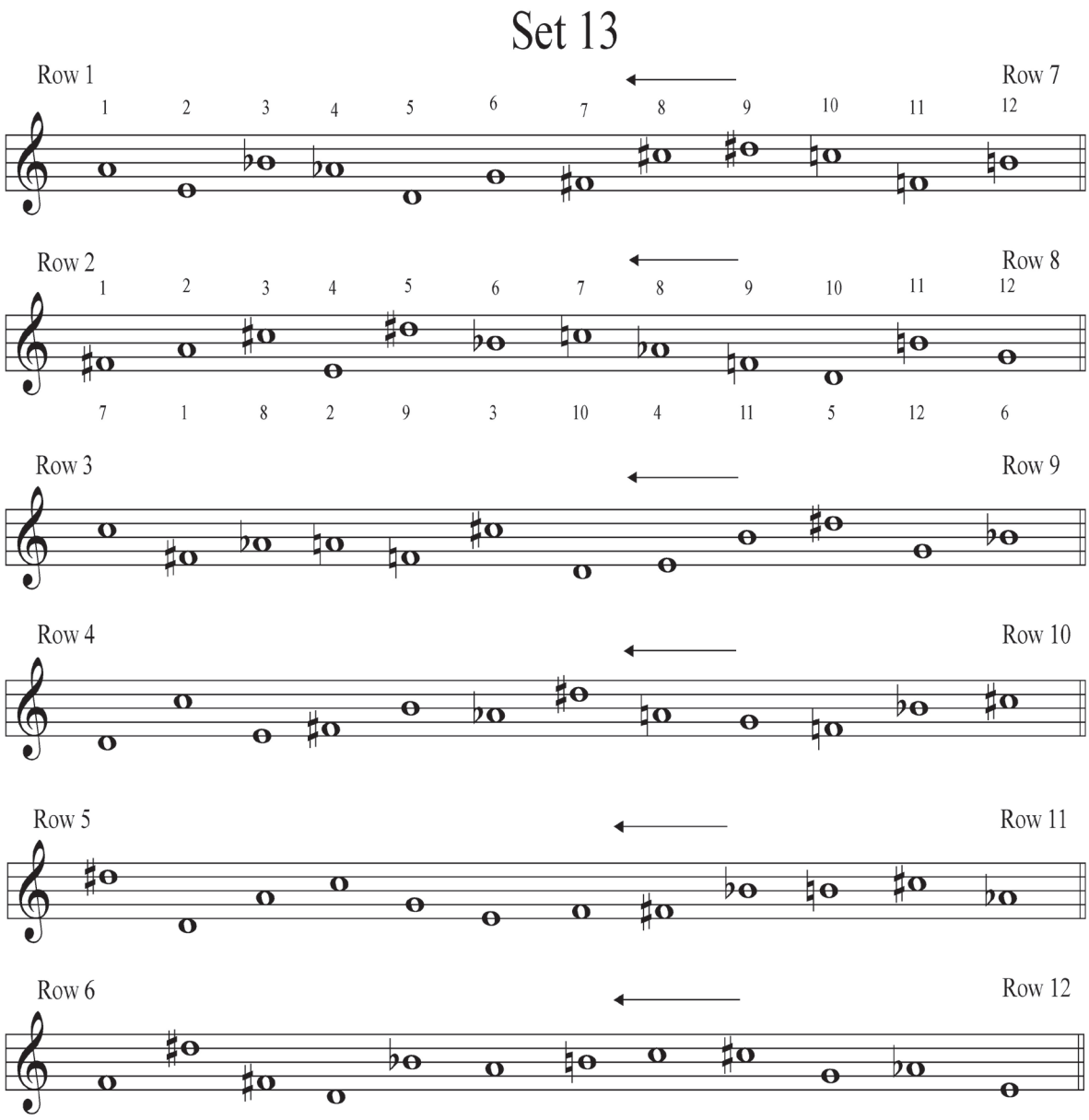

Set 8
Row 1
1 2 3 4 5 6 7 8 9 10 11 12
Row 7
Row 2
1 2 3 4 5 6 7 8 9 10 11 12
7 1 8 2 9 3 10 4 11 5 12 6
Row 8
Row 3
Row 9
Row 4
Row 10
Row 5
Row 11
Row 6
Row 12

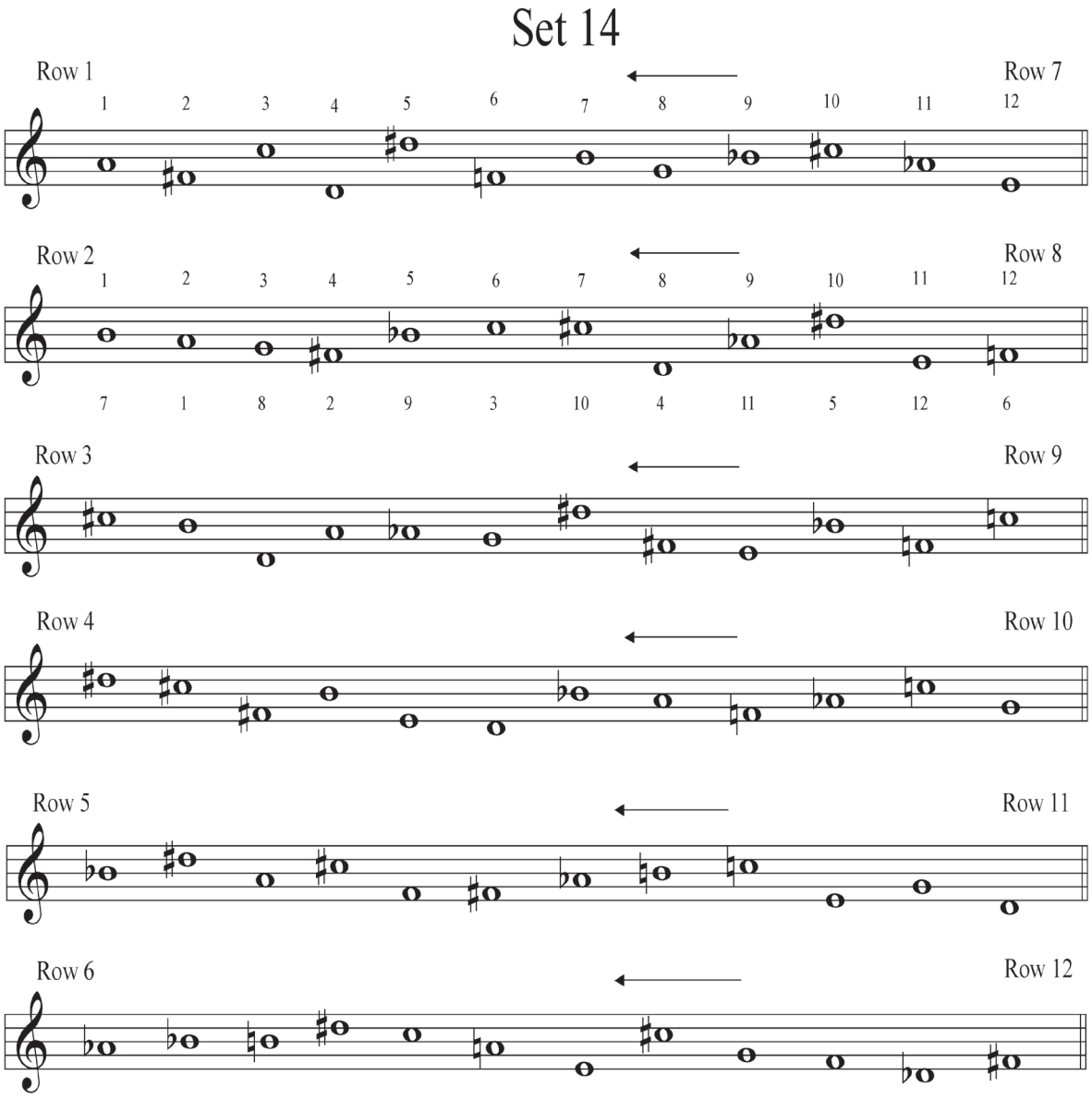

Set 9
Row 1
1 2 3 4 5 6 7 8 9 10 11 12
Row 7
Row 2
1 2 3 4 5 6 7 8 9 10 11 12
7 1 8 2 9 3 10 4 11 5 12 6
Row 8
Row 3
Row 9
Row 4
Row 10
Row 5
Row 11
Row 6
Row 12

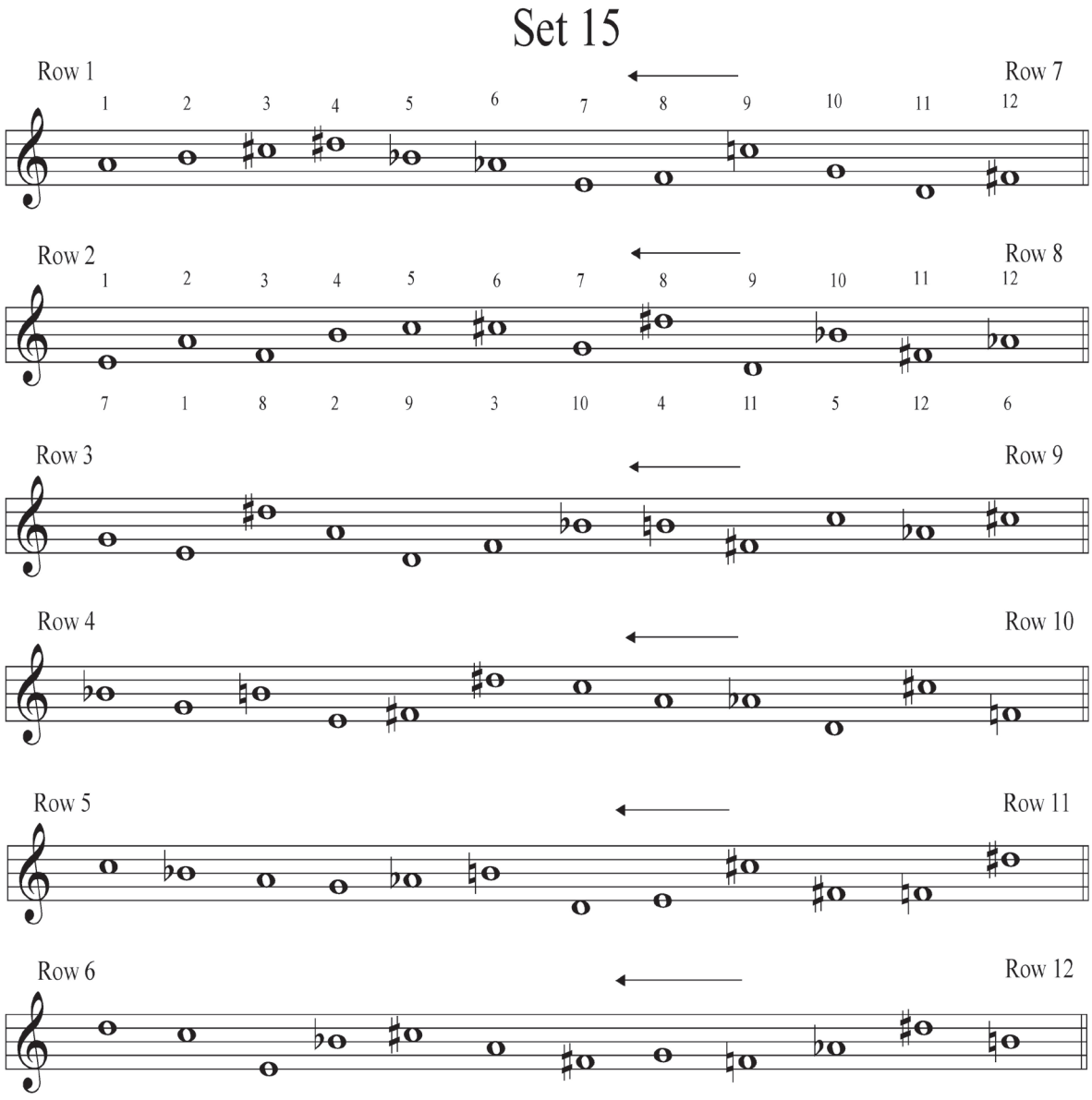

Set 10
Row 1
1 2 3 4 5 6 7 8 9 10 11 12
Row 7
Row 2
1 2 3 4 5 6 7 8 9 10 11 12
7 1 8 2 9 3 10 4 11 5 12 6
Row 8
Row 3
Row 9
Row 4
Row 10
Row 5
Row 11
Row 6
Row 12


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


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


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


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


Set 15
Row 1
1 2 3 4 5 6 7 8 9 10 11 12
Row 7
Row 2
1 2 3 4 5 6 7 8 9 10 11 12
7 1 8 2 9 3 10 4 11 5 12 6
Row 8
Row 3
Row 9
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Row 5
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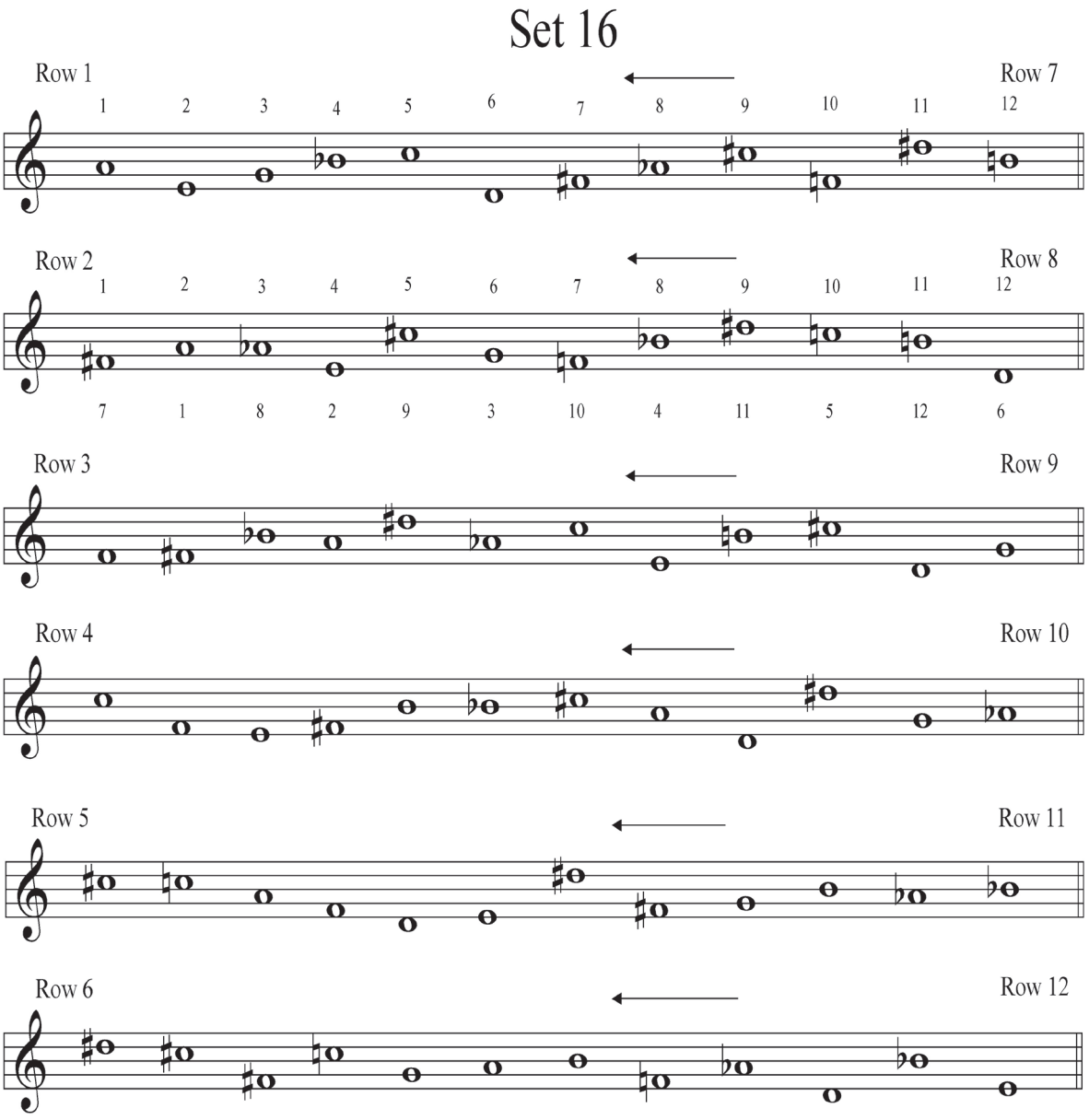
Row 6
Row 12


Set 16
Row 1
1 2 3 4 5 6 7 8 9 10 11 12
Row 7
Row 2
1 2 3 4 5 6 7 8 9 10 11 12
7 1 8 2 9 3 10 4 11 5 12 6
Row 8
Row 3
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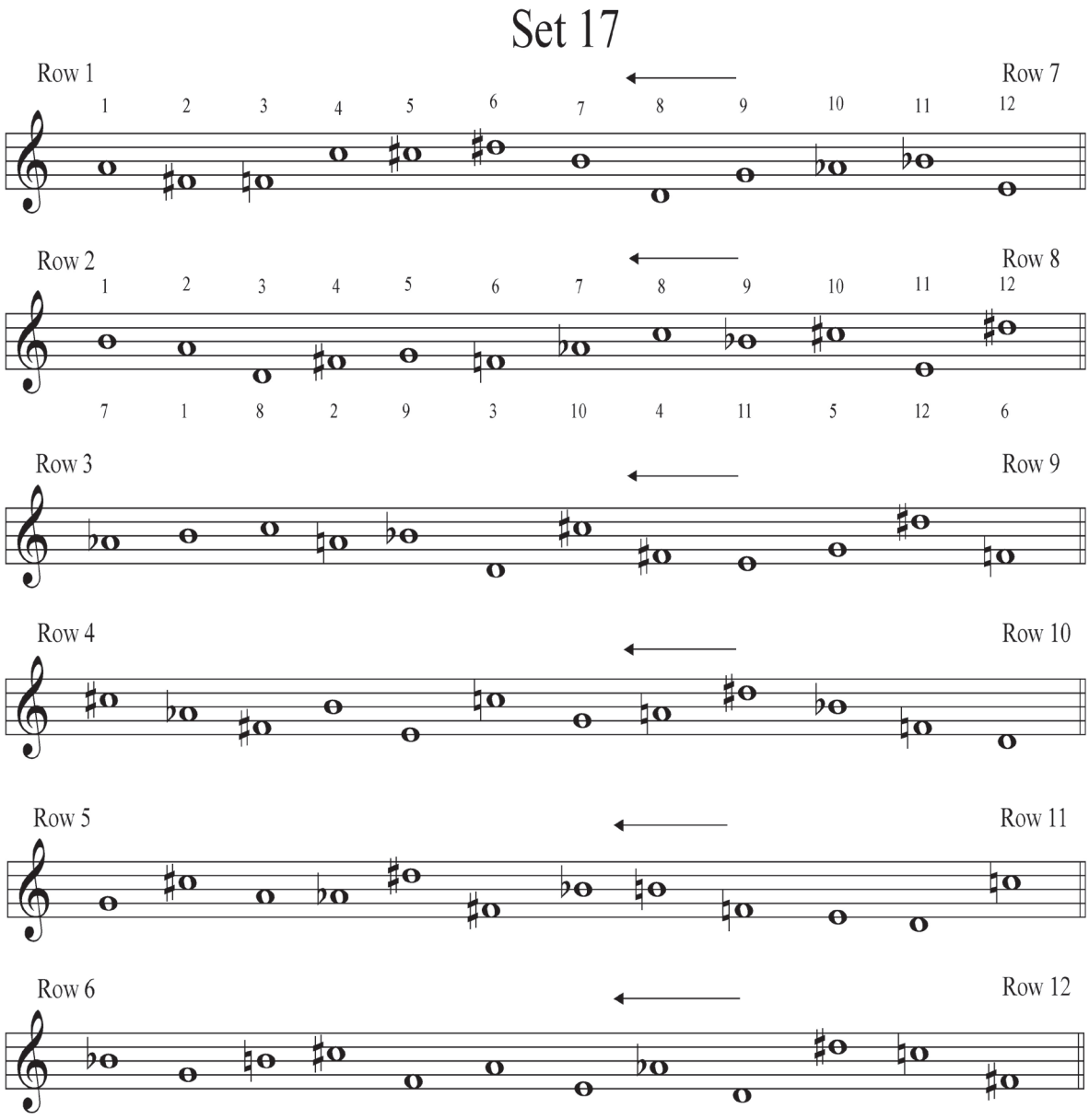
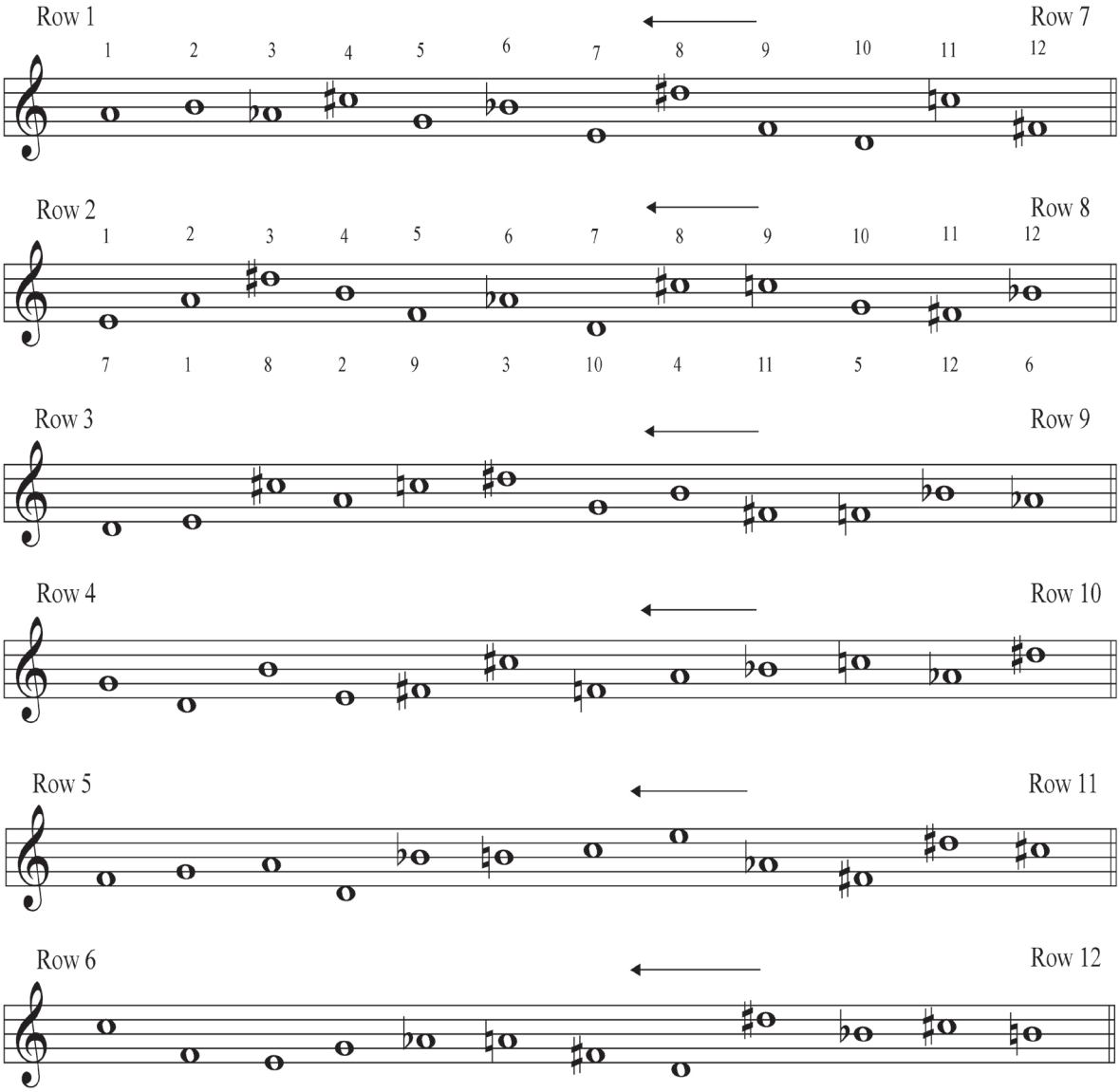
Row 6
Row 12


Set 17
Row 1
1 2 3 4 5 6 7 8 9 10 11 12
Row 7
Row 2
1 2 3 4 5 6 7 8 9 10 11 12
7 1 8 2 9 3 10 4 11 5 12 6
Row 8
Row 3
Row 9
Row 4
Row 10
Row 5
Row 11
Row 6
Row 12

Set 18


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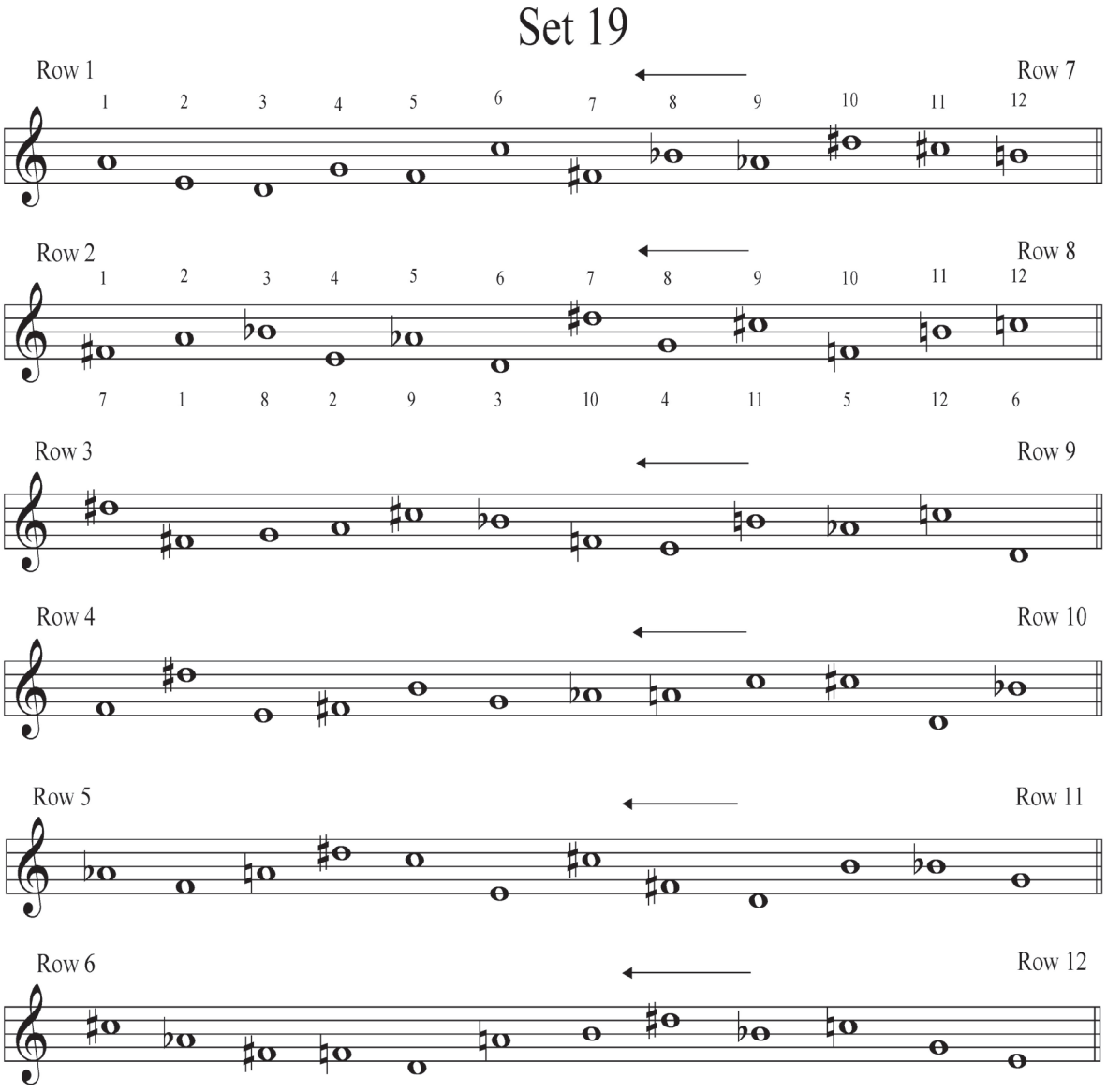
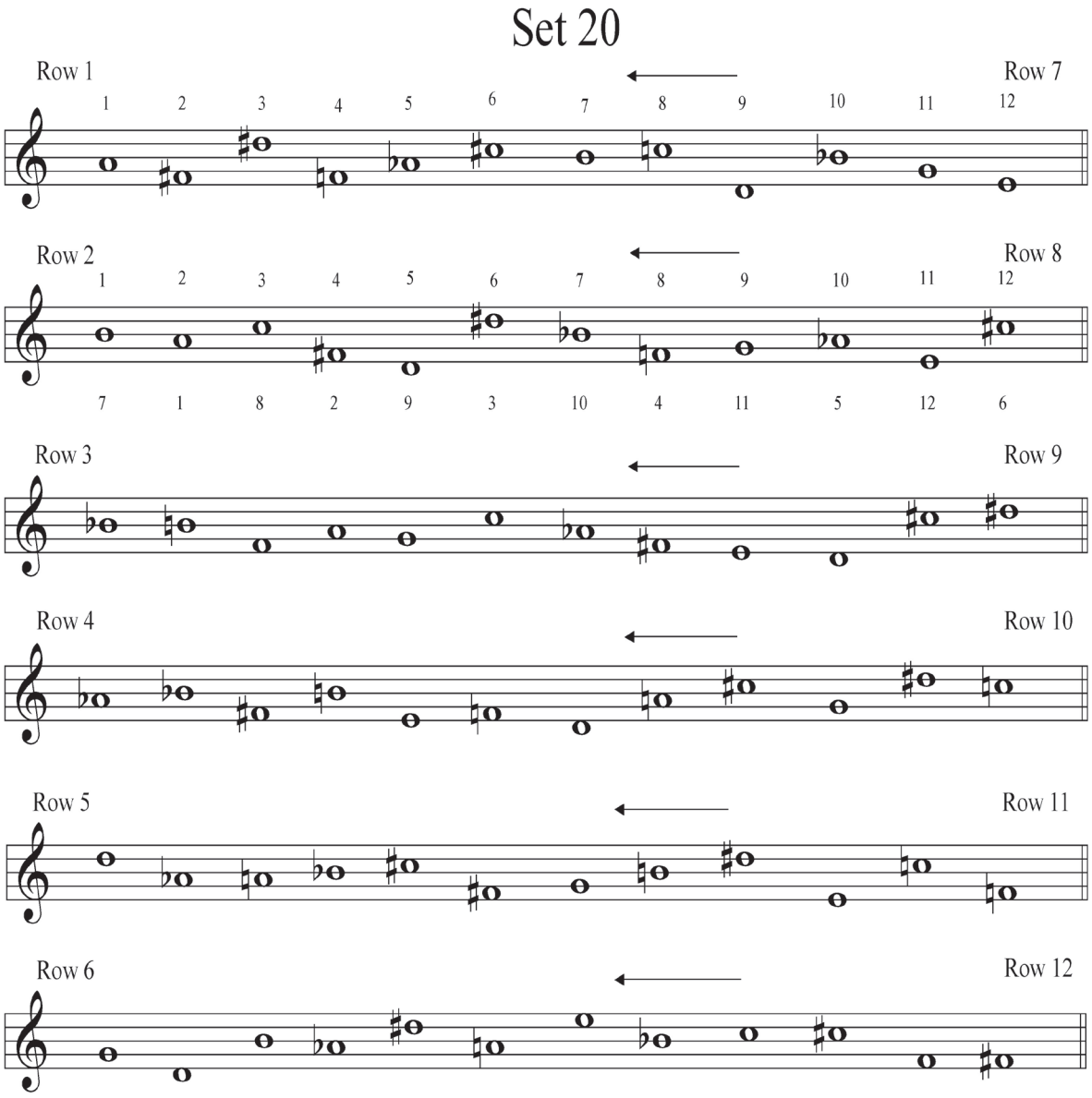
Row 12


Set 19
Row 1
1 2 3 4 5 6 7 8 9 10 11 12
Row 7
Row 2
1 2 3 4 5 6 7 8 9 10 11 12
7 1 8 2 9 3 10 4 11 5 12 6
Row 8
Row 3
Row 9
Row 4
Row 10
Row 5
Row 11
Row 6
Row 12


Set 20
Row 1
1 2 3 4 5 6 7 8 9 10 11 12
Row 7
Row 2
1 2 3 4 5 6 7 8 9 10 11 12
7 1 8 2 9 3 10 4 11 5 12 6
Row 8
Row 3
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Row 5
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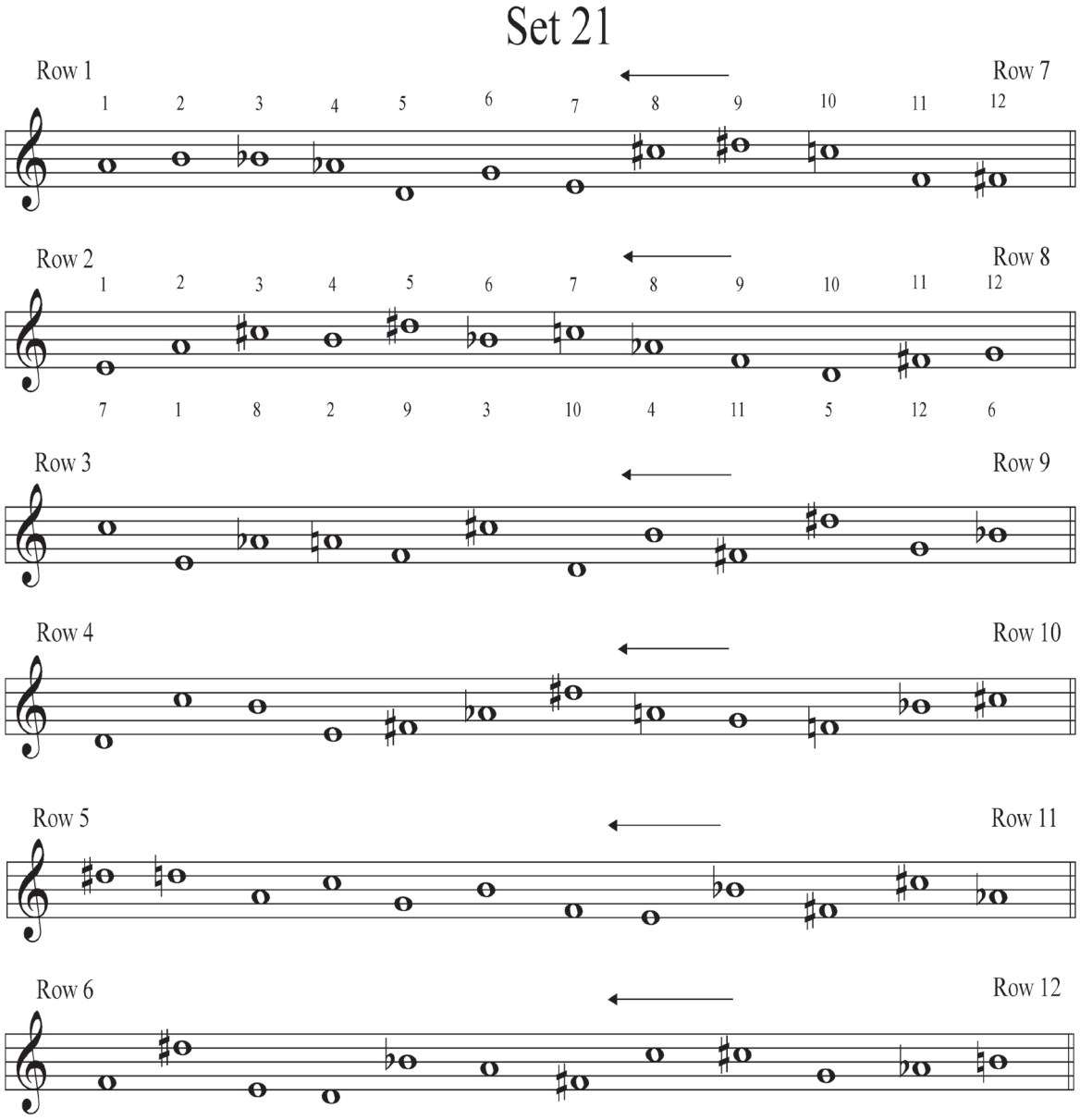
Row 6
Row 12


Set 21
Row 1
1 2 3 4 5 6 7 8 9 10 11 12
Row 7
Row 2
1 2 3 4 5 6 7 8 9 10 11 12
7 1 8 2 9 3 10 4 11 5 12 6
Row 8
Row 3
Row 9
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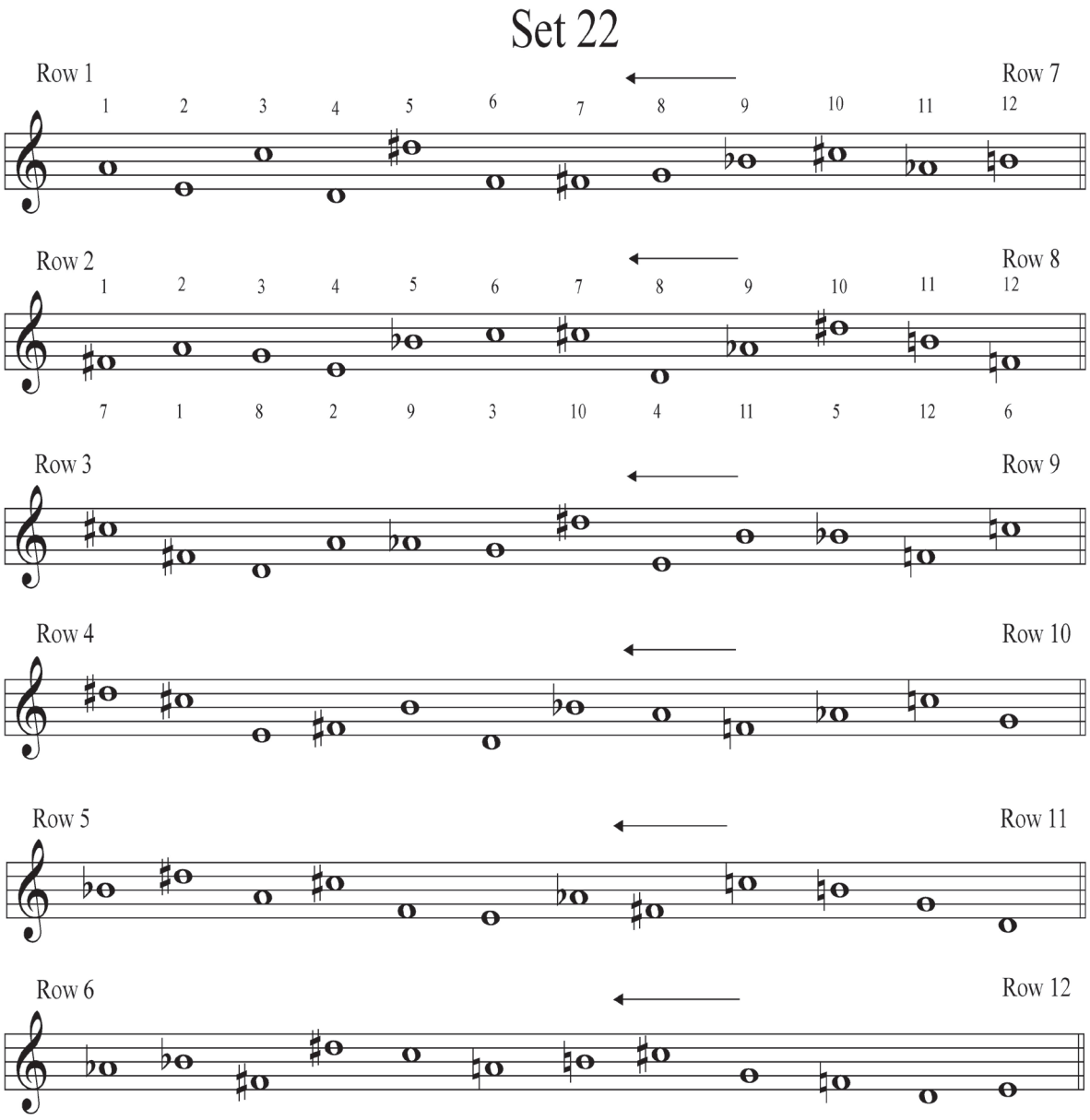
Set 22
Row 1
1 2 3 4 5 6 7 8 9 10 11 12
Row 7
Row 2
1 2 3 4 5 6 7 8 9 10 11 12
7 1 8 2 9 3 10 4 11 5 12 6
Row 8
Row 3
Row 9
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Row 5
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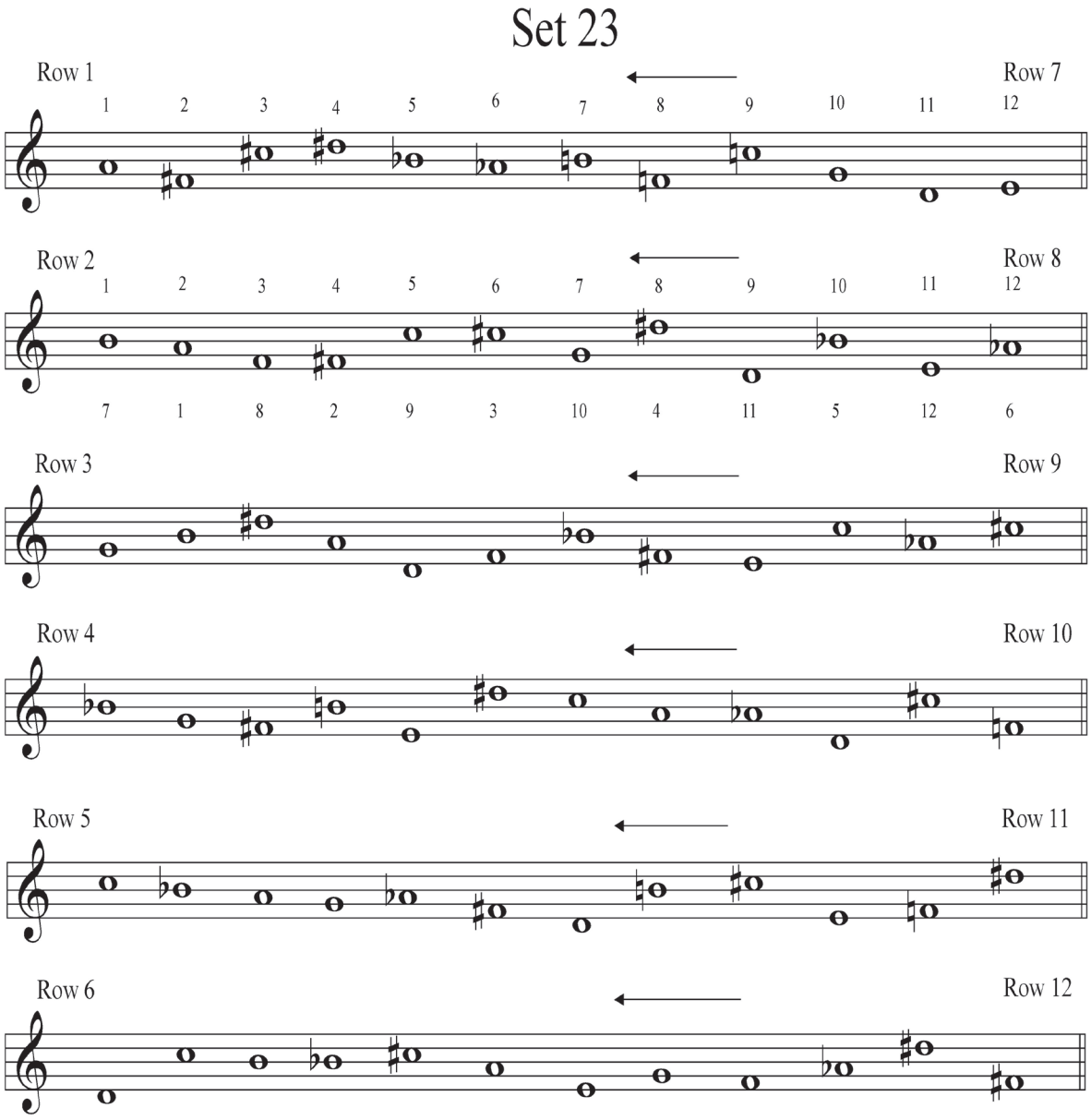
Row 6
Row 12


Set 23
Row 1
1 2 3 4 5 6 7 8 9 10 11 12
Row 7
Row 2
1 2 3 4 5 6 7 8 9 10 11 12
7 1 8 2 9 3 10 4 11 5 12 6
Row 8
Row 3
Row 9
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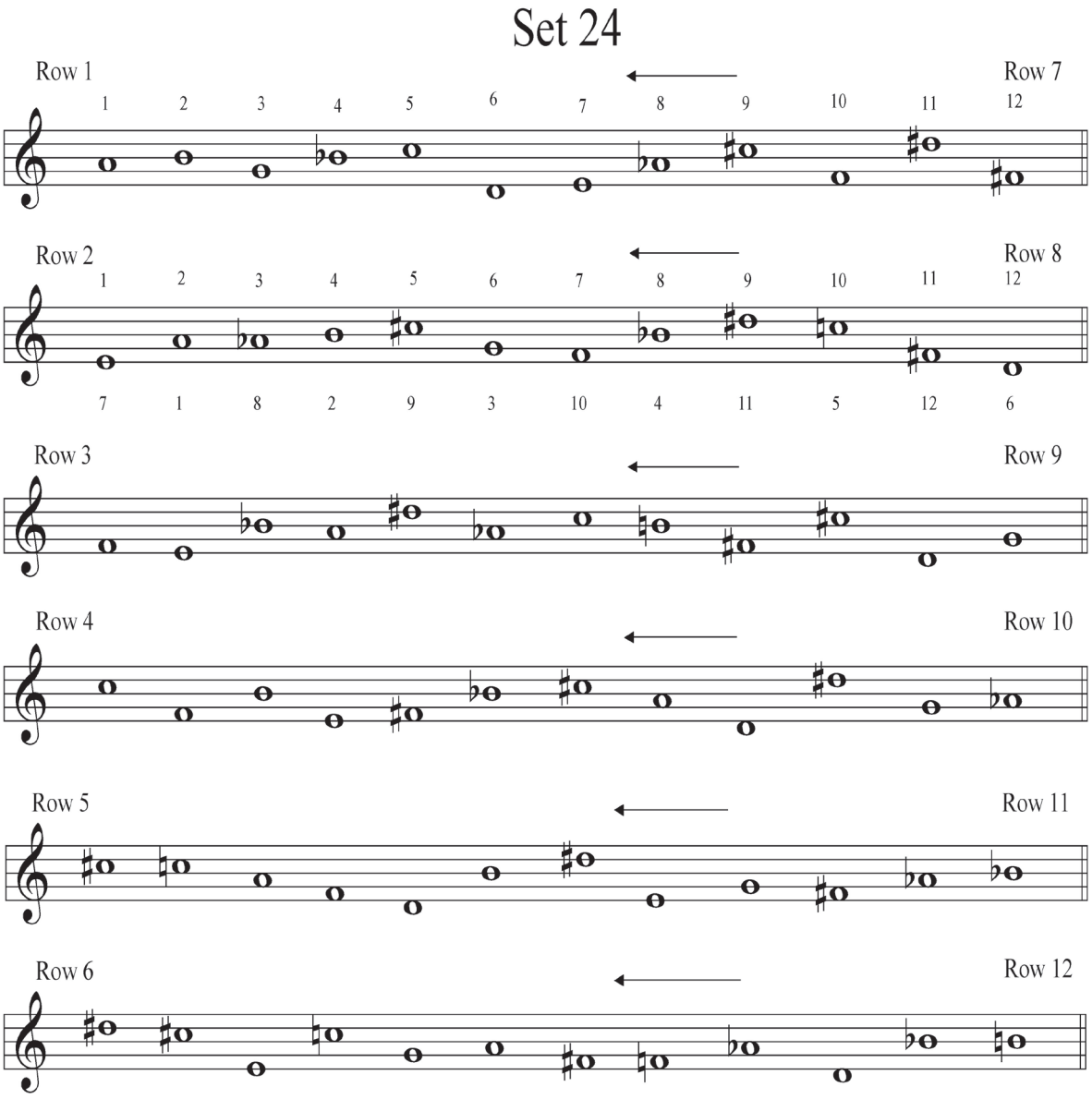
Row 5
Row 11
Row 6
Row 12


Set 24
Row 1
1 2 3 4 5 6 7 8 9 10 11 12
Row 7
Row 2
1 2 3 4 5 6 7 8 9 10 11 12
7 1 8 2 9 3 10 4 11 5 12 6
Row 8
Row 3
Row 9
Row 4
Row 10
Row 5
Row 11
Row 6
Row 12

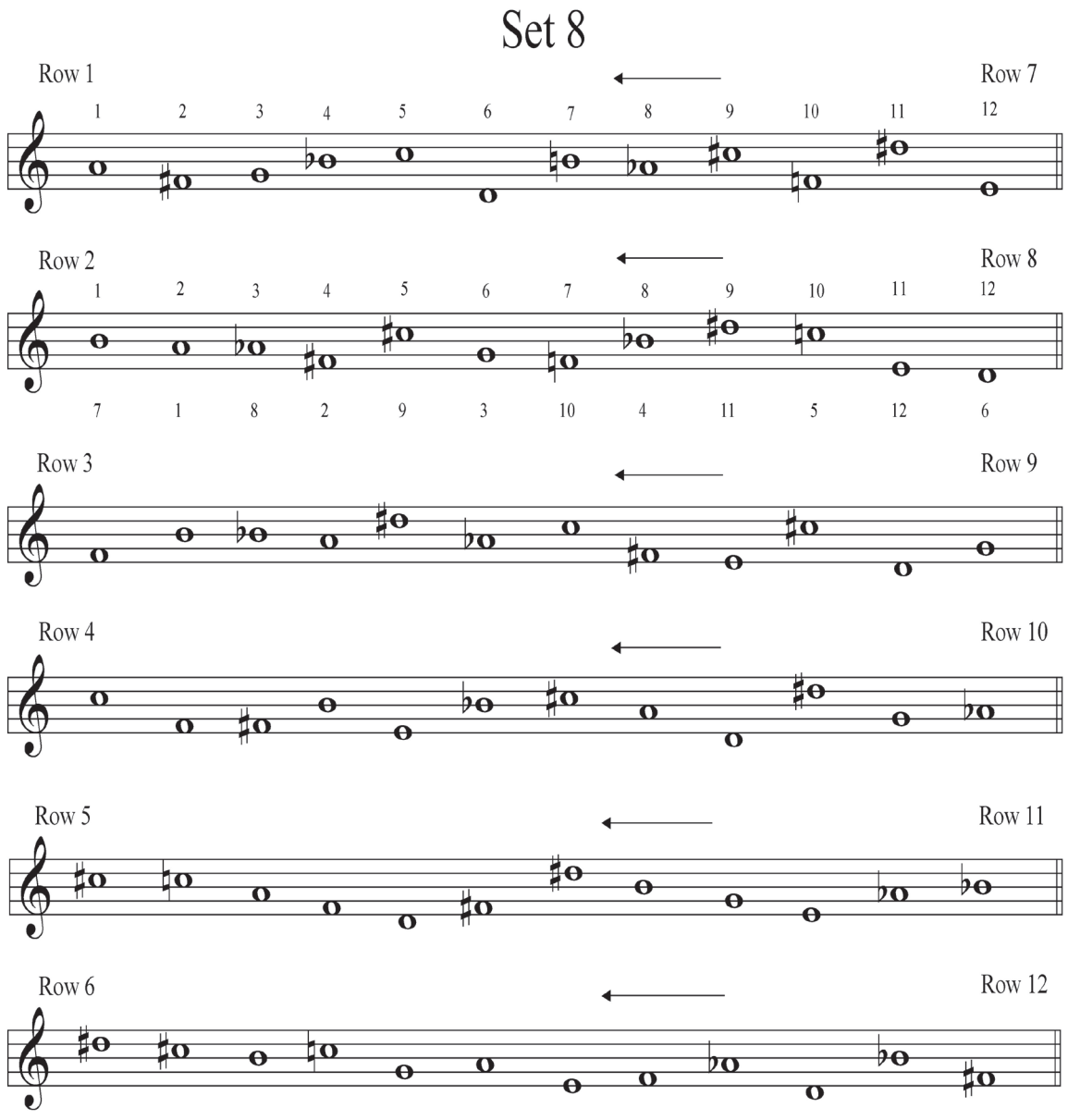
Chapter 6 – Chorale Composition With

Multiple Related Rows

As you remember, Chapter 3 illustrates a technique that restricts a given row, or 12 pitches, to a specific group of diatonic pitches. Typically, but not always, this group has 7 pitches. Additionally, Chapter 5 explored the concept of deriving additional rows from a single 12 – note source. Lets now combine these two concepts to further explore the possibilities of diatonic usage.

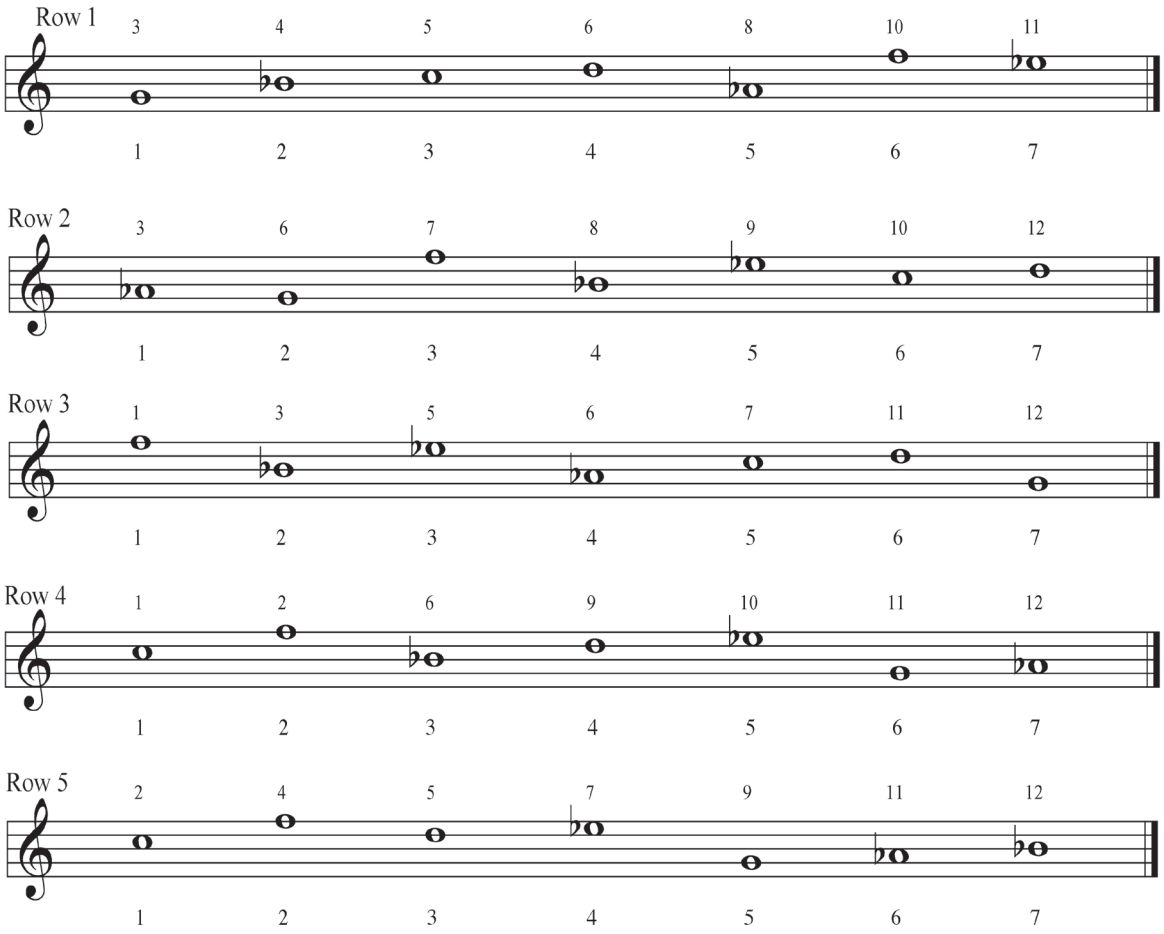
On the following page, example 1 shows six rows that comprise a set (Chapter 5 demonstrated that twelve rows complete a Set). However, remember that rows seven through twelve represent retrograde versions of the first six. Therefore, rows seven through twelve need not be included as we can see them by reciting the notes retrograde, or backward). These notes represent Set 8 from the original row that was derived from my name in Chapter 1

Ex. 1

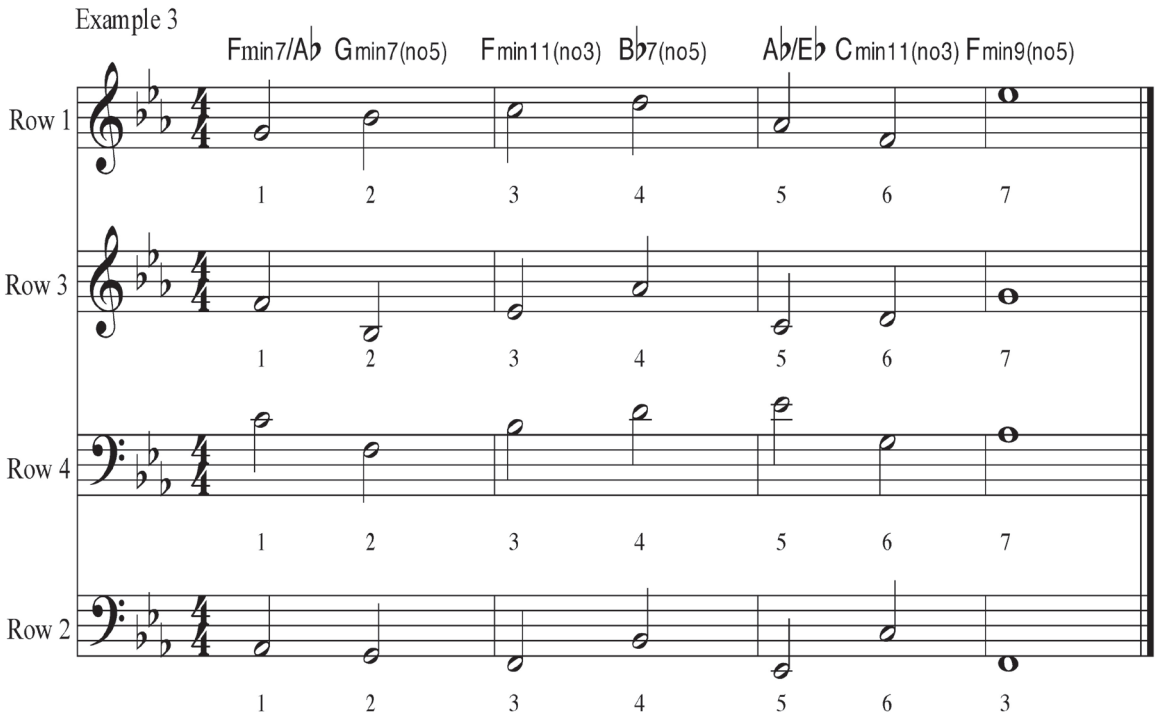


The decision is made that the composition I wish to work on will be in Eb Major (or C Minor). I have also chosen the first five rows from this set to be the foundation of my source material. Example 2 shows the extracted notes from Eb Major, in the order that they appear, from each row. Further, this example indicates renumbered pitches to make it easier to keep track of them (numbers below each staff). The key of Eb Major/C Minor has 7 pitches. The other five will be put aside for possible use at a later time.

Example 2



The next two areas to think about are harmonic motion (where each harmony/chord will change) and secondly, which *voice* each newly restricted row will occupy. For the latter, we can think in traditional terms such as Soprano, Alto, Tenor and Bass if we are to use four of the five restricted rows. Example 3 shows *one* possible layout and harmonization that is diatonic to Eb Major.



This example sets a harmonic motion of two beats per chord through the first three measures. The fourth measure contains the last chord. The choice as to which row goes to which voice can be a complex matter. To make the decision easier, two thoughts should be kept in mind. First, the ear tends to hear notes on top and on the bottom (rows 1 & 2 - Soprano and Bass) quite easily while notes that are given to the inside voices (rows 3 & 4 – Alto and Tenor) aren't as obvious to the ear. I like the directional quality of the first three notes in row 2 as well as the cadence quality of the pitches C going to F in the third and fourth measures. These points helped me to decide that row 2 would go to the bottom voice. As for the top voice, again I favored the directional quality of the first four notes of row 1.

Following these notes are successive downward leaps of a tritone interval and a minor third interval in measure three. This group of notes combined with the very last leap of a minor seventh going up caught my attention.

The second thought to keep in mind when trying to decide which row should go to which voice is vertical spacing. Note that all inside voices (the distance between rows 1 and 3 or rows 3 and 4) are not more than an octave away from each other. This will help the lines blend together to sound like a unit. With some instruments such as trumpets or saxophones, the distance should be even closer – no more than a Major 6th. Vertical distance between the bottom two voices can be a Major 10th or more.

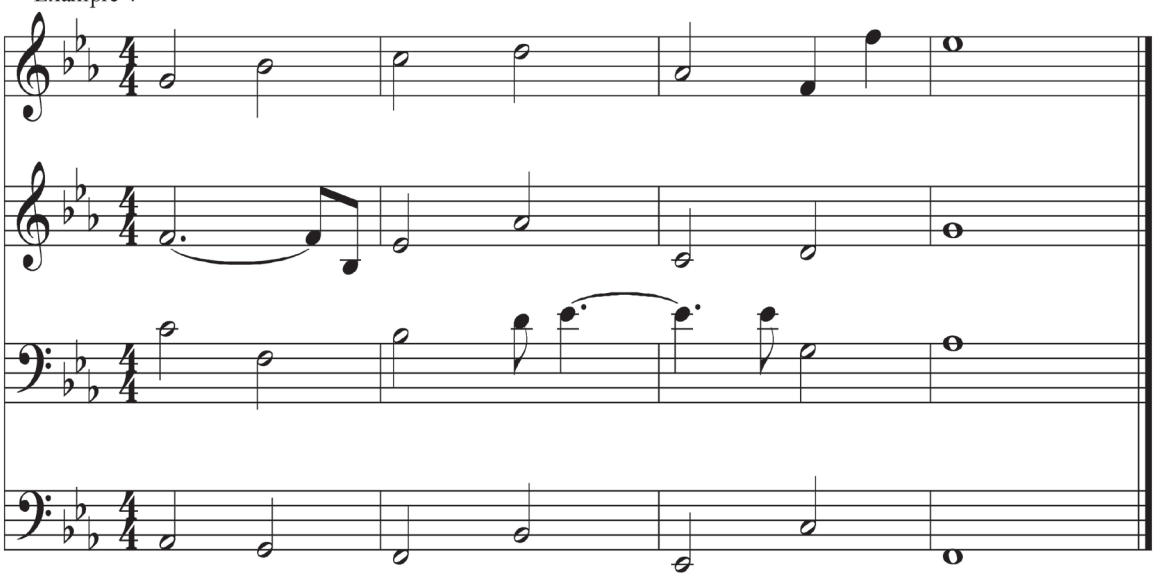
When laying out this basic framework, as in example 3, you may look at the vertical structures and find incomplete chords. In this case, the Gmin7 in measure 1 has no 5th; the Fmin11 in measure 2 has no 3rd and so forth. At this point in the process of composition, it is perfectly fine. The missing notes can be added later as developments to the

internal melodies. If the style you choose to compose in permits, you can leave the pitches out completely to be less obvious of your harmonic intentions and very possibly more interesting.

The next step in this technique is to look at our four - part framework and determine where there are doubled pitches. In a linear setting, where the goal is for each voice to have as much importance as the next, a doubled pitch will take away from this goal. Observe in measure 1 of example 3 that there are two Bb pitches on beat 3. In measure 2, also on beat 3, there appear to be two D pitches. On beat one of measure 3 the note Eb is doubled between rows 2 and 4. These doubled notes, and how they are handled, can be the basis of making this example sound a little more musical.

Referring to example 4 now, note how the Bb that was originally attacked on beat 3 of measure 1 does not get attacked now until the last eighth note of beat 4. This is called a delayed attack, meaning that the point of attack is now at a point later than either expected or originally placed. The pitch F, that originally lasted two beats in that same measure now has duration of three and a half beats. We did not have to lengthen the pitch F. It does however add an overall smoothness to the line that we are adjusting. In measure 2, the note D is attacked on beat 3 and quickly moves to the Eb that originally was set to sound on beat one of measure 3. This is called Melodic Anticipation and helps to maintain the linear independence of that line by moving to a new note. Melodic anticipation occurs when a pitch is sounded before the expectation of it. In this case, the original expectation of the note sounding is on beat 1 of measure 3. Many contemporary styles such as Jazz and Funk make great use out of Melodic Anticipation and Delayed Attacks. In fact, so much so, that if these styles did not rely heavily on these two concepts, the styles would not sound correct.

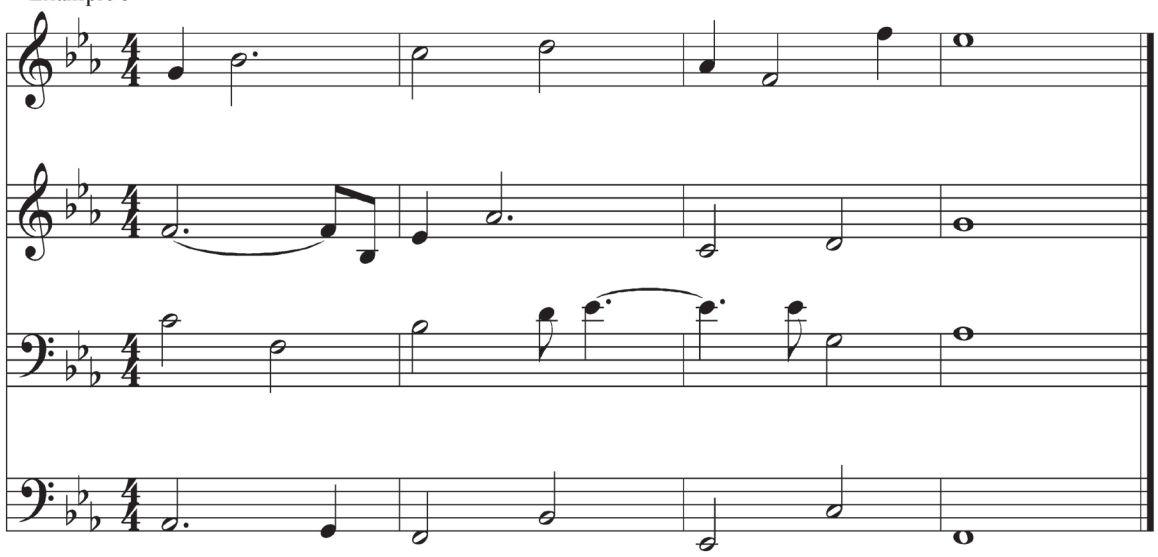
Example 4



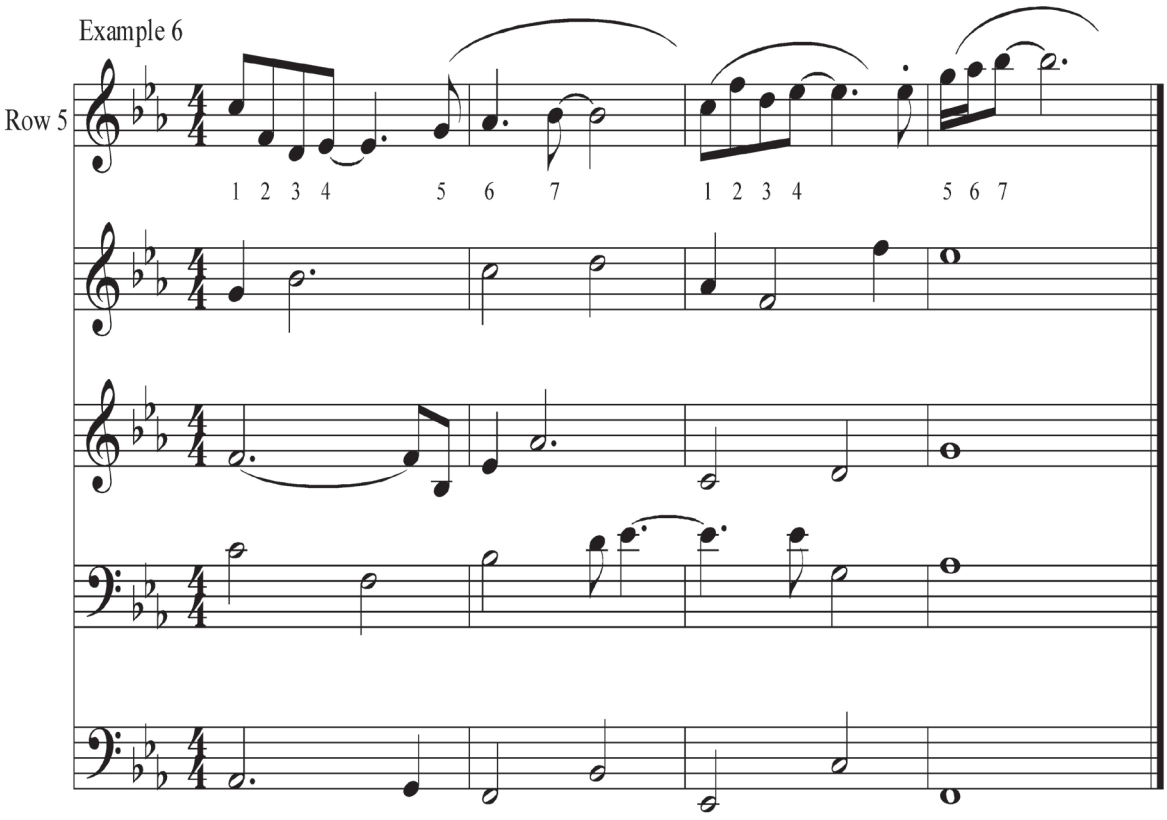
Example 5 continues this line of thinking by attacking the Bb in the top voice a beat early and delaying the start of the pitch G by a beat in the bottom voice, both in measure 1. A melodic anticipation also occurs in the second voice on beat 2 of measure 2 (the pitch Ab). In measure 3, the note F is not only anticipated by a quarter note, it is also broken up into two rhythms and displaced upward by an octave on beat 4.

In chorale style writing, a nice by-product of Melodic Anticipation and Delayed Attack is the sense of forward movement by the listener because something is constantly moving, therefore keeping the listener interested. If we kept our composition at the level that it was at example 3, all half notes except measure 4, the listener would be bored quickly. An examination of example 5 will bear out the difference. Because of these alterations there is now at least one voice moving on some part of all four beats until measure 4, the end of the composition. One can easily see and hear the difference between the two examples.

Example 5



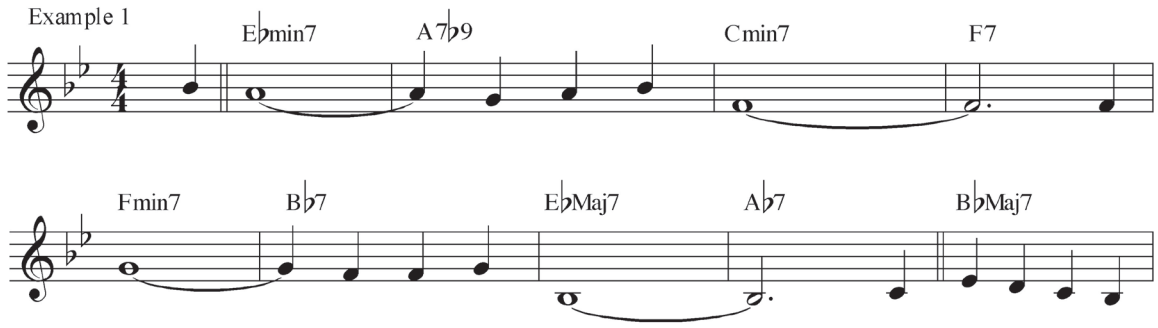
Depending on our intention, the composition could be complete at example 5 or we could continue with further internal voice movement. Another way to proceed would be to add an additional voice. Example 6 shows the newly added voice, using row 5 as its source. Starting from note 1, I've composed a short melodic phrase that is two measures in length. Measures 3 and 4 are similar except that the pitches have been displaced an octave from note 2 on. Also, the rhythm is varied in the last measure compared to measure 2. Both techniques, Octave Pitch Displacement and Rhythmic Variation, are standard composition tools that should not be overlooked as to their importance.



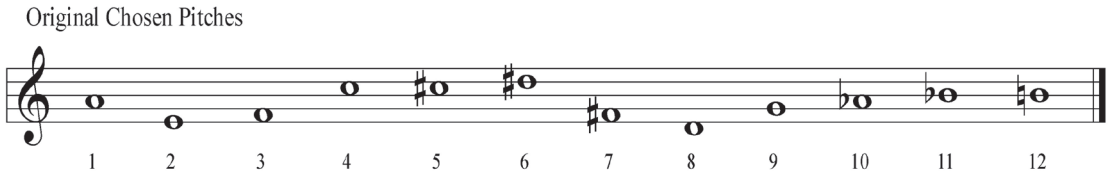
Chapter 7 – Harmonization Via the Row

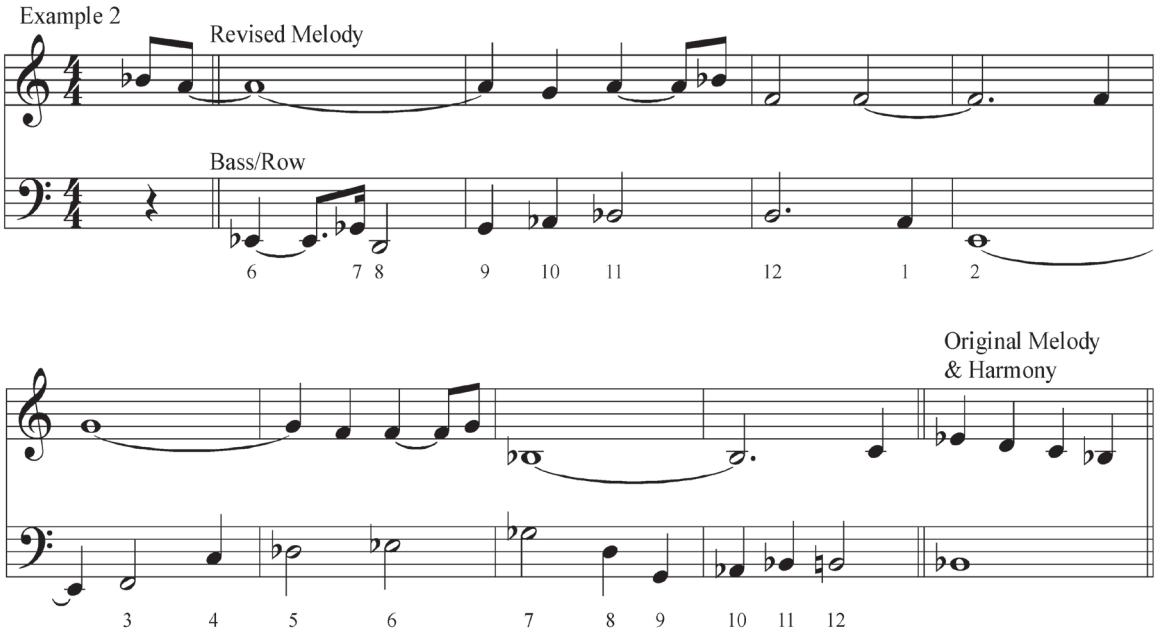
It is quite common for an arranger to take a song, say a Jazz standard, and change the harmony to better suit a particular style that the song is to be re-arranged in. This is called reharmonization. What the arranger intends to do is retain the original melody (so that the song is still recognizable), but add to or completely replace the existing harmony. There are many techniques that one can use to reharmonize a song. These range from simple replacement chords to very complex substitution patterns. The technique that will be discussed here involves the use of the complete 12 - pitch row that we began the book with. The beauty of this particular reharmonization technique is that it's construction is fairly simple yet yields very complex sounds. To illustrate this technique I have chosen the Jazz Standard *Stella by Starlight*, by Victor Young.

Example1 shows the original melody and chords to this song.



The next step is to rewrite (if deemed necessary), the original melody to fit the particular style that has been chosen to work in. In this case, the melody in example 2 has been slightly rhythmically rewritten to fit a Jazz Ballad style with the tempo being about 75 beats to the minute. The next step is to determine what the harmonic motion is going to be. How often do we want the harmony to change? Do we want the harmony to change every measure, every 2 beats, or possibly every beat in some musical phrases? Once deciding this we begin, in order, to place a note in the bass voice at every point that we want a chord change to occur. For easy reference to the original 12-note source I have included it with example 2. Notice that I did not start this procedure with note number 1.





Again, referring to example 2, the harmonic motion that I've chosen for the first measure is 2 beats per chord. Observe in this example that the first note chosen is **Eb**, the 6th note from the 12-note source. This pitch is followed by **Gb**, note number 7, and then **D**, which is note number 8. The two notes that I've decided that I really want to use for the foundation of this harmonic setting are **Eb** and **D**. One of the easiest ways to get past a note you might not want to use (without omitting it altogether) is to place it on the weakest part of the beat – in this case, the last 16th note. In this way there is very little emphasis placed on that note and therefore will not be noticed as easily by the listener.

Referring to the example, it can be seen that the **Gb** is placed on the last 16th of beat number 2 of the first measure - a very weak part of the beat. I've decided that the second measure will have harmonic changes on beats one, two and three. Referring to example 2 again, the bass line starts with note number 9, which is **G**, and continues through **Ab** and **Bb** - the 10th and 11th notes of the original group. This process continues until completion of the section that is to be reharmonized - in this case the original harmony is to be used at measure nine.

It can be observed that in measure three we've arrived at the 12th or final note of the original group, the pitch **B**. There are a few options as to where we can get additional notes to continue the bass line. The bass line can:

Continue with a completely new or derivative row (permutation),

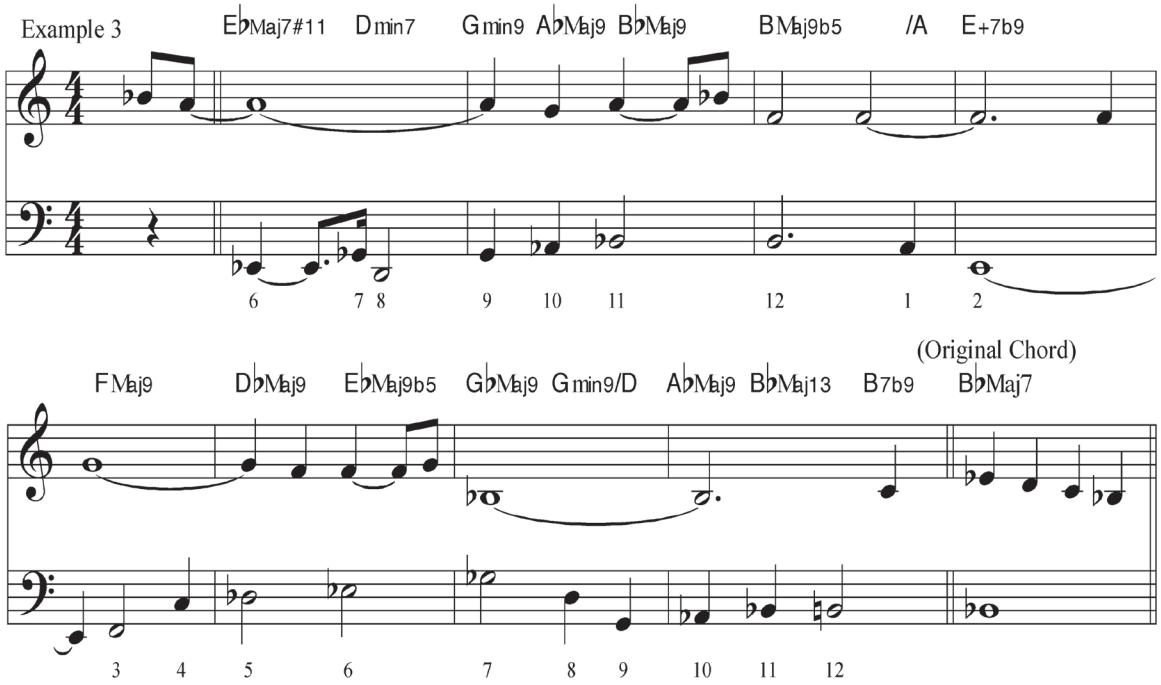
Continue in Retrograde form (reverse),

Continue in Retrograde Inversion form (reversed and inverted),

Continue in a Transposed form, or as has been done in example 2,

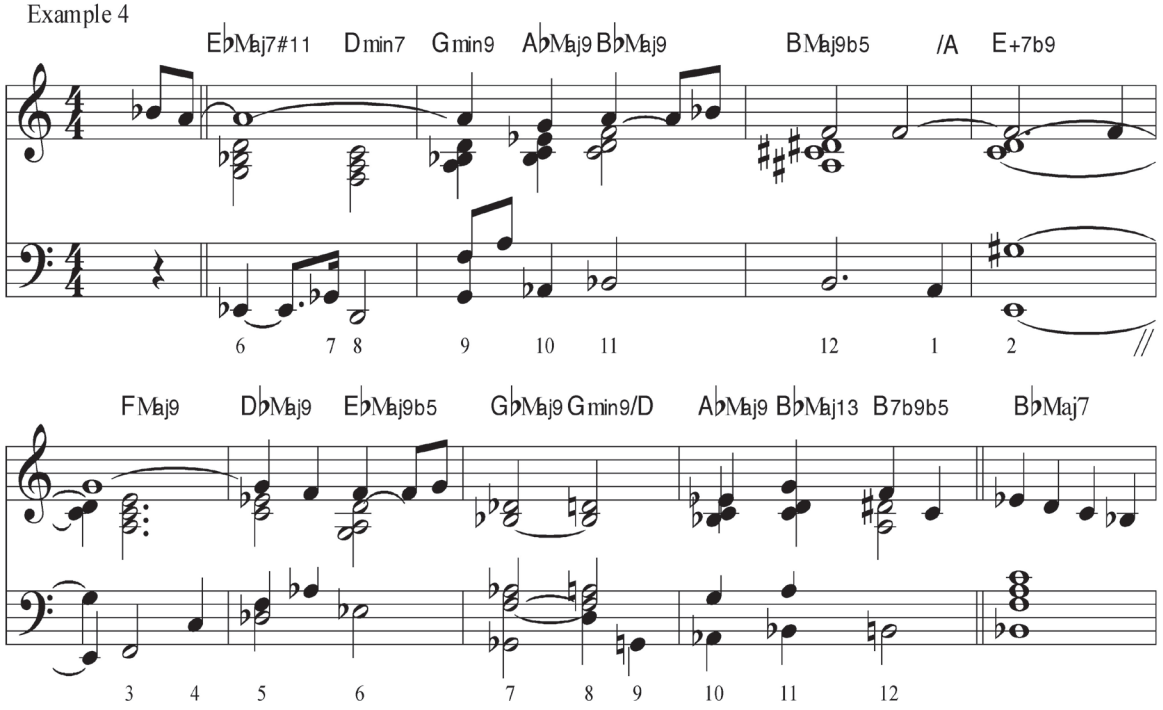
Continue around to the beginning of the original row (note number 1), and cycle through the remaining 12 pitches.

From this point, follow the remaining notes in the row and observe that they have been placed in the bass line where the harmony is to change. In this example the last note being used for reharmonization is number 12, the **B** natural. The fact that I've ended this example on the last note of the row is purely coincidence. This wouldn't necessarily happen unless I designed it to be that way for a musical reason. As stated earlier, the chords go back to the original harmonization in measure 9, a **Bb** note in the bass, which corresponds to a BbMaj7 chord.



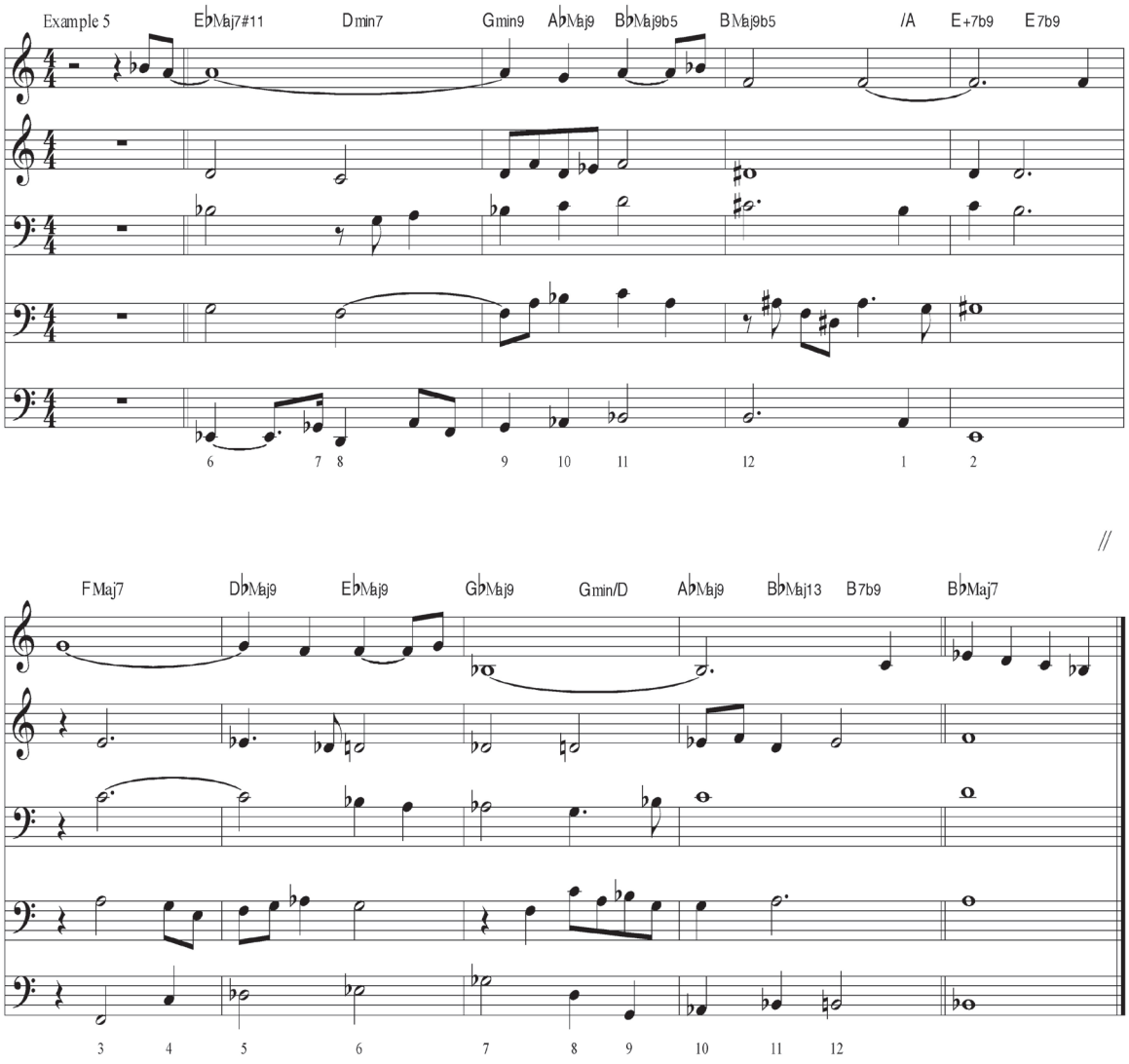
In example 3, one possible harmonization is shown using standard chord symbols. There are two important concepts to keep in mind when deciding on the harmonization to be used. The first is to make sure that the given melody and bass line has something to do with each other harmonically. For example, if on beat one of the first measure an FMaj7 chord were chosen, there would be an **A** in that chord (this would match the melody note), but not an **Eb**. This harmonic choice wouldn't sound correct. The second concept to remember is that the voice leading between chords needs to be as smooth as possible. Smooth voice leading can be achieved by using step - wise movement between chords, and retaining as many common tones as possible. Frequently, these two concepts end up determining the actual chord quality. On beat one of measure 7 it is entirely possible to have a Gb7, a dominant chord.

Example 4



Example 4 illustrates a possible voicing of the chosen harmony from example 3. If Gb7 were chosen in measure 7 it would have required the 4th voice from the top to move from a **G** in measure 6 to an **Fb** on beat one of measure 7 (a minor third interval down). The next note would be an **F** on beat three of measure 7 (the 7th of the Gmin9), and then back to **G** again in measure 8. It is much smoother to have the **F** common tone between GbMaj9 and Gmin9/D. Hence, the choice of GbMaj9.

On the next page, example 5 gives a "score view" of how the inside voices could be expanded upon for further development. Note the increase in melodic and rhythmic activity. Selection 15, on the CD, demonstrates the comparison to Selection 14. Example 5 could be performed in a chamber group setting as well. Each line would be assigned to one or more instruments.



Chapter 8 – Melodic Shape

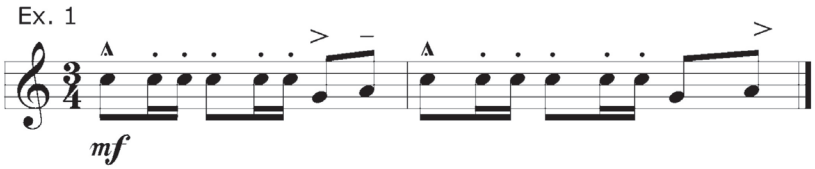
As a composer, I've become a firm believer in the value of spending time *thinking* about what I want to musically say *before* I try to say it (write the pitches). This can save a great deal of time during the writing process by keeping you focused on your main point.

If your client requests you to write a theme that suggests adventure, where would you start? What kind of a melody could represent adventure? What kind of a melody wouldn't represent adventure? There are conceptual ideas we can explore to help us narrow down our choices – that of melodic shape. In other words, if we figure out what type of melodic shape sounds adventurous, from a conceptual point of view, then it will be much easier to write the actual notes that fit that idea. The pitches themselves won't matter, as the shape of the line will determine whether we are suggesting adventure or not. There are three fundamental shapes that all melodies contain some part of.

1. Line Shape:

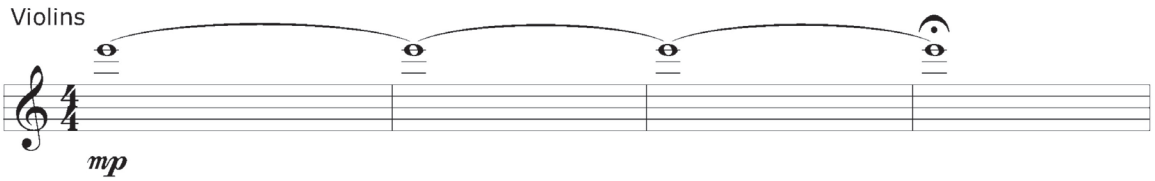
The main characteristics of this shape are repeated notes *or* notes held for a long period of time, as in a pedal point high above or below the staff. An ostinato also falls into this shape classification. As the group of notes repeats itself over and over, a line shape is formed.

Example 1 illustrates a line shape. Note that there are many repeated notes, particularly at the beginning of each measure. When playing or singing this example, does it seem like the melody is a complete thought, or do you want something else to happen?



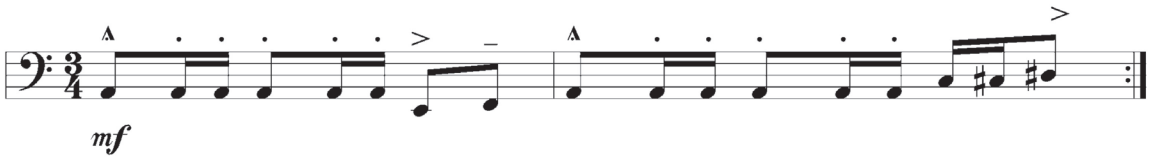
Example 2 is what is often called a "wire." I'm sure you've heard this technique used in many films. As in example 1, is this a complete idea? Are we satisfied, or do we want something else to musically happen?

Example 2



In example 3, I have composed a simple two – measure phrase that repeats over and over. If this continues over a period of time, will it be enough of a statement for us, or do we want something else to musically happen as well?

Example 3



These three examples are all line shapes. After careful listening, we can come to the following emotional response (or dramatic) responses:

- Line shapes aren't complete thoughts in themselves. Rather, they "set up" action or musical movement to come.
- Line shapes are great for introductions *to* a main idea – they are not the main idea themselves.
- Over a period of time, line shapes, as in an ostinato, will fade into the background

as the repetitiveness will let the brain register that idea, and then focus on other melodic ideas as they are introduced.

One other thought about line shapes:

If long tones are added to syncopation (very rhythmic music), the long tones will take the edge off the syncopation making it less forceful. This isn't necessarily a bad thing, just another textural choice. There are many examples of this in funk music where the bass, drums, percussion and horn lines can be very rhythmic, but there is also a keyboard playing long tones, called "pads" (often string or brass sounds) that in a very real sense, "glue the sound together." Again, the long tones (pads) take the edge off of the overall forcefulness of the rhythm.

There are also examples off this in orchestral literature. One that comes to mind right away is the introduction to the Ralph Vaughan Williams piece entitled, "The Lark Ascending." In the introduction to this composition, a solo violin plays a fairly rhythmic cadenza. While this is occurring the rest of the string section is playing long tones (literally tied whole notes) using an Emin(add9) chord for what seems like minutes. The held notes in the strings adds glue, harmonic support to the cadenza, an also takes the edge off of the cadenza. Also interesting in this piece is that at about the halfway point of the introduction, the held notes go away completely so that just the violin soloist is playing the cadenza – no other instruments are sounding. When this happens, the focus is now solely on the violinist, but also some of the energy (or edge) comes back to the overall sound.

Example 4 starts with a syncopated drum and percussion groove to my song, "Toasted Hop." Note how much energy is present. If this groove were to continue as an ostinato, our ears (brain) would want to hear something else happen. At measure 5, something else does happen. The guitar enters with "long tones" – line shapes, if you will. The guitar part does harmony now, something that wasn't there previously, but it also helps to take a little edge off the syncopation and glue thee music together.

Listen: Example 4 - Toasted Hop Intro

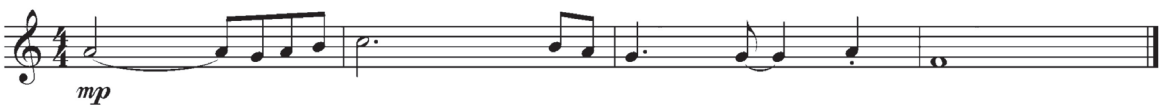
Example 5 is an illustration of how I used a wire in the strings, and a solo trombone playing a melody against it. Its use is as an introduction to an arrangement I wrote to Jobim's "A Felicidade." Note how the wire, or pedal point, in the strings presents the emotional need to hear more as it doesn't seem to go anywhere. On cue, the solo trombone answers that request while focusing the attention on the soloist. Once the trombone enters, the wire now serves the purpose of holding the music in one place until it, and the rest of the strings and woodwinds move.

Listen: Example 5 - "a Felicidade" Intro

2. *Circle Shape:*

Imagine the shape of a circle. Note the smooth edges. To create a smooth sounding melody we need to use a minimum of leaps. The majority of intervals used in a circle shape are half and whole steps. It is possible to mix in an interval larger than a half or whole step to this type of melodic idea, particularly at the end of the phrase, but the overriding idea must be small intervals. This next example illustrates a circle shape.

Ex. 6



Example 6 is made up primarily of half and whole step intervals. The only exception is at the very end of the phrase. Dramatically speaking (emotionally), this type of shape "tells the story," which is why a circle shape is used in so many verses.

The application of this shape is all around us. It is easy to sing due to the stepwise motion. Think of a popular song, or a church hymnal. The verses usually have a preponderance of stepwise motion - again, to make it easier for people to sing. Here are a few great songs that have a Circle shape for a verse (or sometimes a chorus/bridge) section of the song:

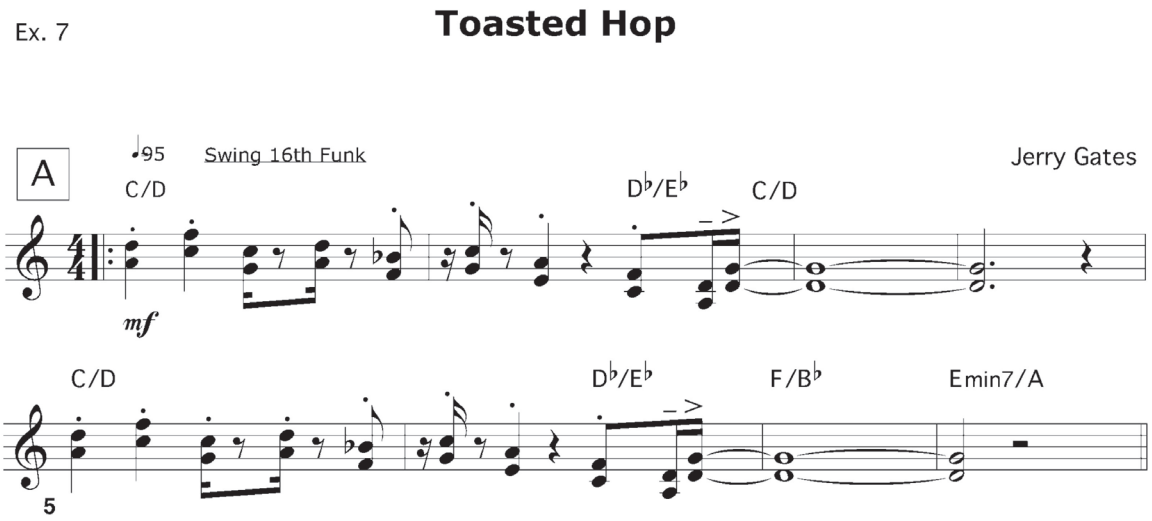
Cole Porter's "Night and Day" ("A" section)
Gustav Holst "Venus," from The Planets
Warren/Gordon "There Will Never Be Another You"
Christmas Carols such as "Deck The Halls" or "The Little Drummer Boy"
Kenny Edmonds "Breathe Again" ("B" section)
Wayne Shorter "Footprints"
Antonio Carlos Jobim "How Insensitive"
Rogers/Hart "My Funny Valentine" ("A" section)

3. Square Shape:

As opposed to line shapes (repetitive nature or long tones) or circle shapes (smooth, step wise motion), square shapes have the element that is, so far, missing – intervallic leaps. The larger the leap, the seemingly more dramatic the melodic line. Dramatically speaking, square shapes seem to suggest adventure, despair, happiness, loneliness, and a host of other extreme feelings and emotions. Composers that write for dramatic purposes (film composers, for example), sometimes think about this type of melodic shape before the actual pitches are secure, or even known.

Example 7 shows the verse of a song of mine called, "Toasted Hop." The top note on each stem is the melody, with a harmony part a 4th below. If you look at just the top notes, you'll notice that the intervals between each are not repetitive, nor are they overall stepwise in nature. The first interval is a minor 3rd (D up to F), followed by a 4th (F down to C), up a whole step (Bb up to C), followed by a minor third down(C to A), and a major third down (A to F). Finally, a minor third interval down (F to D), and a perfect 4th up (D to G). This is NOT a particularly smooth melody, nor was it intended to be!

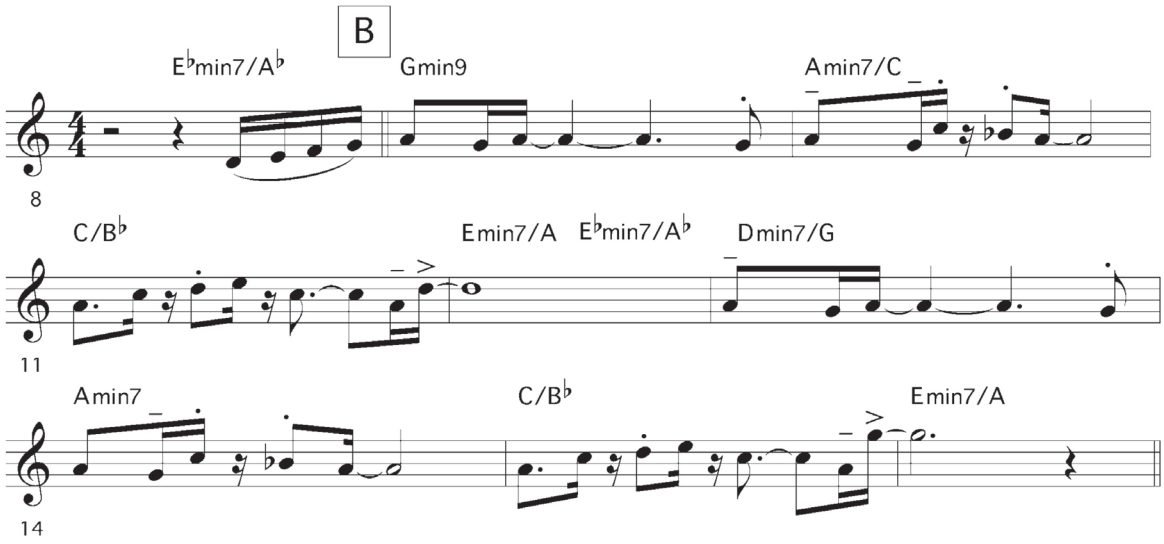
Ex. 7



While listening to this example note how ”jagged” the melody sounds compared to previous examples of the other two shapes.

For a variation of this concept, lets look at example 8.

Ex. 8



This is the “B” section to “Toasted Hop.” Starting with the pick up to letter B, the melody is a little smoother (circle) due to the stepwise motion that is present. This was a conscious decision while writing. That is, to provide a contrast to the first melody. However, there are still a few leaps to keep things interesting!

The three fundamental melodic shapes presented here are not often seen as “note for note” one shape or another. Often melodic lines are a combination of shapes. What one looks for however is a line that suggests one shape over another. If a melody has a great deal of step wise motion, but a leap here and there, then it will still be heard as a circle shape. This is particularly true if the leaping intervals are not placed near the beginning of the phrase where the ear first identifies it. Like wise as in example 1 at the top, a series

of repeated notes will be heard as a line shape, even when periodic intervals are present, because the leaping intervals are at the end of the phrase.

Listen to example 7/8

For further research into melodies that are a Line shape, listen to:
- Leonard Bernstein's - "Maria," From West Side Story
- John Williams – "Star Wars," "Indiana Jones," "Jaws" and many others (main titles)
- David Shire – "The Taking of Pelham 1,2,3" (Main Title)
- Aaron Copland – "Appalachian Spring"
- Hammerstein/Kern – "All The Things You Are" (and many others)
- Horace Silver – "Nica's Dream"
- Johnny Mercer – "Autumn Leaves"

Summary

The concepts I've presented are a mere fraction of the music composition techniques that have been explored in the last 75 – 100 years. These explorations continue today. In teaching these concepts and techniques at the college level, my students frequently discover additional variations and new approaches to apply to the same twelve pitches – you can too.

It is hoped that the techniques discussed in *All Twelve* will lead you to many great, unexpected and surprising results. Composition is supposed to be enjoyable, so have fun!

For information regarding my music, hiring, online learning, private studies or blogs, please visit my websites:

www.jerrygatesmusic.com

www.myspace.com/compjgates

http://www.reverbnation.com/jerrygates

http://jerrygates.berkleemusicblogs.com/

Biography

Educator, composer, arranger, and bassist, Jerry Gates has been a music industry professional for over 30 years. His TV and radio credits include Bank of America, AT&T, Log Cabin Syrup, Scope Mouthwash, Marlboro cigarettes and music preparation for "The Dennis Miller Show", Bill Holman, film composers Jack Smalley and Richard Band. As professor at Berklee College of Music in Boston, MA, Jerry teaches Contemporary Arranging and production courses at all levels, Directed Study in Arranging, Contemporary 12 - Tone Composition and Music Preparation courses. Jerry maintains an online presence through his authoring of courses and teaching in Berklee's online school, Berkleemusic.com. He also admits private online students that seek further studies in composition and orchestration through his website, www.jerrygatesmusic.com.

Jerry's most recently completed projects include music for videos, Nestle/Wonka.com, directing and writing music for college concerts featuring artists such as drummer Steve Smith and Los Angeles studio bassist Neil Stubenhaus. He has also directed annual

student concerts at the Berklee Performance Center. Mr. Gates has also completed a commissioned composition titled "The Long Shadow of Lincoln" for the Shattuck St. Mary's School in Faribault, Minnesota. This work engaged a 50 person choir, 37 piece orchestra and borrows the text from Carl Sandburg's famous poem, "The Long Shadow of Lincoln: A Litany" as lyric. Jerry has recorded a collection of contemporary instrumental compositions featuring noted jazz performers John Peña, Peter Gordon and Liz Kinnon.

As an arranger and performer, Jerry's credits also include Los Angeles/Nashville session vocalist Cindy Fee, The Lettermen, The United States Air Force Worldwide Talent Contest, The Burbank Civic Light Opera, EMI International Latin recording artists Alvarro Torres and Franco.

Jerry continues to teach, perform and study the finer points of Film and Television music with noted film and television composer Jack Smalley.