GreatHearts®

10th Grade

Music – Choir I: Harmonic Extensions

April 20 – April 24

Time Allotment: 20 minutes per day

Student Name: _____

Teacher Name: _____

Packet Overview

Date	Objective(s)	Page Number
Monday, April 20	1. Review triad structure and quality. 2. Recall interval inversion and derive inversion of triads	3
Tuesday, April 21	1. Extend triadic structures and introduce seventh chord structures: Major, minor, Major/minor, diminished, and half-diminished	6
Wednesday, April 22	1. Apply inversion to seventh chord structures	10
Thursday, April 23	1. Demonstrate understanding of harmonic extensions by taking a written assessment.	13
Friday, April 24	HOLIDAY – No School	

Additional Notes: In order to complete the tasks within the following packet, it would be helpful for students to have a piece of manuscript paper to write out triads; I have included a blank sheet of manuscript paper to be printed off as needed, though in the event that this is not feasible students are free to use lined paper to hand draw a music staff.

I have also included answer keys to the exercises at the end of the packet. Parents, please facilitate the proper use of these answer documents (i.e. have students work through the exercises for each day before supplying the answers so that they can self-check for comprehension.)

As always, will be available to provide support via email, and I will be checking my inbox regularly. Please do not hesitate to reach out with questions or concerns during this time. For your reference my email is kevin.austin@greatheartsnorthernoaks.org

I will also be holding regular office hours from now on via Zoom according to the following schedule:

2nd Period	Monday, Wednesday; 11:00 – 11:50am
5th Period	Tuesday, Thursday; 11:00 – 11:50am

These Zoom meetings are optional and will allow for much needed conversations to discuss theory problems and ask questions.

To join the Zoom Meeting:

https://zoom.us/j/209631093?pwd=Z0MvSU9BNXl0QjRDc1U3U0o5VkJkUT09

Meeting ID: 209 631 093

Password: 004074

Academic Honesty

I certify that I completed this assignment independently in accordance with the GHNO Academy Honor Code.

Student signature:

_____

I certify that my student completed this assignment independently in accordance with the GHNO Academy Honor Code.

Parent signature:

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Monday, April 20

Music Theory Unit: Harmonic Extension
Lesson 1: Triad Structure and Quality Review/ Inversion of Triads

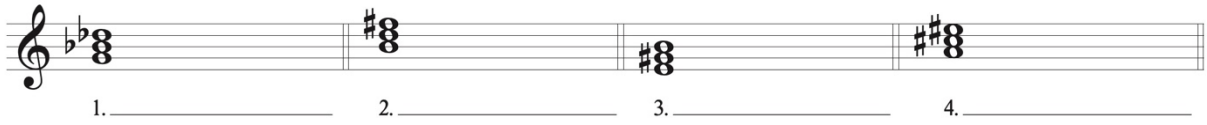
Unit Overview: Harmonic Extensions
As we move from an understanding of chords in in their simplest form, we will begin to examine vertical structures that depart from "close root position triads." In short, chords change their layout – what we call *voicing* – to add contrast and color to a musical passage. In this unit we will begin to examine these extended forms of chords and understand how to decode them in context.

Lesson 1 Socratic Guiding Questions: Keep these questions in mind as you study!
How might close root positions triads change? How could a triad look different on the staff and yet still contain the same notes?

Objective: Be able to do this by the end of this lesson.
1. Review triad structure and quality.
2. Recall interval inversion and derive inversion of triads.

Introduction to Lesson 1: Review of Triad Structure and Quality
Over the course of the last two weeks we examined chords in their simplest form, which we labeled as triads. We discovered that there are four main types or qualities: *Major, minor, Augmented,* and *diminished.* Additionally, we saw that each of these triads, when related to the circle of fifths, resulted in specific triangular configurations that extended our application of the interval calculator to include chords. Let recap our understanding before we move on.

For each of the following triads name the root note and quality using the interval calculator to assist you.



Beyond Root Position: Triads in Inversion
Up until this point we have been notating all chords with the root as the lowest note, which we have called a "close root position." This means that the notes are as close together as they can possibly be and that, again, the root is the lowest note called the *bass position*. However, in a musical context any part of the chord, either the root, the third, or fifth, might appear as the lowest note, or in the bass position as we say.

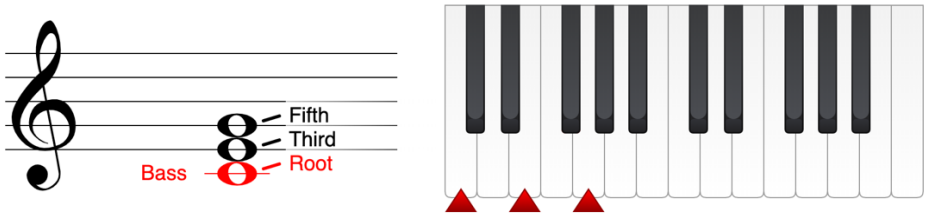
Though we may ask, if we can have a given triad that is not in the close root position, how then are we to make this change in appearance while still retaining the same root note and quality? To do this we need to recall an operation that we learned in our study of intervals: Inversion!

When we invert an interval, we take the lowest note and move it up an octave and this, at least as far as intervals are concerned, changes the interval class and quality. Though it is important to

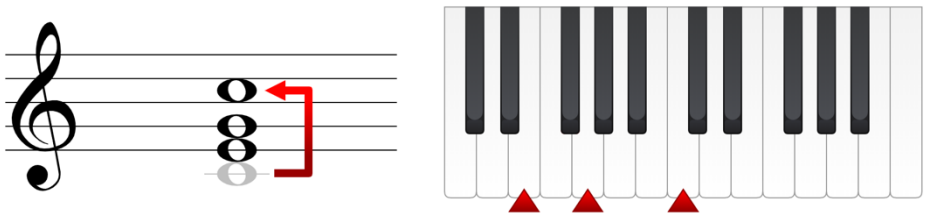
remember that displacing notes by an octave does not change the way we name them (C4 and C3 are in fact both "C" and will function as such).

So, when we invert an interval inside of a triad the note name will remain the same; and if the note name remains the same the triad will result in the same triangle on the circle of fifths; and even though it looks different it will still be the same triad – but now with a different inversion.

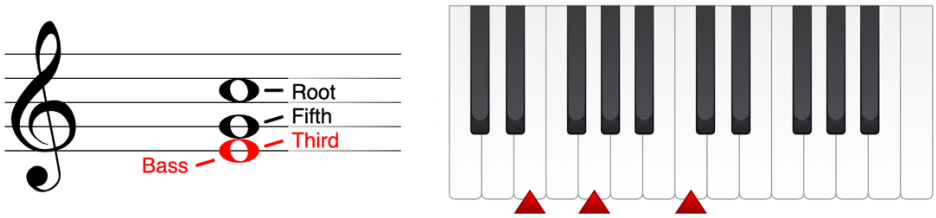
Let's take C Major for example…



We can see that this chord is in root position because the root of the chord is in the bass position. Now let's invert the chord; to do this we will take the root note and move it up one octave from C4 to C5…

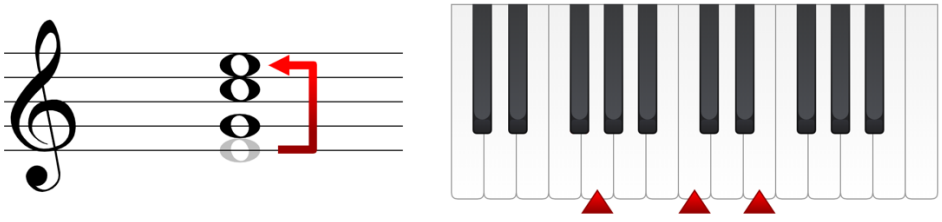


Notice how the notes in the chord are still C, E, and G but that now the third is in the bass position. This is what we call *first inversion*.

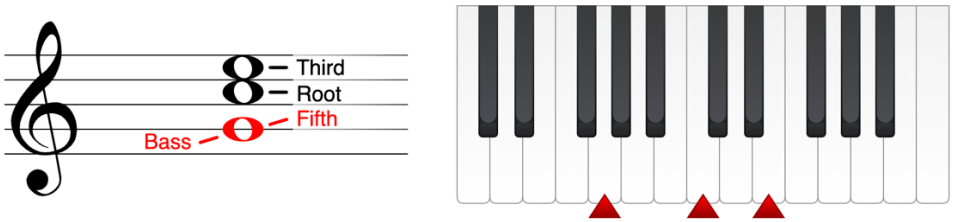


It is important that we familiarize ourselves with the way that this voicing looks, in that the third in in the bass position and the third and the fifth are still close together. Yet, now the root is at the top and it is slightly removed from the chord.

Since triads have three notes, there are three different configurations that are possible. So from, the first inversion triad we can invert again by taking the third and moving it up one octave…



Again, notice how the notes have not changed from C, E, and G; we have only changed their register and thereby the voicing of the chord. Here in this voicing, the fifth is in the bass position, and since we had to invert not once but twice to get here, we call this *second inversion*.



What happens when we invert the chord another time? Which note do you notice appears in the bass position?

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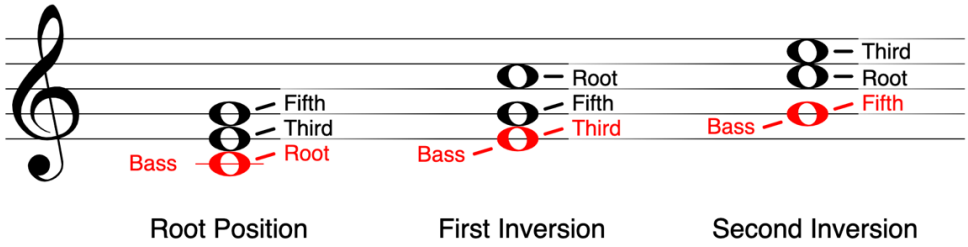
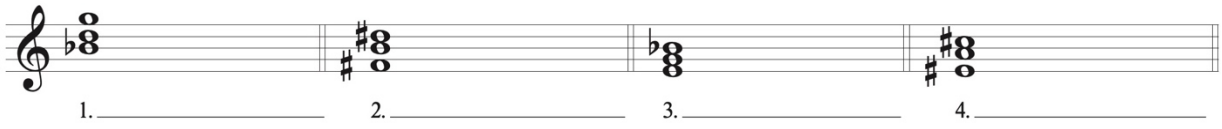
As we encounter triads in inversion it may be helpful to reference the following chart.



Closing: Check your understanding of the lesson by identifying the root, quality, and inversion of the following triads. (e.g. F# Aug, first inversion)



Tuesday, April 21

Music Theory Unit: Harmonic Extensions
Lesson 2: Extending Triadic Structures: Seventh Chords

Lesson 2 Socratic Guiding Questions: Keep these questions in mind as you study!
How else might we make chords look different apart from inverting them? What would happen if we continued to combine intervals to create larger chords?

Objective: Be able to do this by the end of this lesson.

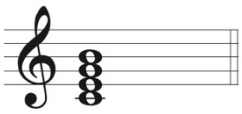
1. Extend triadic structures and introduce seventh chord structures: Major, minor, Major/minor

Introduction to Lesson 2: Extending the Triad

We have seen that when we build chords off of a given root note that we can understand them in terms of stacked thirds. In the case of the triad we stack two consecutive thirds to build the chord, and since we have two types of thirds (Major and minor) we have four different ways we can stack these thirds together, each resulting in a different quality:

- Major Triad = M3 + m3
- Minor Triad = m3 + M3
- Diminished Triad = m3 + m3
- Augmented Triad = M3 + M3

Remember that when we stack two thirds the outside interval (from the root note to the top note) results in a 5^{th}. What would happen then if we were to continue the process? What would the outside interval be if we stacked three thirds?

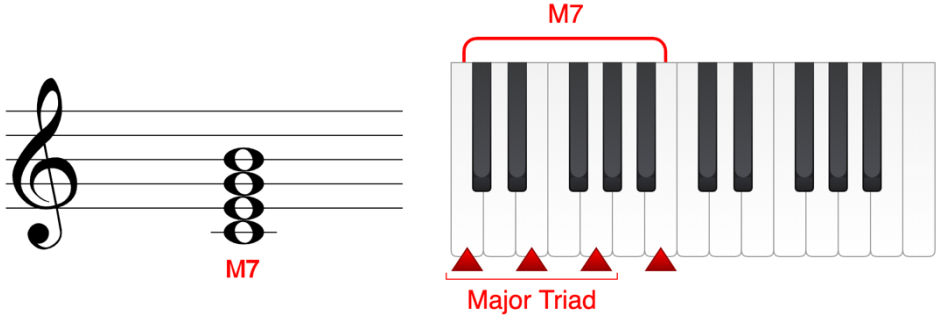


If we continue the process of stacking thirds in close root position, we see the structure to the left emerge. Notice that the bottom three notes are still that familiar root position triad but now we have a fourth note; it is no longer a triad! So, we need to identify this new type of chord that has four distinct pitches in it. To do that we will look to the outside interval because that is the newest interval. When we observe the interval class from the lowest note in the chord to the highest note in the chord, we see that it is a 7^{th}. Accordingly, we can think of the chord as a triad with an added 7^{th} above the root. We call these types of chords, *seventh chords*.

When we combine an additional third to the structure, the potential number of combinations of major and minor thirds increases quite a bit. Fortunately, some of the possible combinations result in non-functional chords (e.g. chords that sound like other chords but are spelled in a way that is difficult to read, or chords that sound rather dissonant and that composers largely did not use during the Baroque, Classical, and Romantic eras). For our purposes we will restrict our discussion to only five types.

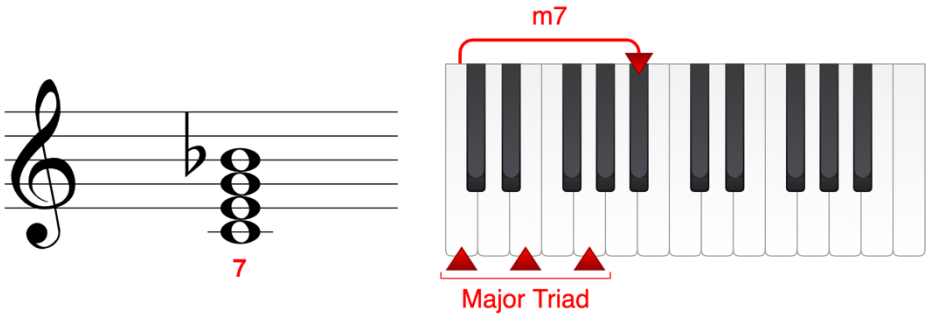
Look again at the seventh chord above that is built on the root note C. we know that the bottom three notes form a C Major triad. What is the quality of the third that has been added (G-B)?

In this instance we have a Major triad with an additional Major third on top; thought of another way, we could say that we've added a Major seventh above the root to the Major triad.



When we have a Major triad + a Major 7th we call this a *Major seventh chord* because both the triad and the 7th have a Major quality.

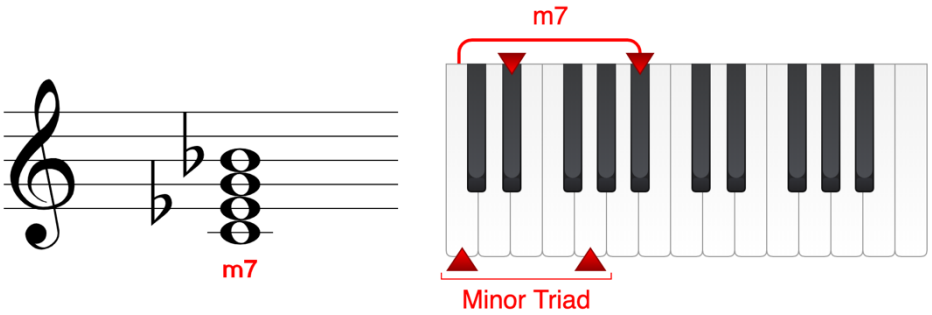
If we instead added a minor third on top of the major triad, we get something that looks a bit different…



We still see the C Major triad on the bottom but now we've added a minor third above resulting in an outside interval of a minor seventh.

When we have a Major triad + a minor 7th we call this a *Dominant seventh chord.* Alternately, this is sometimes called a Major/minor seventh chord.

Finally, if we change the quality of the triad from major to minor and add an additional minor triad the following emerges…



When we have a minor triad + a minor 7th we call this a *minor seventh chord* because both the triad and the 7th have a minor quality.

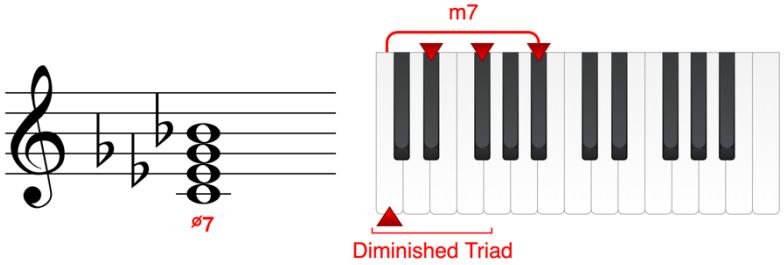
These types of seventh chords are by far the most common and, as we will see in later units, these seventh chords are themselves used sparingly to add color or to strengthen harmonic phrases. There are however two more kinds of seventh chords that do arise in tonal harmony and we will encounter them in context from time to time.

Before we examine their structure, consider the following: what kind of triad (quality) can we extend to make different seventh chords? What happens when we extend an Augmented triad? What about a diminished triad?

Other Qualities of Seventh Chords
Sometimes composers will use different, and less common, types of seventh chords to create rather interesting colors and progressions. Two of these types of seventh chords are built off of the diminished triad.

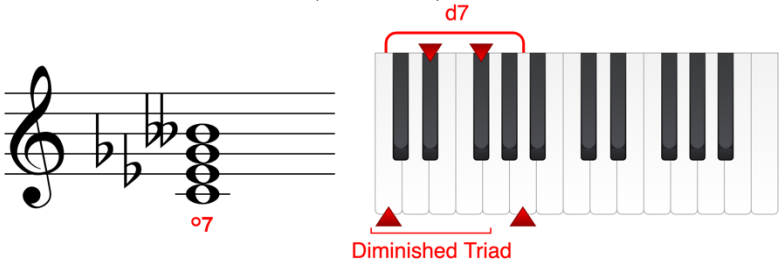
Remember that a diminished triad is formed by stacking two consecutive minor thirds which result in an outside interval of a diminished fifth (e.g. C-Eb-Gb). Since we know that seventh chords are a result of a triad + another 3rd on top, and we have two qualities of thirds – major and minor, we can begin to think about the potential combinations which result in seventh chord structures.

Let's start with a diminished triad (C-Eb-Gb) and add a major third above (Bb)…



We can see that when we add a Major 3rd above the chord the specific distance of the outside interval becomes 10 half-steps, which we call a minor 7th. This results in the seventh chord: C-Eb-Gb-Bb, which we call a *half-diminished seventh chord*. Notice that the abbreviation for this chord uses the symbol for a diminished triad with an added slash through it; we will come to understand why we call this half-diminished in a moment but take note that the combination here is between a diminished triad and a minor seventh.

Now, let's take the same diminished triad (C-Eb-Gb) and this time add a minor 3rd above…



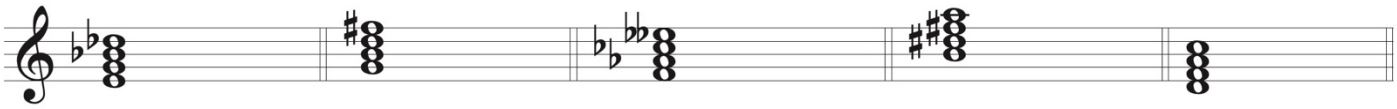
When we add a note that is three half-steps (m3) above Gb we end up on the note "A" on the piano. But Gb-A spells a 2nd and we need it to read as a third (so that the outside interval is a seventh and not a sixth) so we will re-spell "A" enharmonically, as "B double flat" (Bbb). Notice too that when we do this our 7th is now 9 half-steps, which is one half-step smaller than a minor 7th. When this occurs, we have a 7th that is a half-step smaller than the smallest diatonic possibility (minor) so we will call this a *diminished 7th*.

We then can see that the overall chord is a diminished triad + a diminished 7th, which we will call a *fully-diminished seventh chord*.

Again, these two seventh chords are less common than the previous three we encountered though we do need to be aware of their existence, because they will show up in later analysis.When we label seventh chords, we still identify them based on their root note and their quality. It will be helpful then to reference the following chart when analyzing seventh chords on the staff:

Seventh Chord	= Triad	+ Seventh Interval	Abbreviation
Dominant 7th	Major Triad	Minor	7
Major 7th	Major Triad	Major	M7
Minor 7th	Minor Triad	Minor	m7
Half-diminished 7th	Diminished Triad	Minor	ø7
Diminished 7th	Diminished Triad	Diminished	°7

Closing: Check your understanding of the lesson by identifying the following seventh chords. Remember to analyze the triad first and then calculate the 7th. Use your interval calculator and the chart above to help you.



Wednesday, April 22

Music Theory Unit: Harmonic Extensions
Lesson 3: Seventh Chords in Inversion

Lesson 3 Socratic Guiding Questions: Keep these questions in mind as you study!
When we invert triads, does the root note or quality change? What might we then predict about inverting seventh chords?

Objective: Be able to do this by the end of this lesson.

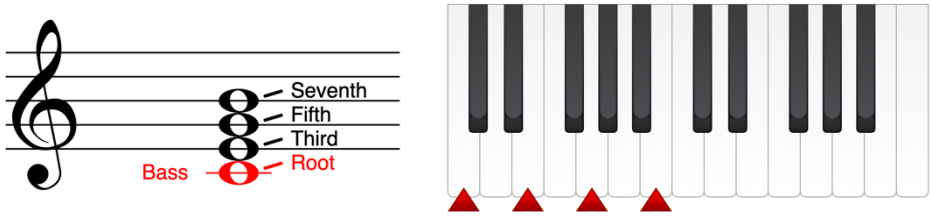
1. Apply inversion to seventh chord structures

Introduction to Lesson 3: Inverting a Seventh Chord

As we have observed with triads, sometimes they appear in configurations that look different but that spell the same; in other words, we saw that we can have different parts of the chord in the bass position. When this happens, we say that the chord is in *inversion*. Remember too, that the quality of the chord is not affected by inversion, because the notes remain the same; all that changes is their position and register.

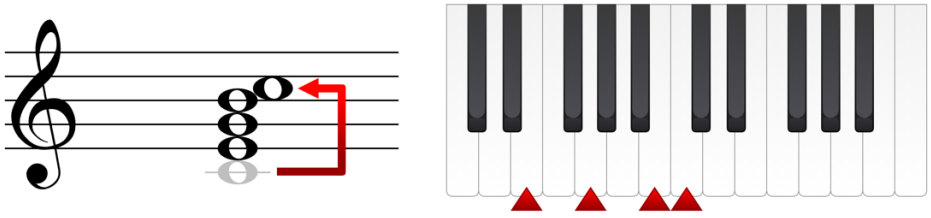
Based on this understanding, we can also apply the principle of inversion to seventh chords. Again, just as with triads, inversion will only affect the position of the notes and not the quality of the chord.

Up until this point we have been dealing with seventh chord in root position; that is, where the thirds stack neatly on top of one another.

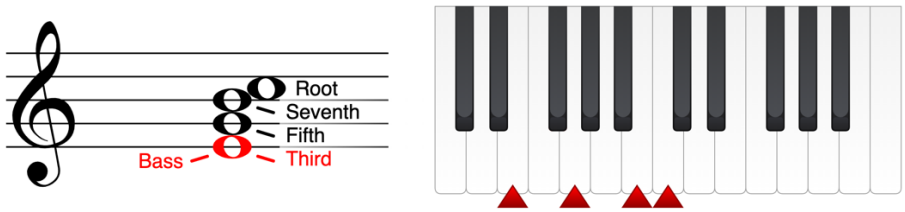


Here again, in this C Maj7 chord, we can see that root position means that the root of the chord ("C") is in the *bass position*.

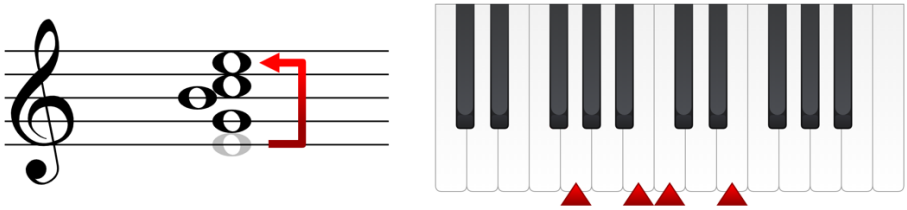
When we invert the chord, we are going to move the lowest note up one octave…



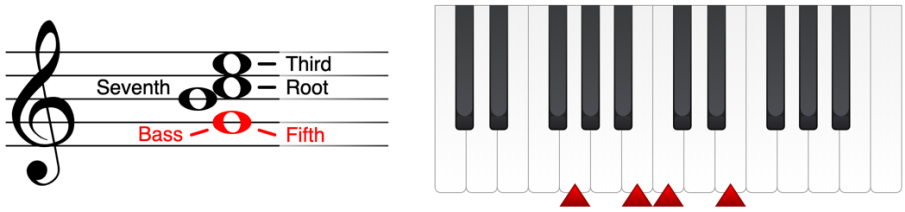
Notice now the root of the chord has moved to the top, and we now have the third of the chord in the bass position. Just like when we see the third in the bass position of a triad, we will call this *first inversion*.



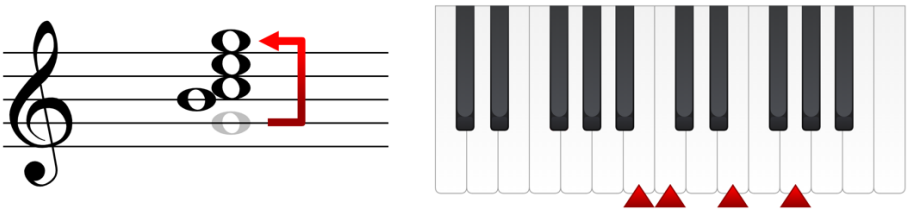
Inverting the chord again means that we will move the bass note "E" up one octave…



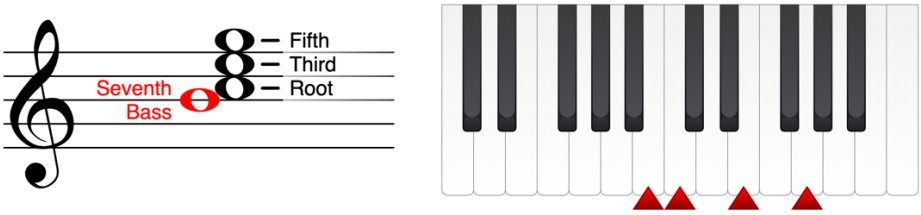
Notice that now the third is at the top of the chord and that the fifth is in the bass position. Again, as with triads, when the fifth is in the bass position we call this *second inversion*.



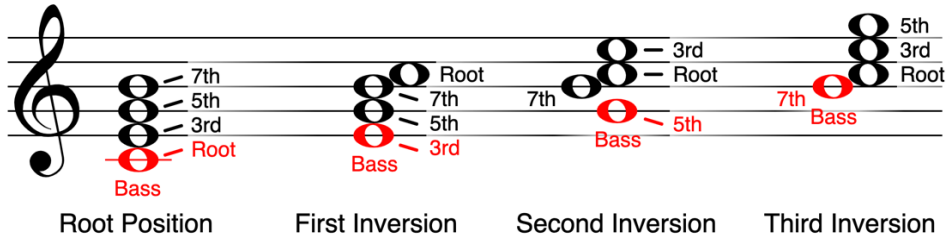
However, unlike triads, where if we inverted again from second inversion, we would return to root position, seventh chords have an additional note; and so we have an additional inversion…



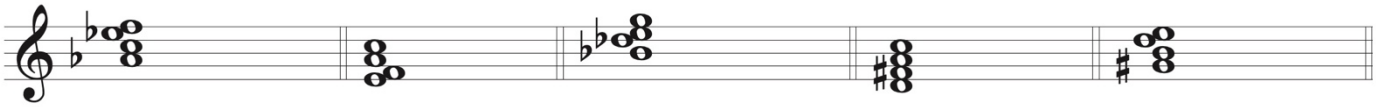
When we do this, the fifth of the chord moves to the top and now we have the seventh in the bass position. This accordingly is an inversion that is only available for seventh chords, and we call it *third inversion*.



When identifying seventh chords in inversion it may be helpful to reference the following chart. Note: it may also be helpful to see that when a seventh chord is in inversion there appears in the chord an interval of a 2nd, and that the top note in the 2nd is always the root of the chord.



Closing: Check your understanding of the lesson by identifying the given seventh chords with a root note, quality, and inversion.



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

Thursday, April 23

Music Theory Unit: Harmonic Extensions
Quiz: Chord Inversion and Seventh Chords

Objective: Be able to do this by the end of this lesson.

1. Demonstrate understanding of harmonic extensions by taking a written assessment.

Quiz: Chord Inversion and Seventh Chords

To assess your understanding of this week's lessons you will complete the following quiz on Chord Inversion and Seventh Chords. Please allot yourself 20 minutes to take the quiz. You may use the theory reference sheet (which includes a piano keyboard and the circle of fifths), as well as the interval calculator during the quiz for your reference. Additionally, be mindful of the key signatures and how they affect the notes within the chord.

Name_____ Date_____

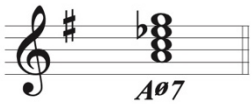
Quiz: Chord Inversion and Seventh Chords - 𝄞 𝄢

Indicate the root, chord quality, and inversion of each triad or seventh chord using one of the following abbreviations:

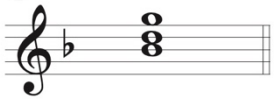
M (major) **m** (minor)

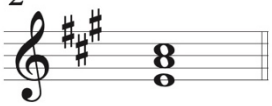
o (diminished) + (augmented)

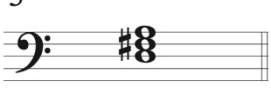
ø (half-diminished)

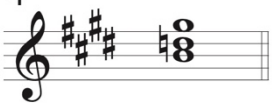
Example 

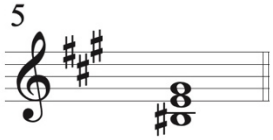
Remeber to include a "7" to indicate seventh chords.

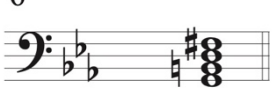
1  ___

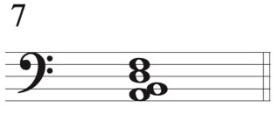
2  ___

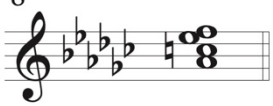
3  ___

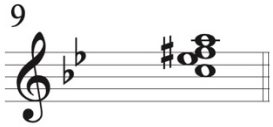
4  ___

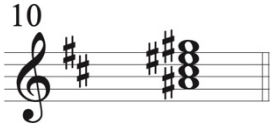
5  ___

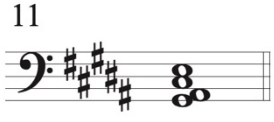
6  ___

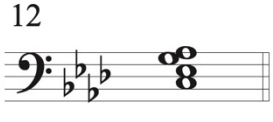
7  ___

8  ___

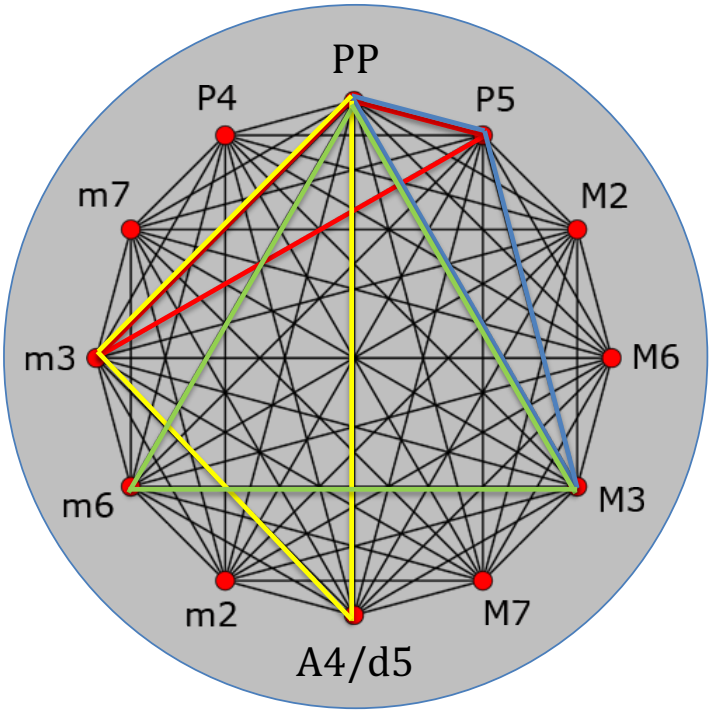
9  ___

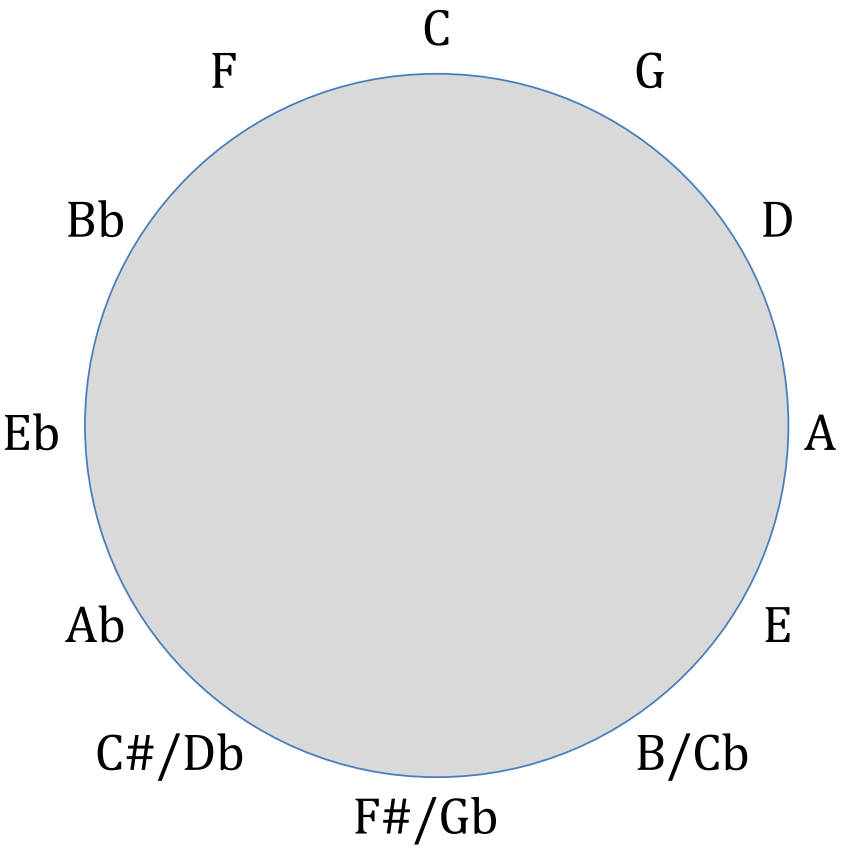
10  ___

11  ___

12  ___

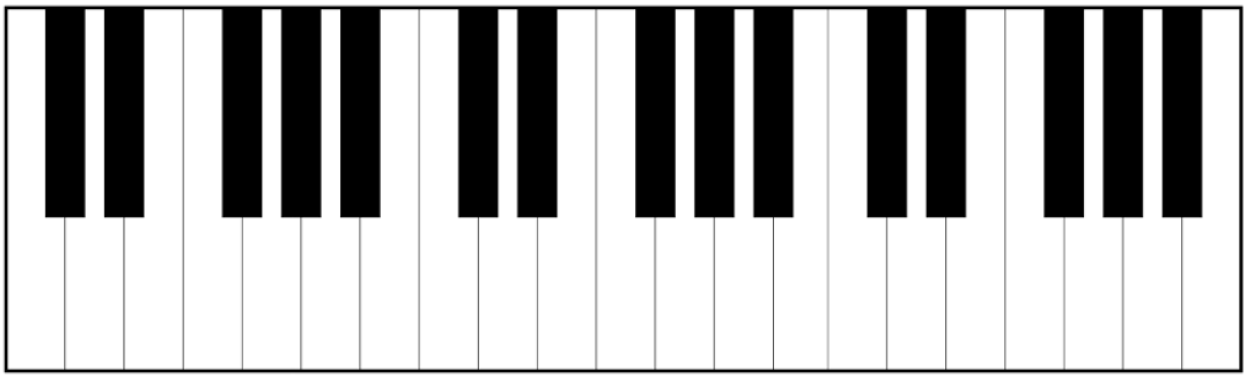
- Cut along the circumference of the circle to the right, and along the dotted line below.
- Lay the interval structure on top of the circle of 5ths at the bottom of the page to form the interval calculator.
- When calculating intervals make sure to align prime (PP) with the lower note in the interval.

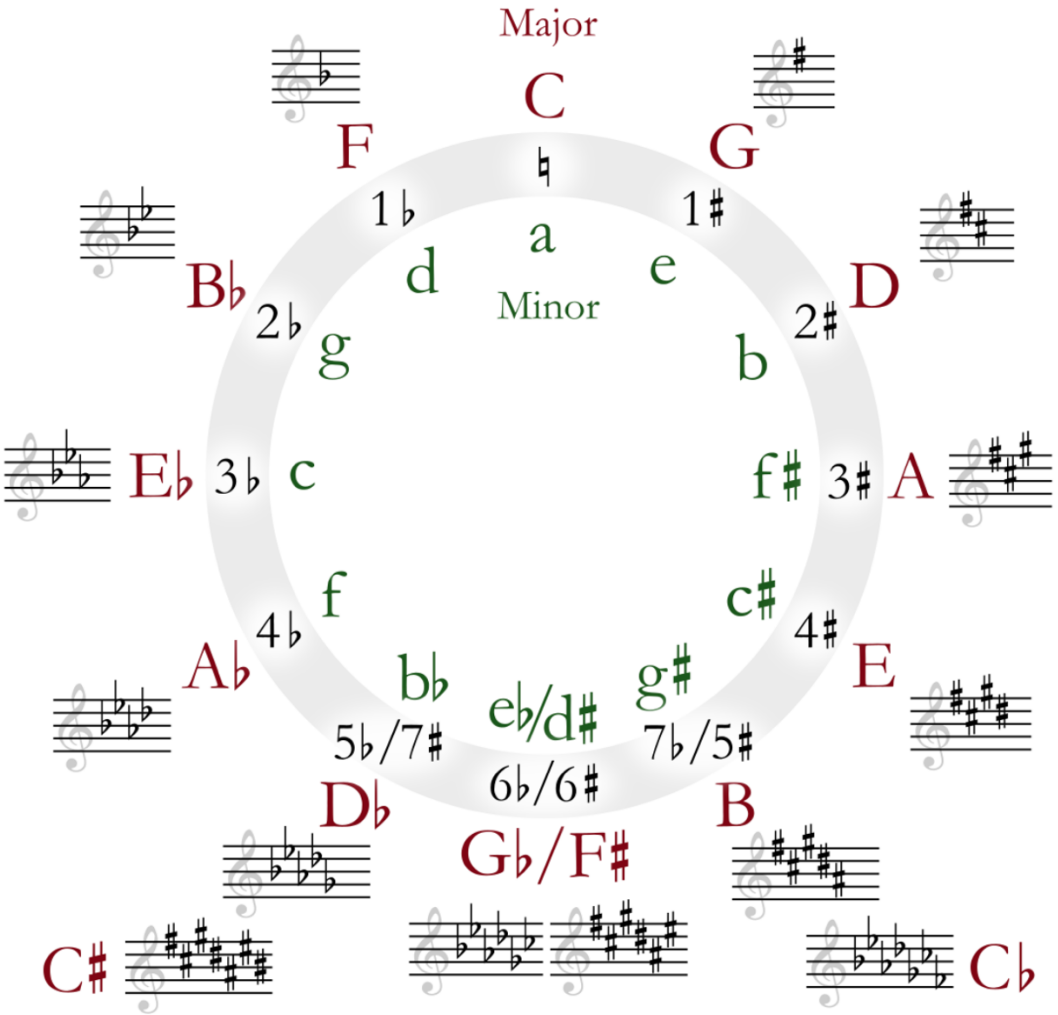




Music Theory Reference Sheet

This sheet may be used as a study aid during the week's lessons

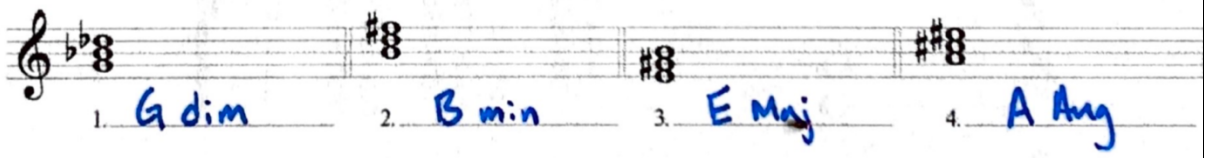




Answer Key

Monday, April 20

For each of the following triads name the root note and quality using the interval calculator to assist you.

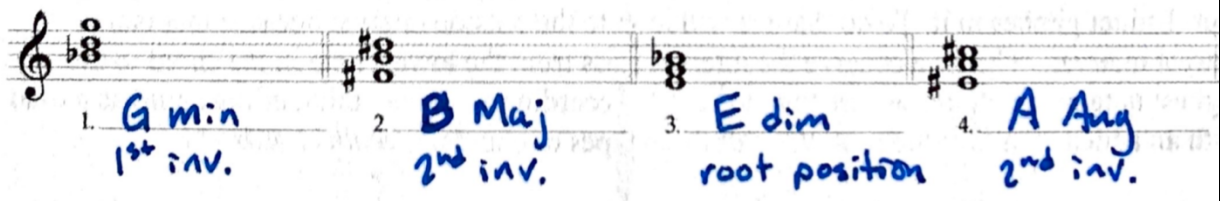


1. G dim 2. B min 3. E Maj 4. A Aug

What happens when we invert the chord another time? Which note do you notice appears in the bass position?

When we invert further the chord goes back to root position with the root note in the bass.

Closing: Check your understanding of the lesson by identifying the root, quality, and inversion of the following triads. (e.g. F# Aug, first inversion)



1. G min 1st inv. 2. B Maj 2nd inv. 3. E dim root position 4. A Aug 2nd inv.

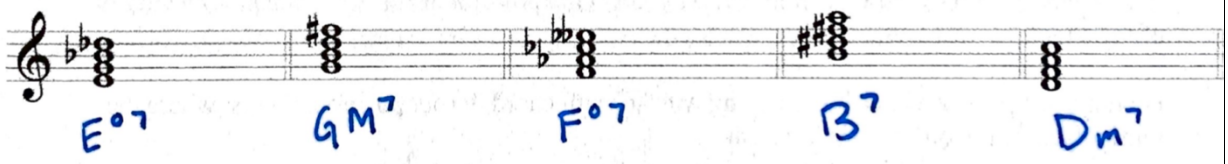
Tuesday, April 21

Remember that when we stack two thirds the outside interval (from the root note to the top note) results in a 5th. What would happen then if we were to continue the process? What would the outside interval be if we stacked three thirds?

the outside interval would spell a 7th

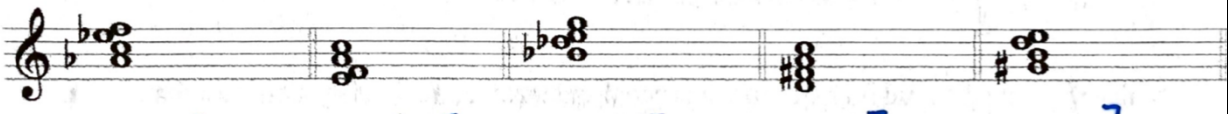
1. F^7 2. DM^7 3. Gm^7 4. A^7

Closing: Check your understanding of the lesson by identifying the following seventh chords. Remember to analyze the triad first and then calculate the 7th. Use your interval calculator and the chart above to help you.



Wednesday, April 22

Closing: Check your understanding of the lesson by identifying the given seventh chords with a root note, quality, and inversion.



1. Fm7 — 1st inv.
2. FM7 — 3rd inv.
3. E°7 — 2nd inv.
4. D7 — root position
5. E7 — 1st inv.