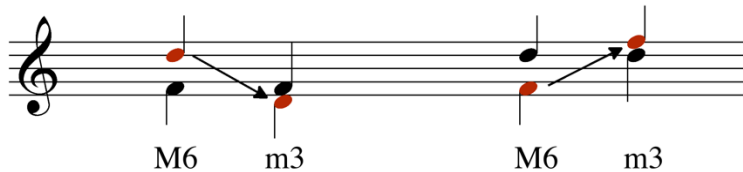


Intervals (handout no. 2 of 3)

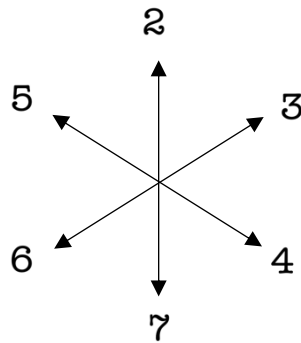
Interval inversion

The **inversion** of an interval is the interval that completes an octave with the original interval.

Another way of saying this: an interval is inverted when the two notes are flipped, the lower moving up an octave, or the higher moving down an octave.



An interval and its inversion always sum to an octave. Because of musical math's funkiness (counting both ends of an interval) this means that an interval's and its inversion's number always sum to 9: seconds invert to sevenths, thirds to sixths, and fourths to fifths (and vice-versa).



Because an interval and its inversion together always add to an octave, the larger an interval, the smaller its inversion. Therefore the following apply to interval **qualities**:

major inverts to **minor**

augmented inverts to **diminished**

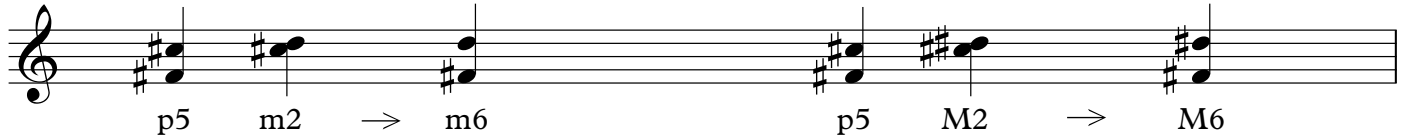
perfect inverts to **perfect**

When dealing with larger intervals, counting steps or half steps to determine interval quality becomes even more laborious and error-prone. Don't do it! Instead, use the methods on the other side of this handout.

Reckoning sixths and sevenths

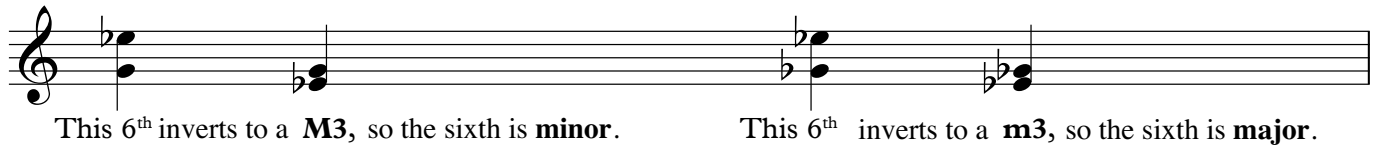
Sixths

Method 1: Build on perfect 5th. A **minor sixth** is a p5 plus a **minor 2nd**. A **major sixth** is a p5 plus a **major 2nd**.



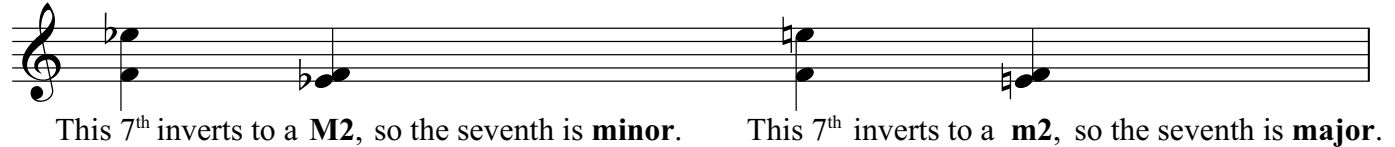
Method 2: Invert thirds. Having drilled thirds using the methods recommended earlier to attain fluency, you can use the general principle of **inversion of qualities** to quickly reckon the quality of sixths.

perfect inverts to **perfect**
major inverts to **minor**
augmented inverts to **diminished**

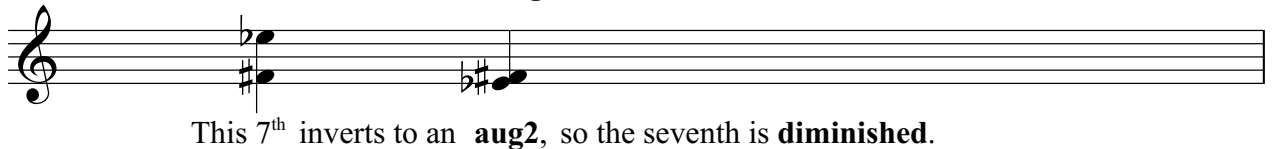


Sevenths

Take advantage of the same inversion principle using seconds:



You also need to be comfortable with **diminished** sevenths, which (unlike the diminished form of most intervals) are relatively common. Diminished sevenths invert to **augmented** seconds.



Seconds: lower to the left

On the topic of seconds, note how harmonic (simultaneous) seconds are notated. To avoid overlap and keep the notation clear, one of the two noteheads must be shifted horizontally. The **lower** of the two notes always goes to the **left**, regardless of whether the stem is up or down.



On stem-up seconds, it is the upper note that is on the “wrong” side of the stem, while on stem-down seconds it is the lower note that is on the “wrong” side.

Accidentals likewise shift horizontally to avoid overlapping when they are close vertically. This happens with thirds, fourths, fifths, and possibly even sixths, not just with seconds. (See, for example, the F#-C# fifth at the top of this page.) The general principle is that **no notation symbol collides with any other symbol**, except for staff lines. (There is no rule as to which of two or more accidentals is written first: you can do whatever you think looks best.)