

# Putting a pitch-class set into normal form

a pitch-class set with pitches and pitch-classes as they might occur in a piece

A musical staff in treble clef showing five notes: G4 (quarter note), A4 (quarter note), B4 (quarter note), C5 (quarter note), and D5 (quarter note). The notes are scattered across the staff. A slur above the staff groups all five notes together, indicating they belong to the same pitch-class set.

rotation 1: start on any note and arrange the others ascending from that note within an octave

A musical staff in treble clef showing five notes arranged in ascending order starting from G4: G4, A4, B4, C5, and D5. A slur above the staff groups all five notes together.

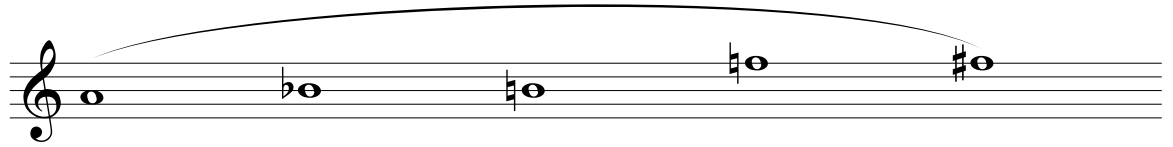
rotation 2: take rotation 1 and begin with the second note, moving the first one to the end

A musical staff in treble clef showing five notes arranged in ascending order starting from A4: A4, B4, C5, D5, and G4. A slur above the staff groups all five notes together.

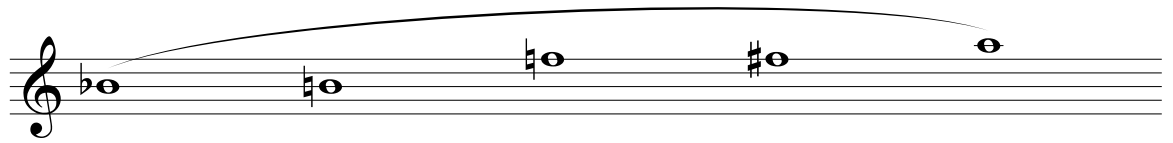
rotation 3: do the same again; begin with the second note of rotation 2 and move the first to the last

A musical staff in treble clef showing five notes arranged in ascending order starting from B4: B4, C5, D5, G4, and A4. A slur above the staff groups all five notes together.

rotation 4:  
keep doing the same  
thing

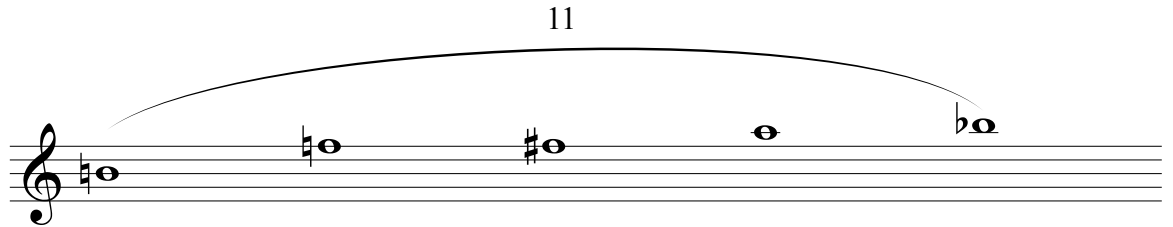


rotation 5: this  
will be the last  
rotation. NB:  
the number of  
rotations = the  
number of pitch-classes  
in a set.

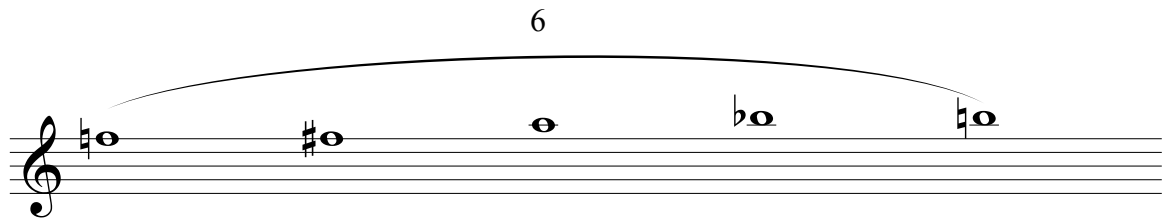


next count how many half steps (unordered pitch intervals) span the  
outer intervals:

rotation 1



rotation 2



rotation 3

11

A treble clef staff with five notes: F#4, G4, A4b, B4, C5. A slur above the notes is labeled '11'.

rotation 4

9

A treble clef staff with five notes: G4, A4b, B4, C5, D5. A slur above the notes is labeled '9'.

rotation 5

11

A treble clef staff with five notes: G4b, A4, B4, C5, D5. A slur above the notes is labeled '11'.

choose the rotation with the smallest unordered pitch interval from the first to the last note. It's rotation 2. So the normal form of the pitch-class set is [569te]