

Collected Homework #4 Answers

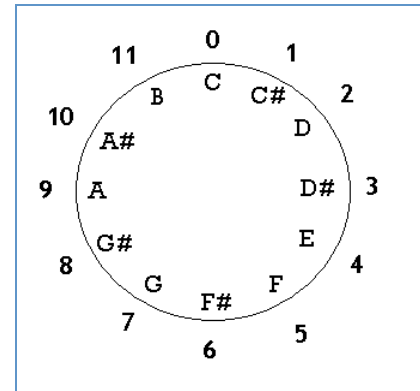
For this assignment, our “theme” will be the following:



Find each of the following variations on this theme.

$$T_5, T_5R, I, T_7I, \text{ and } I_G$$

Comments: Recall that we can use the “musical clock” diagram as a visual aid for finding transpositions and (especially) inversions. Under the standard inversion, each note is “reflected” across the C-F# axis; or, using number codes, each note is replaced by its opposite (mod 12).



For the inversion centered at G, each note is “reflected” across the G-C# axis; an easier way to see this may be to redraw the clock with G, rather than C, at the top (see below).

Homework Answers (notes only):

Melody: G D Bb A G Bb A G F# A D

T_5 : C G Eb D C Eb D C B D G

T_5R : G D B C D Eb C D Eb G C

I : F Bb D D# F D D# F F# D# A#

(T_7 : D A F E D F E D C# E A – use to find T_7I)

T_7I : A# D# G G# A# G G# A# B G# D#

(Comment: We could also have found T_7I by using the $IT_n = T_{-n}I$ rule, which tells us that T_7I is equivalent to IT_5 . That would have allowed us to just raise the result for I by five semitones, rather than going to the extra work of finding and inverting T_7 . Check for yourself – it works!)

I_G : G C E F G E F G G# F C

Notice that the above answer for I_G preserves, but reverses, all intervals from the original melody in a way that keeps the first note, G, fixed.

Also notice that the variation we get from I_G is two semitones higher than the variation we get from I – this shows us that I_G is the same as IT_2 .