

Geometry HW 8/25, due 8/26

Compositions of Transformations

* You will need graph paper! If you don't have any, do your best to create a coordinate system on lined or blank paper

**Notice that no figures are given to you, so it will be helpful for you to start these problems by drawing the information you're given on a coordinate system.

2. Given $\triangle ABC$ with vertices: $A(-6, -1)$, $B(-4, -3)$, $C(-3, 0)$.
- Reflect $\triangle ABC$ across the x -axis to create $\triangle A'B'C'$.
 - What are the coordinates of the vertices of $\triangle A'B'C'$?
 - What is the transformation rule, $(x, y) \rightarrow (?, ?)$, that transforms $\triangle ABC$ to $\triangle A'B'C'$?
 - Reflect $\triangle A'B'C'$ across the line $x = -2$ to create the image $\triangle A''B''C''$.
 - What are the coordinates of the vertices of $\triangle A''B''C''$?
 - What is the single transformation rule that takes $\triangle ABC$ onto $\triangle A''B''C''$? (Remember you are relating the original coordinates to the final coordinates)

Hint: For part f) you should try a trick similar to the second example we did in class today. Switch the signs of all the x -coordinates and then see if you can relate them to the final x -coordinates

5. Given $\triangle ABC$ with vertices: $A(-8, 2)$, $B(-4, -2)$, $C(-3, 3)$.
- Reflect $\triangle ABC$ across the y -axis to create $\triangle A'B'C'$.
 - What are the coordinates of the vertices of $\triangle A'B'C'$?
 - What is the transformation rule, $(x, y) \rightarrow (?, ?)$, that transforms $\triangle ABC$ to $\triangle A'B'C'$?
 - Rotate $\triangle A'B'C'$ 90° clockwise about the origin to create $\triangle A''B''C''$.
 - What are the coordinates of the vertices of $\triangle A''B''C''$?
 - What is the transformation rule, $(x, y) \rightarrow (?, ?)$, that transforms $\triangle A'B'C'$ to $\triangle A''B''C''$?
 - What is the single transformation rule that takes $\triangle ABC$ onto $\triangle A''B''C''$?