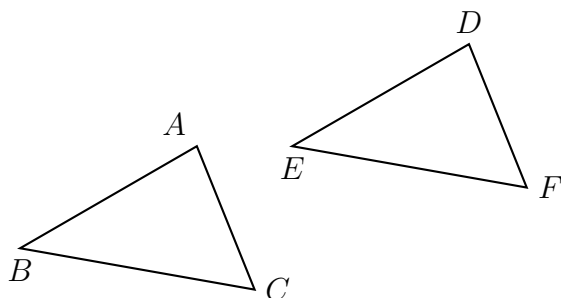


Name: _____

8.3 Homework: Mixed transformations

CCSS.HSG.CO.A.5

1. A translation maps triangle ABC onto triangle DEF .



Fill in the blank with the corresponding object.

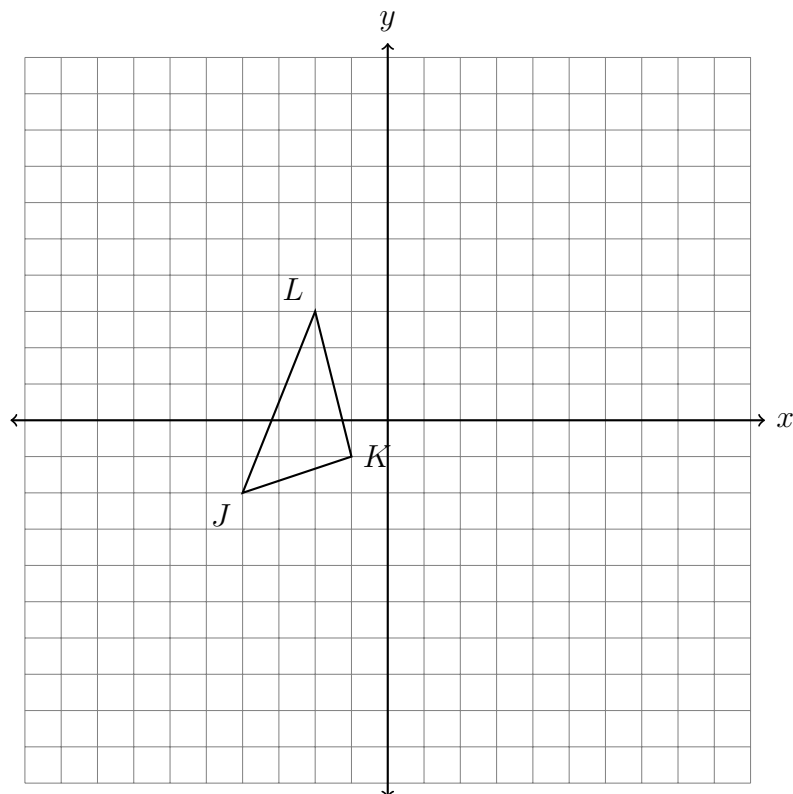
(a) $A \rightarrow$ _____

(b) $\angle ABC \cong$ _____

(c) _____ $\cong \overline{EF}$

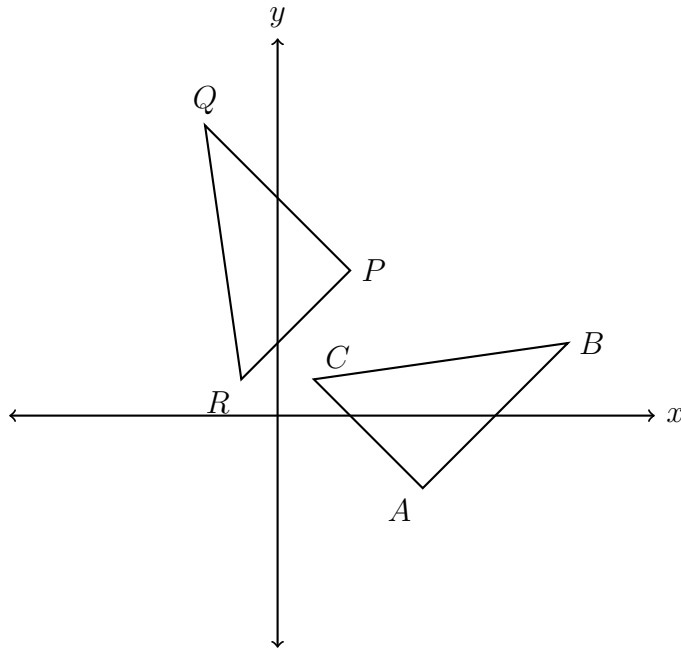
2. The vertices of $\triangle JKL$ have the coordinates $J(-4, -2)$, $K(-1, -1)$, and $L(-2, 3)$, as shown below.

Apply a translation of $(x, y) \rightarrow (x + 7, y + 4)$ to $\triangle JKL$ and then reflect the image across the x -axis. Draw both images $\triangle J'K'L'$ and $\triangle J''K''L''$ on the set of axes below, labeling the vertices.

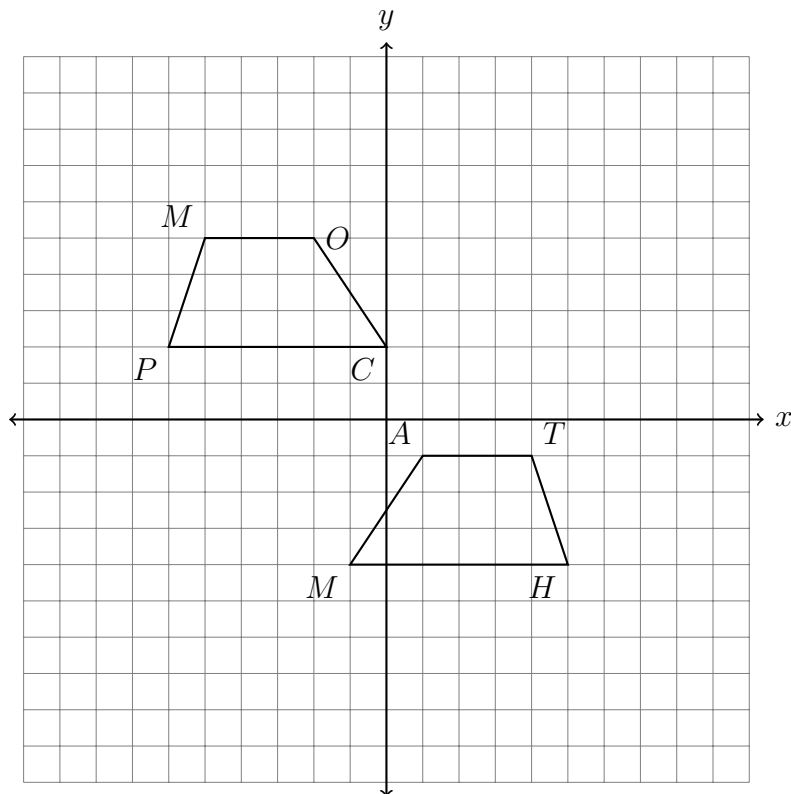


3. A rotation of 90° is applied to $\triangle ABC$, mapping it onto $\triangle PQR$, as shown.

Which triangle has the larger area, or are they equal? Justify your answer.

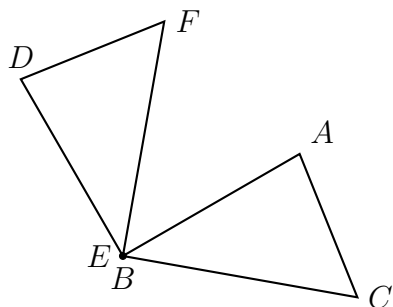


4. The trapezoid $MATH$, shown below, undergoes two rigid motions carrying it onto trapezoid $COMP$. State the two isometric transformations. (there is more than one correct answer)



Name: _____

5. A rotation of 90° around the vertex B of triangle ABC carries it onto triangle DEF .



(b) $\angle ABC \cong$ _____

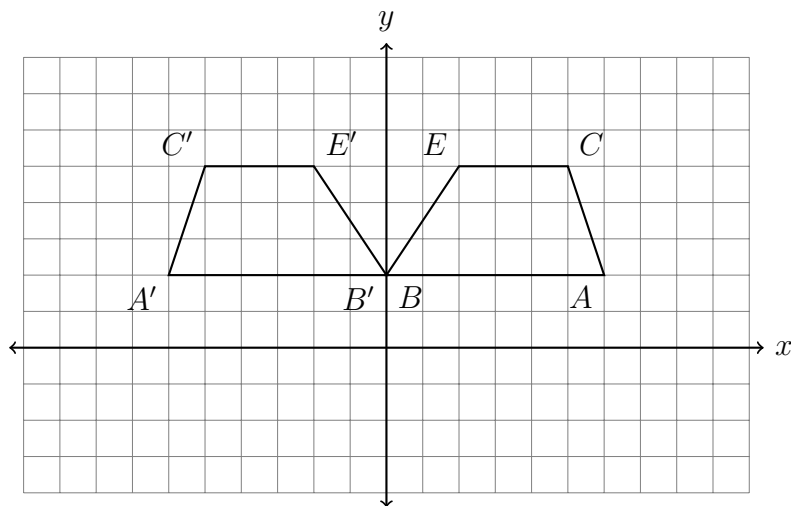
(c) _____ $\cong \overline{EF}$

- (d) Justify that the areas of $\triangle ABC$ and $\triangle DEF$ are equal. Use the words, “rotation,” “rigid motion,” and “preserves distance.”

Fill in the blank with the corresponding object.

(a) $A \rightarrow$ _____

6. State the transformation that carries the trapezoid $BECA$, onto $B'E'C'A'$, as shown below.

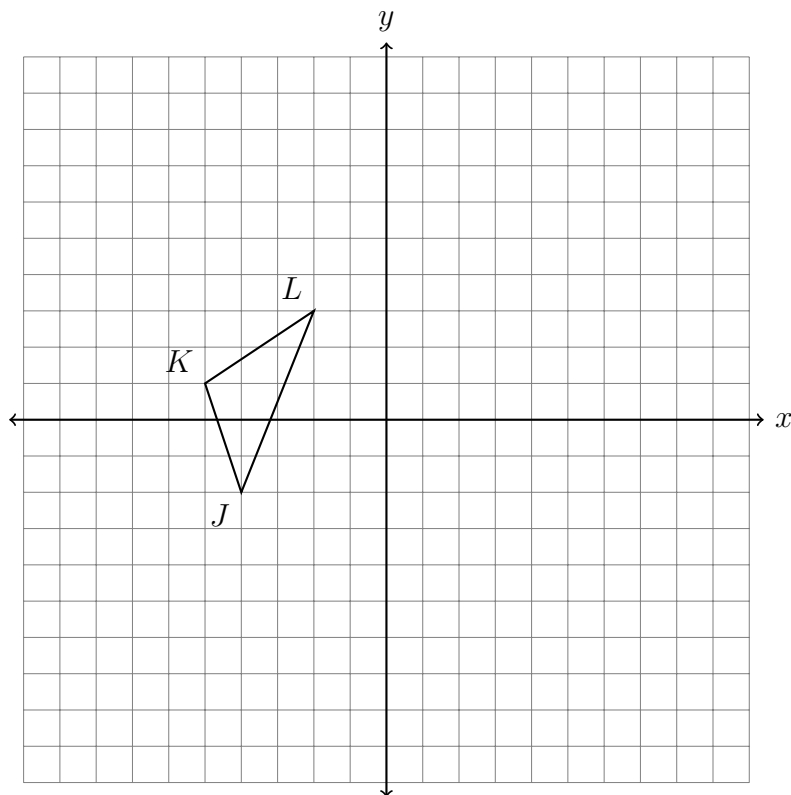


Note: For translations, you must state the x and y quantities; for reflections, the line of reflection; for rotations, the center of rotation and quantity in degrees.

7. The vertices of $\triangle JKL$ have the coordinates $J(-4, -2)$, $K(-5, 1)$, and $L(-2, 3)$, as shown below.

Apply a translation of $(x, y) \rightarrow (x + 6, y - 7)$ to $\triangle JKL$ and then reflect the image

across the y -axis. Draw both images $\triangle J'K'L'$ and $\triangle J''K''L''$ on the set of axes below, labeling the vertices.



8. Find the length of \overline{AB} , where $A(5, -6)$ and $B(13, 0)$.

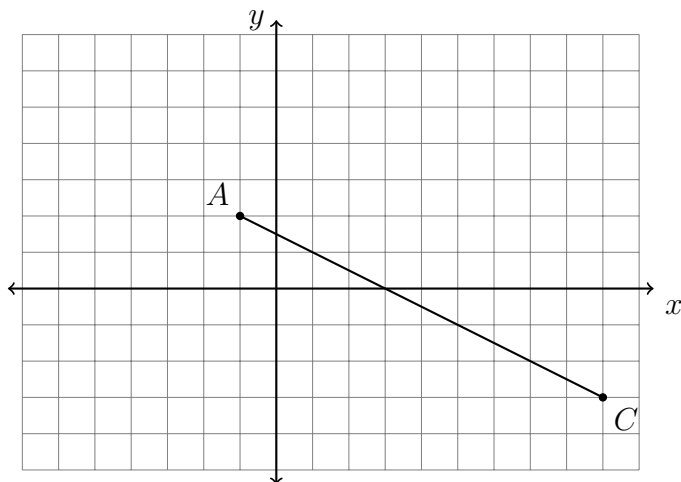
9. Determine relationship of each equation to the line $y = \frac{4}{3}x - 4$, circling either parallel, perpendicular, or neither.

(a) $4x - 3y = 6$ Parallel Perpendicular Neither

(b) $3x + 4y = 5$ Parallel Perpendicular Neither

Name:

10. In the diagram below, \overleftrightarrow{AC} has endpoints with coordinates $A(-1, 2)$ and $C(9, -3)$.



If B is a point on \overline{AC} and $AB:BC = 2:3$, what are the coordinates of B ?