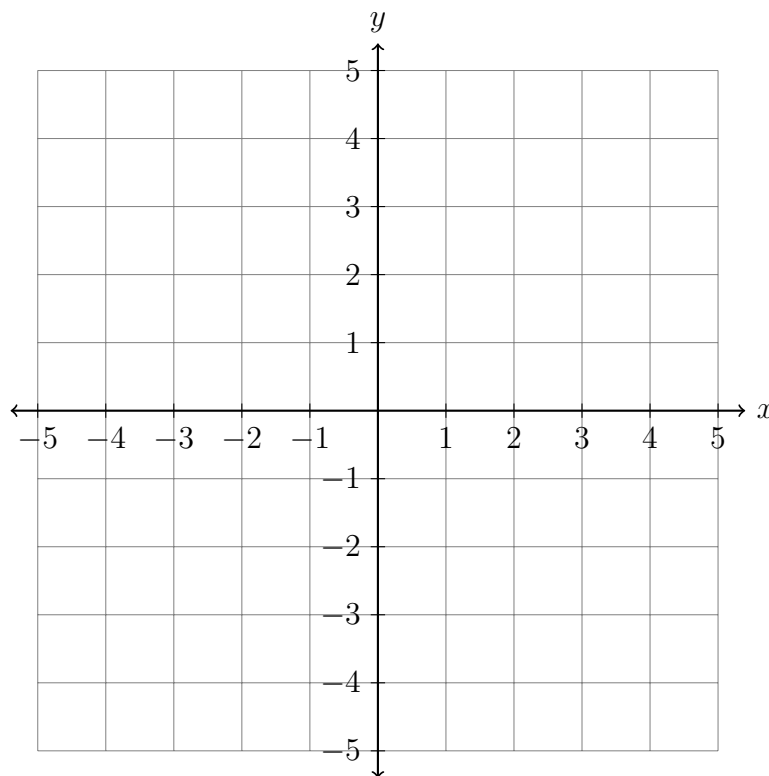


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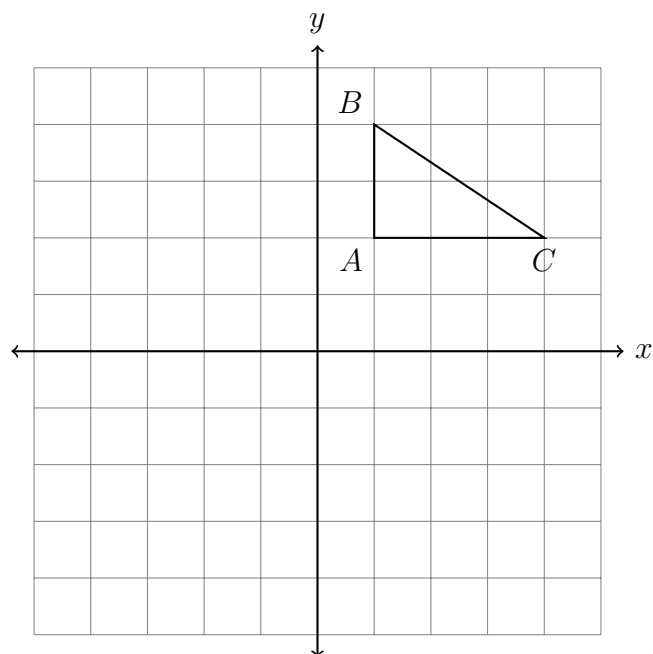
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**5.5 Classwork: Mixed congruence transformations****CCSS.HSN.RN.A.2**

1. Plot the parallelogram  $BECA$  with  $B(-2, -1)$ ,  $E(3, -1)$ ,  $C(2, -4)$ , and  $A(-3, -4)$ . Translate the quadrilateral up 5 and right 2, labeling it  $B'E'C'A'$ . (use a straight edge for full credit)



2. Reflect the triangle over the  $x$ -axis,  $\triangle ABC \rightarrow \triangle A'B'C'$ . Complete the table of the coordinates and plot and label the image on the grid.

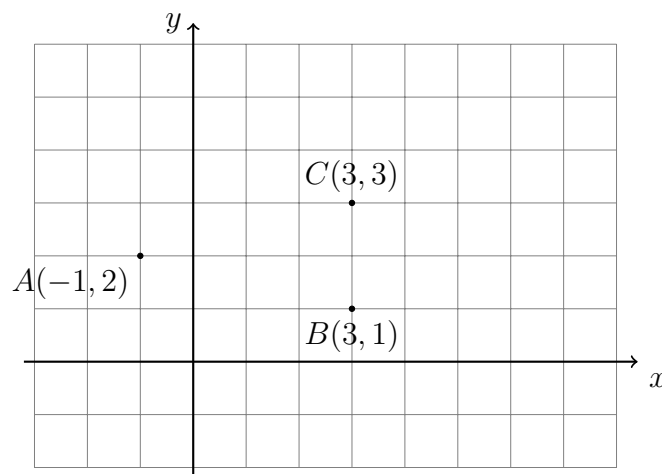
 $A(1, 2) \rightarrow$  $B(1, 4) \rightarrow$  $C(4, 2) \rightarrow$ 

3. A translation is performed mapping  $(x, y) \rightarrow (x + 4, y - 1)$ .

(a) What is the horizontal shift, how many squares right or left?

(b) What is the vertical shift, how many squares up or down?

(c) Identify the image of point  $A$ .  
 $A(-1, 2) \rightarrow$

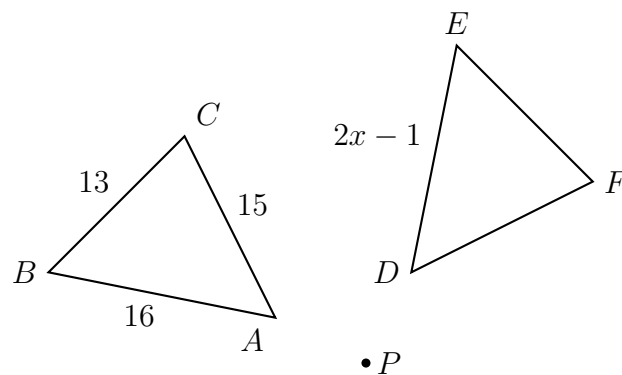


4. In the diagram below,  $\triangle ABC$  with sides of 13, 15, and 16, is mapped onto  $\triangle DEF$  after a clockwise rotation of  $90^\circ$  about point  $P$ .

(a) What is  $A$  mapped to?  $A \rightarrow$

(b) What corresponds to  $F$ ?

(c) Given  $DE = 2x - 1$ . Find  $x$ .

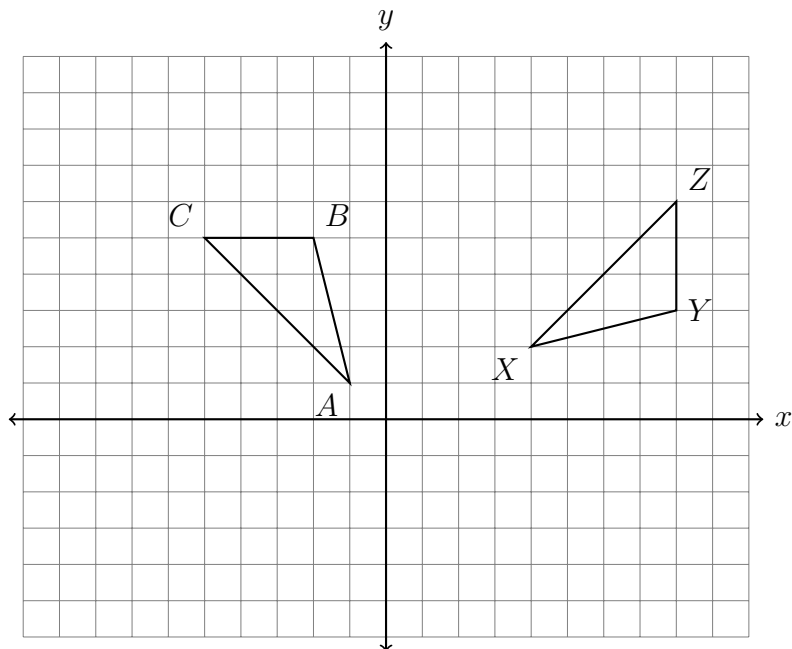


5. A translation maps  $D(2, 4) \rightarrow D'(-3, 4)$ . What is the image of  $E(5, -5)$  under the same translation?

Name:

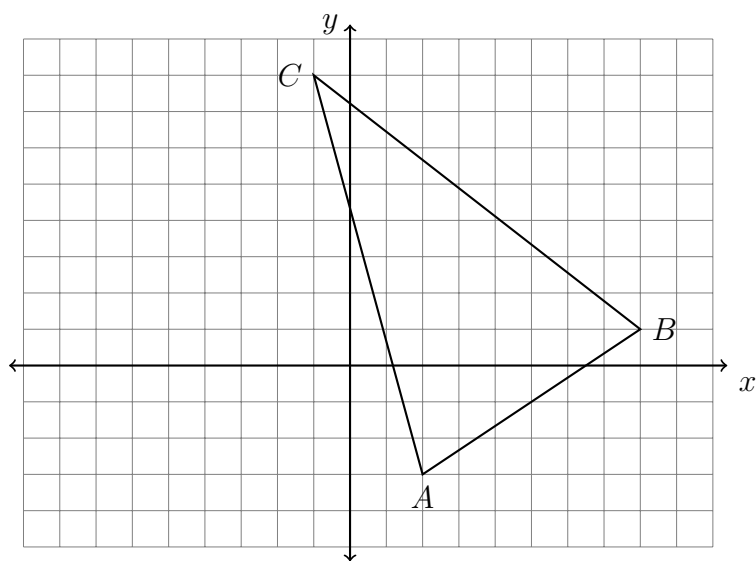
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6. The triangle  $ABC$ , shown below, undergoes two rigid motions carrying it onto triangle  $XYZ$ . State the two isometric transformations. (be specific)



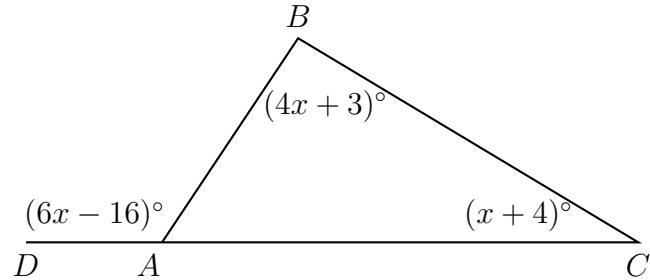
7. Triangle  $\triangle ABC$  is graphed on the set of axes below. The vertices of  $\triangle ABC$  have the coordinates  $A(2, -3)$ ,  $B(8, 1)$ , and  $C(-1, 8)$ .

Reflect the triangle across the  $y$ -axis. Write down its coordinates in a table and plot and label it on the graph.

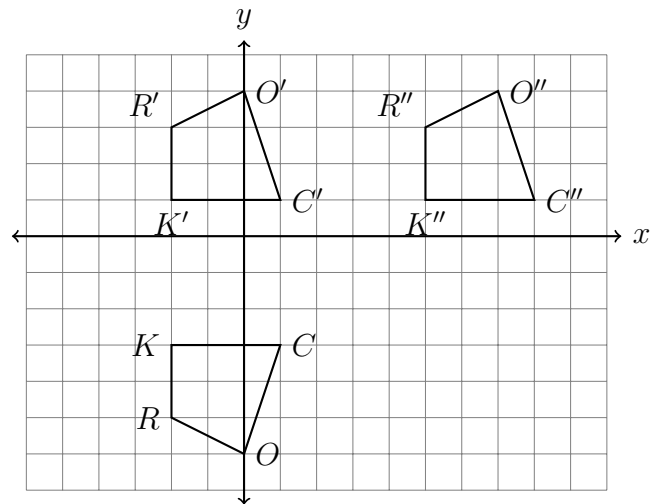


8. In  $\triangle ABC$  shown below, side  $\overline{AC}$  is extended to point  $D$  with  $m\angle DAB = (6x - 16)^\circ$ ,  $m\angle C = (x + 4)^\circ$ , and  $m\angle B = (4x + 3)^\circ$ .

Find  $m\angle BAC$ .



9. The quadrilateral  $ROCK$  undergoes rigid motions, shown below. Describe the sequence of transformations applied.



10. The quadrilateral  $MATH$  is mapped to  $M'A'T'H'$  by a rigid motion. What transformation has been applied?

(a) Dilation

(b) Reflection

(c) Rotation

(d) Translation

