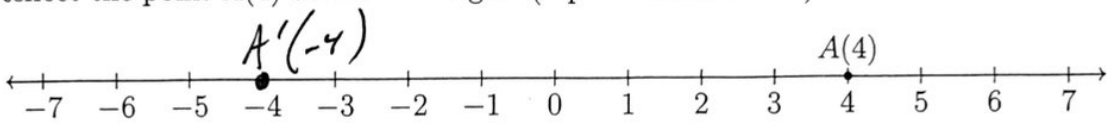
BECA / Dr. Huson / Geometry
Unit 8: Congruence transformations
18 January 2023

Name:

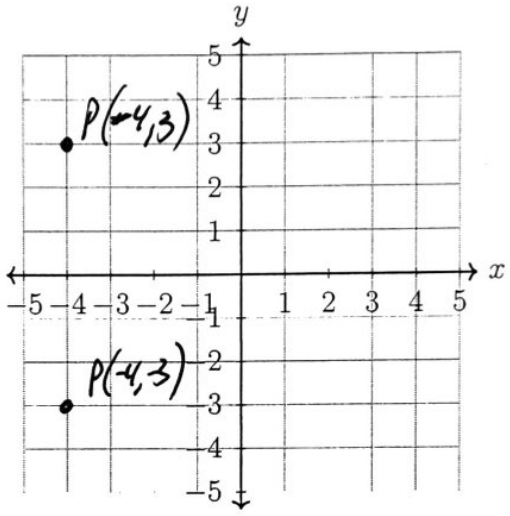
7.2 Classwork: Reflection

CCSS.HSG.CO.A.5

1. Reflect the point $A(4)$ across the origin. (flip the number line) Mark and label it A'.

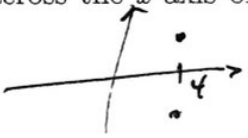


2. On the axes below, graph the point $P(-4, 3)$ and its image, P', after a reflection across the x-axis. Mark P' and write it down as a coordinate pair.

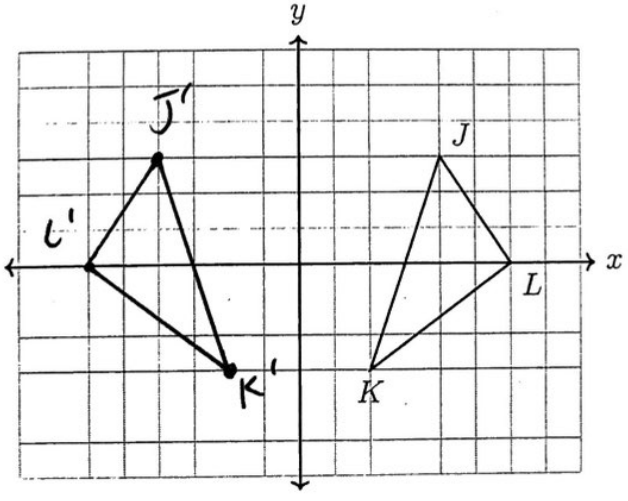


3. A reflection maps $Q(4, 3)$ onto $Q'(4, -3)$. Is the reflection across the x-axis or the y-axis?

x-axis



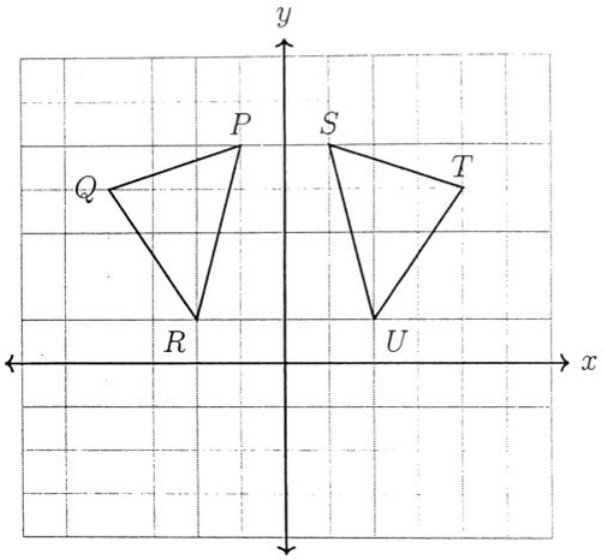
4. Reflect $\triangle JKL$ across the y-axis, labeling the image $\triangle J'K'L'$.



5. Triangle $A'B'C'$ is the image of triangle ABC after a reflection. Is triangle ABC congruent to $A'B'C'$? Explain why.

yes, Reflection is a rigid motion, the lengths ~~are~~ and angles are invariant, so corresponding parts are congruent

6. In the graph below, a transformation maps $\triangle PQR$ onto $\triangle STU$.



(a) Completely identify the transformation.

Reflection across y-axis

(b) What point corresponds to T?

Q

(c) Is R the image of U, or its preimage?

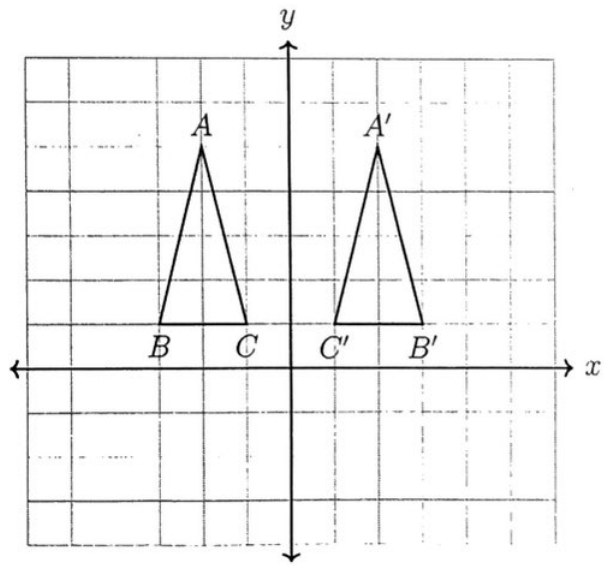
Pre-Image

7. In the graph below, a transformation maps $\triangle ABC \rightarrow \triangle A'B'C'$.

Angie says the triangle must have been reflected across the y-axis. Robbie says it might have been reflected, but it could also have been translated to the right.

Who is correct? Justify your answer.

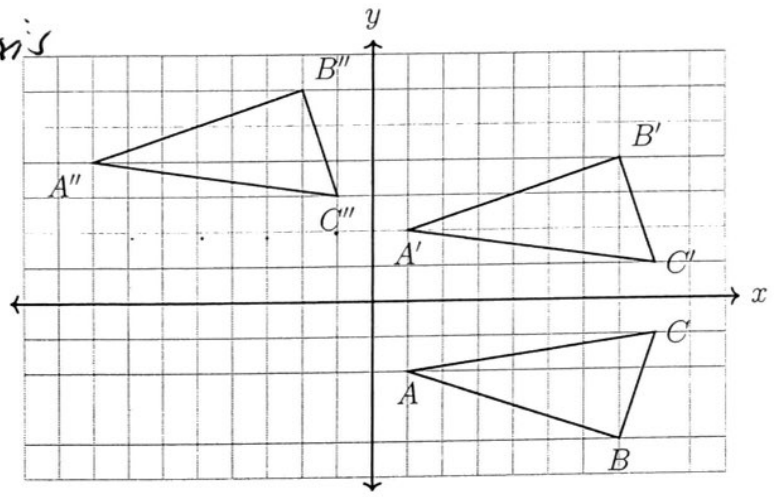
Angie. The orientation is reversed, so only a reflection is correct.



8. Two transformations have been applied to a triangle in the diagram below, $\triangle ABC \to \triangle A'B'C' \to \triangle A''B''C''$. Fully characterize each transformation.

reflection across x-axis

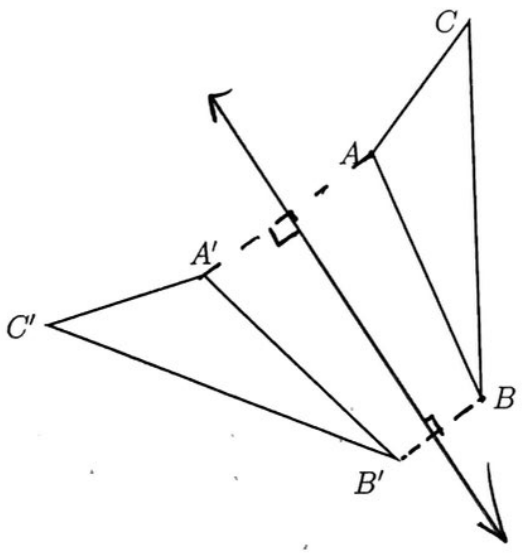
translation 9 left, 2 up



9. A reflection maps $\triangle ABC \to \triangle A'B'C'$. Which triangle has the larger area, the preimage or the image (or neither)? Justify your answer.

Neither. Same area. Reflection is a rigid motion that leaves area invariant

10. Draw the line of reflection that would map $\triangle ABC$ onto $\triangle A'B'C'$.



11. Which of the following would map $\triangle CAT \to \triangle C'A'T'$?

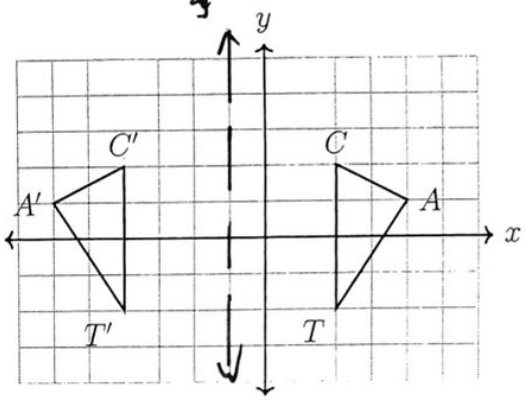
T (F) Reflected across the y-axis

T (F) Translated six to the left, down zero

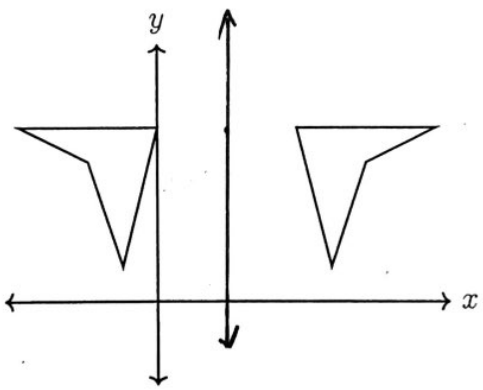
(T) F Reflected across the y-axis, then slid to the left two

T (F) $(x, y) \to (x - 6, y + 0)$

(T) F Reflected across the line $x = -1$



12. Draw the line of reflection for quadrilaterals in the diagram below.



13. First reflect the trapezoid $BECA$ across the x-axis, then move it down 1 and right 7. Label the images $B'E'C'A'$ and $B''E''C''A''$.