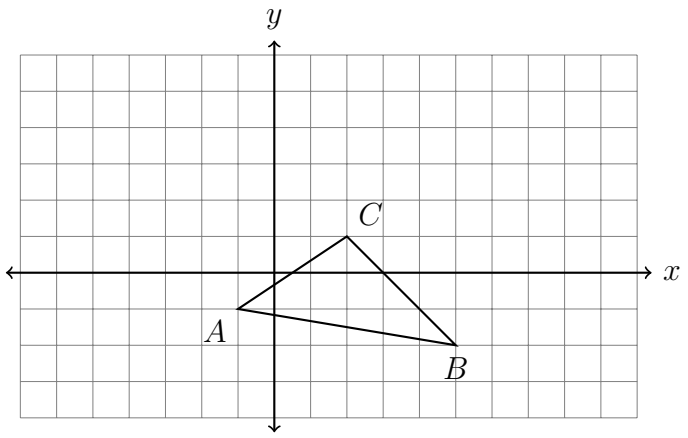
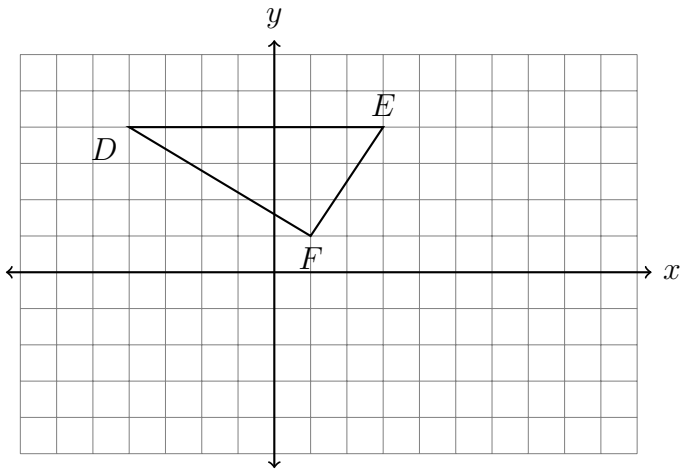
9.5b Exam: Rigid motions including translation, reflection, rotation

1. Slide $\triangle ABC$ to the right three and up four. Label the image $\triangle A'B'C'$.



2. Translate $\triangle DEF$ by $(x, y) \to (x + 3, y - 5)$. Label the image $\triangle D'E'F'$.



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

T F Reflected across the y-axis

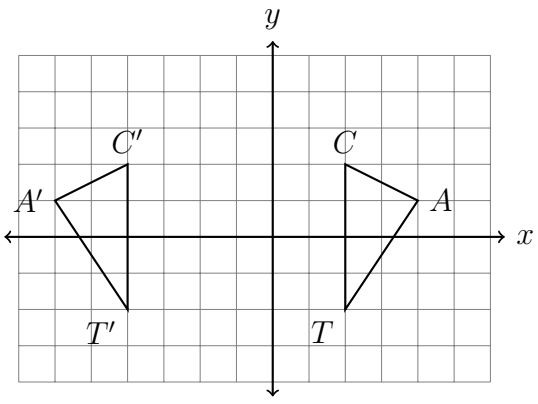
T F Translated six to the left, down zero

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

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

T F Rotated 90° counterclockwise around the origin

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



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

T F Reflected across the y-axis

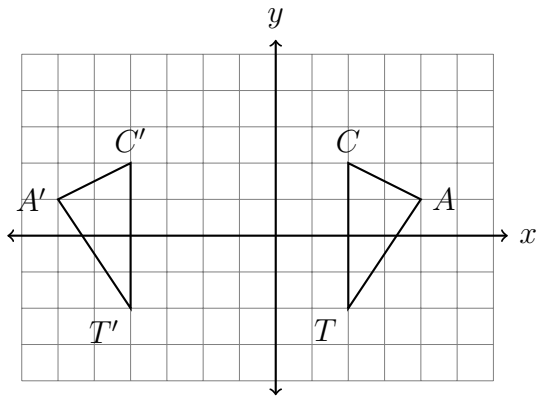
T F Translated six to the left, down zero

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

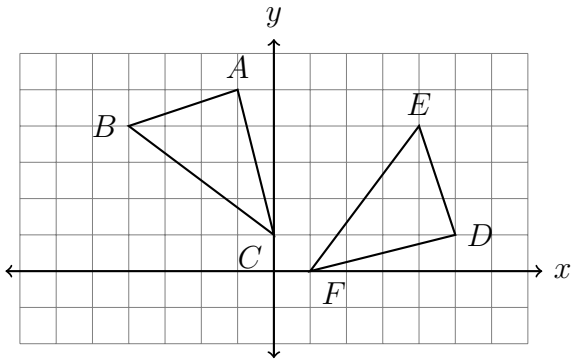
T F $(x, y) \to (x - 6, y + 0)$

T F Rotated 90° counterclockwise around the origin

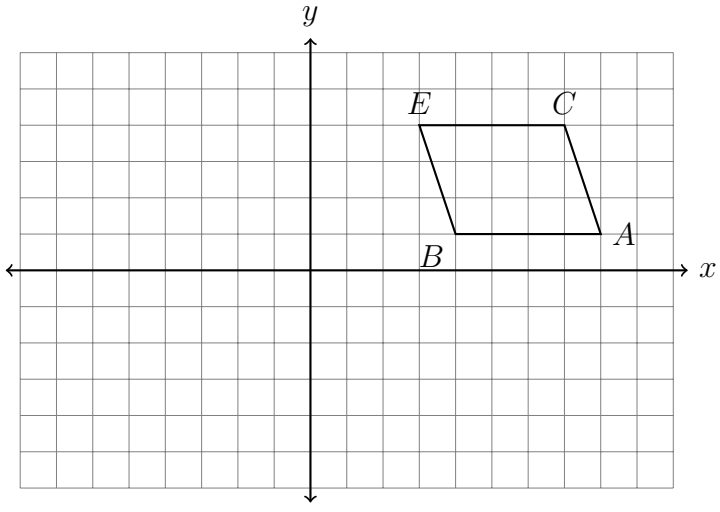
T F Reflected across the line $x = -1$



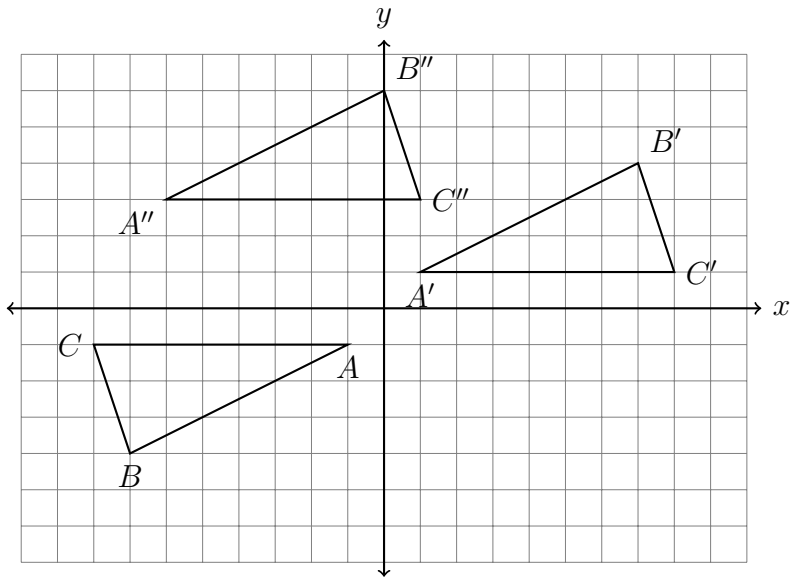
5. Determine and state the transformation mapping $\triangle DEF$ onto $\triangle ABC$. Also, make a mapping table of the coordinate pairs.



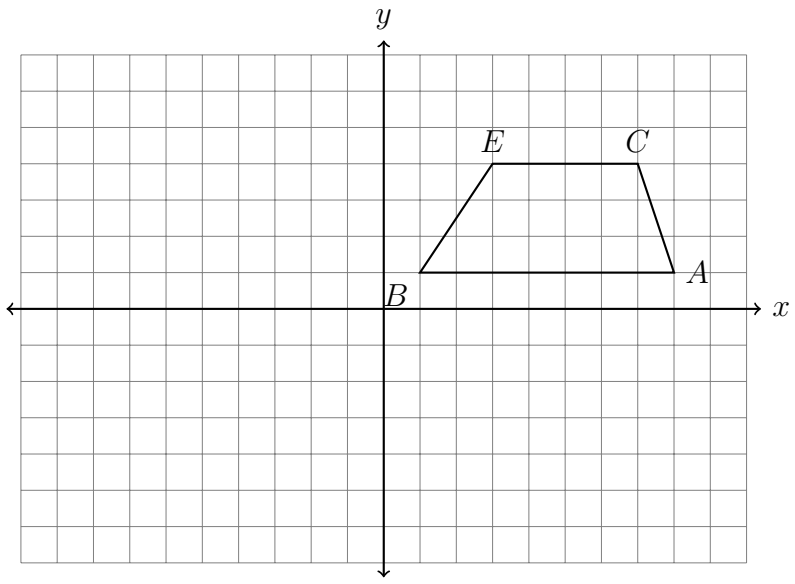
6. First reflect the trapezoid $BECA$ across the y-axis, then move it down five and right two. Label the images $B'E'C'A'$ and $B''E''C''A''$.



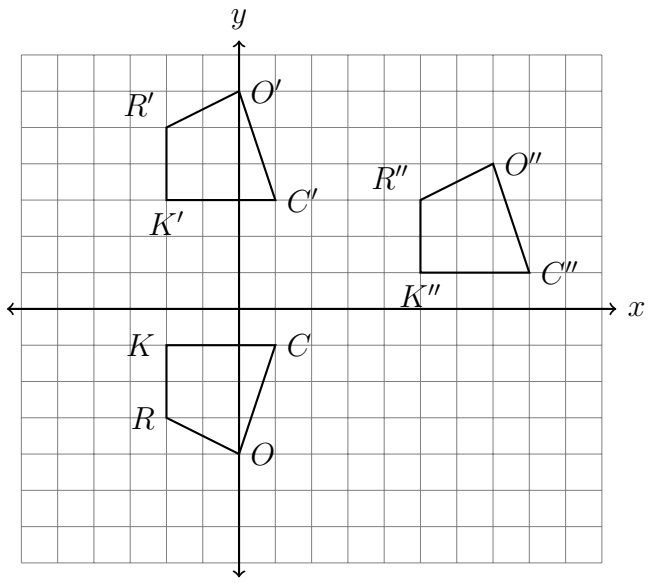
7. Two transformations have been applied to a triangle in the diagram below, $\triangle ABC \to \triangle A'B'C' \to \triangle A''B''C''$. Fully characterize each transformation.



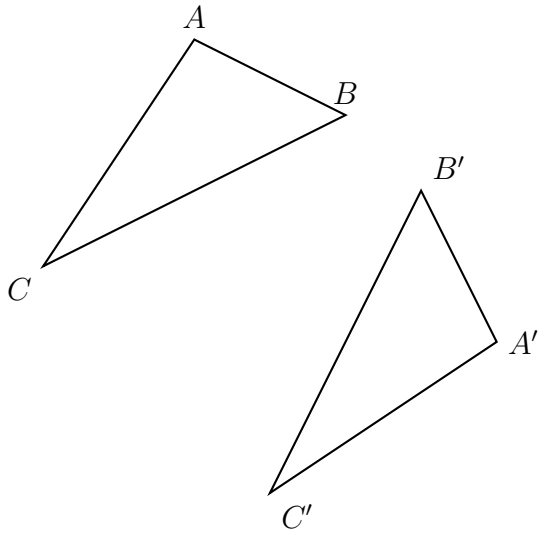
8. Reflect the trapezoid $BECA$ across the x-axis. Label the image $B'E'C'A'$.



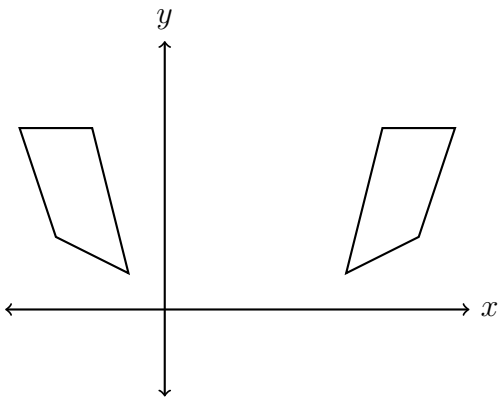
9. The quadrilateral $ROCK$ undergoes two transformations, shown below. Describe the sequence of transformations applied.



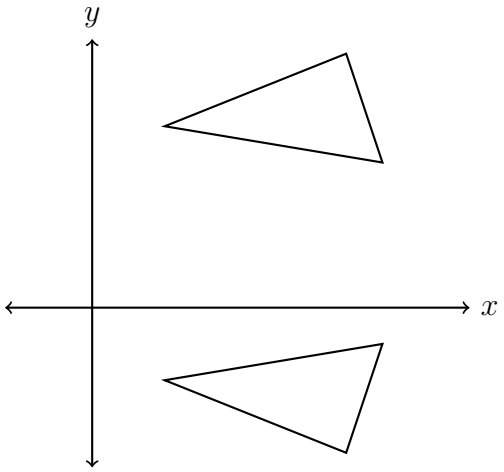
10. Draw the line of reflection used to map $\triangle ABC$ onto $\triangle A'B'C'$.



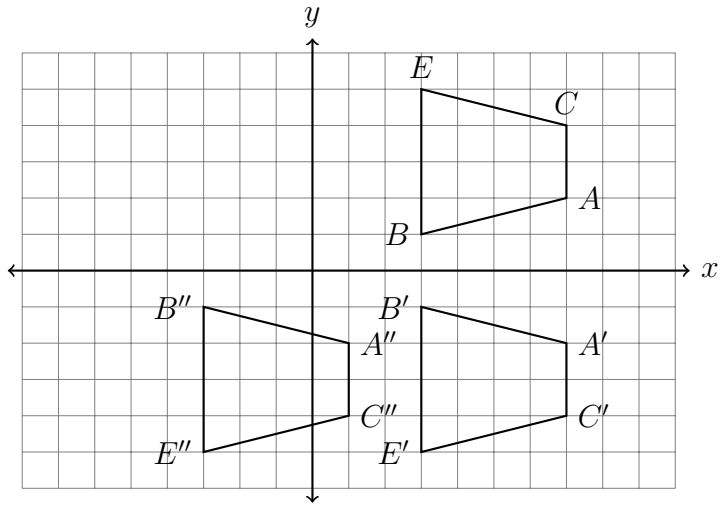
11. Draw the line of reflection for the diagram below.



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



13. Determine and state the sequence of transfromations applied to map $BECA$ to $B'E'C'A'$ and then to $B''E''C''A''$.

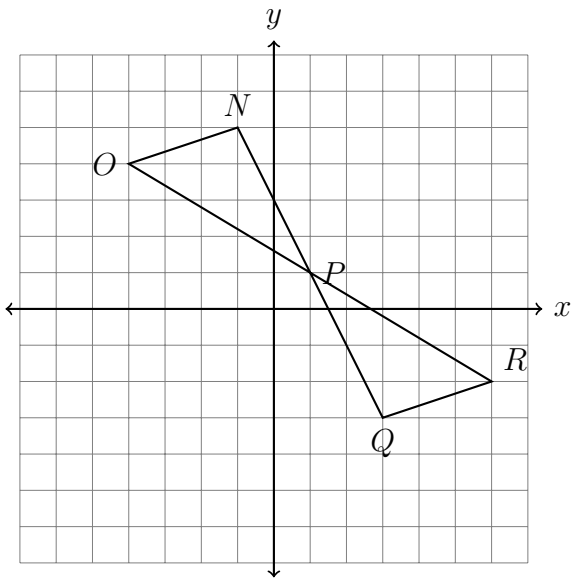


14. Find the image of $A(3, 2)$ after a translation four to the right and down two.

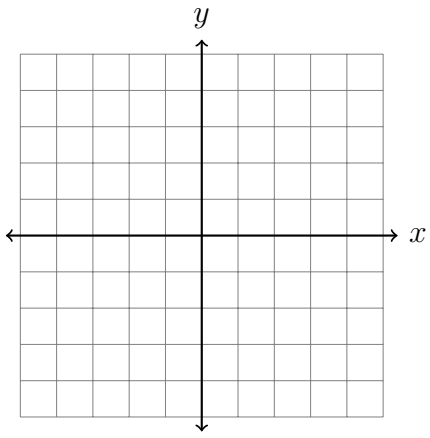
15. Apply the translation $(x, y) \to (x - 5, y + 1)$ to the point $B(-2, -1)$.

16. State the translation that would map $C(6, 3)$ onto $C'(5, 13)$.

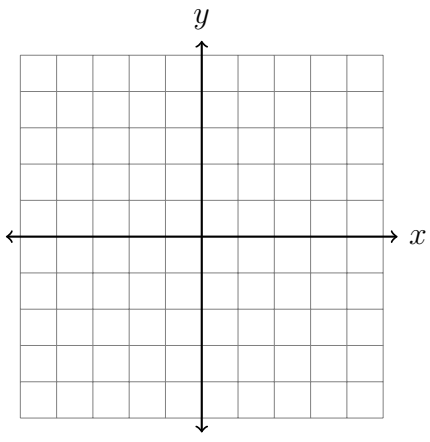
17. Determine and state the transformation mapping $\triangle NOP$ onto $\triangle QRP$.



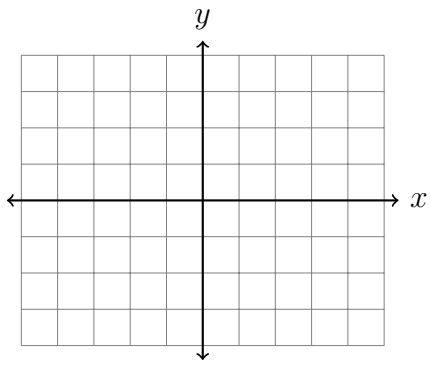
18. Apply the translation $(x, y) \to (x - 2, y + 4)$ to the point $A(2, -1)$.



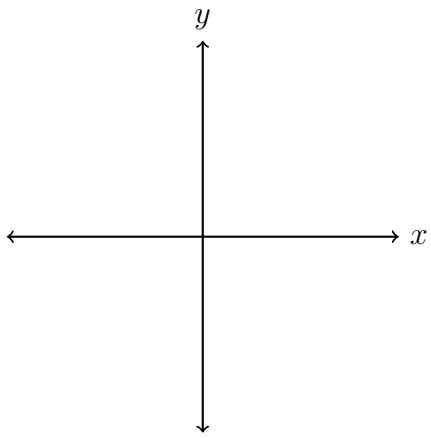
19. What is the image of $B(2, 4)$ under a reflection across the x-axis?



20. State the translation that would map $C(-3, 1)$ onto $C'(4, 0)$.



21. Given $D(1, 9) \rightarrow D'(4, 3)$. Find the image of $E(6, -2)$ with the translation.



22. The image of triangle ABC after a translation is $\triangle A'B'C'$. Is the area of the triangle greater, smaller, or the same after the translation? Justify your answer.