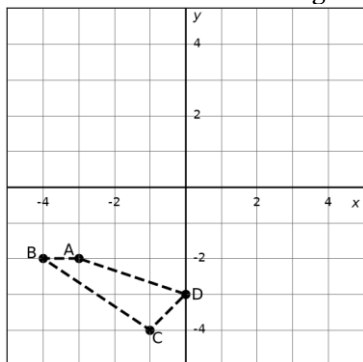
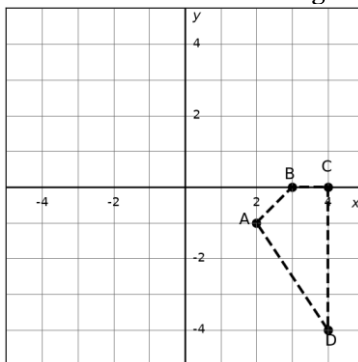


Directions: Use rigid transformations on the coordinate plane.

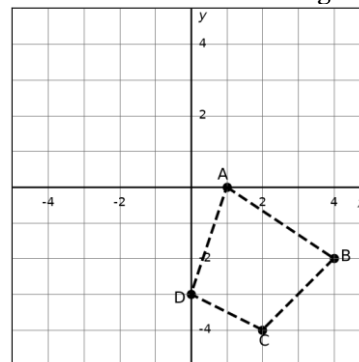
1. Translate the figure right 5 and up 4.
Write the coordinates of the image.



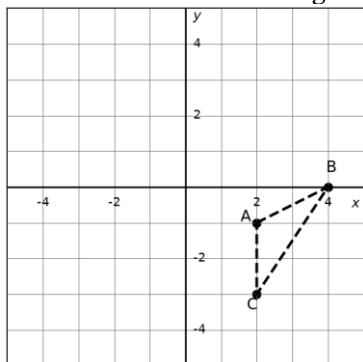
2. Translate the figure left 4 and up 2.
Write the coordinates of the image.



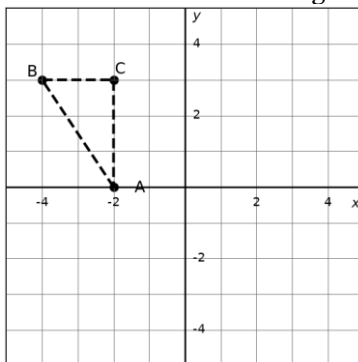
3. Translate the figure left 5 and up 5.
Write the coordinates of the image.



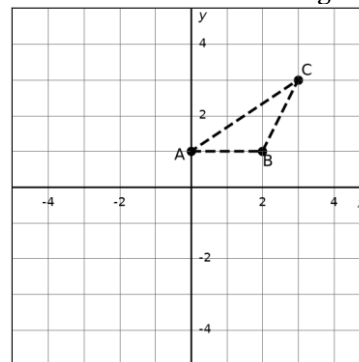
4. Reflect the figure across the y-axis.
Write the coordinates of the image.



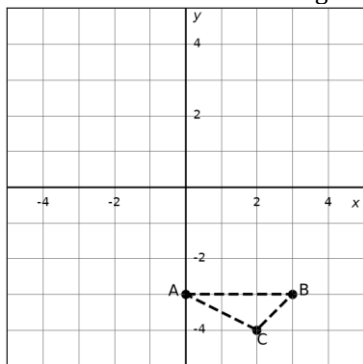
5. Reflect the figure across the y-axis.
Write the coordinates of the image.



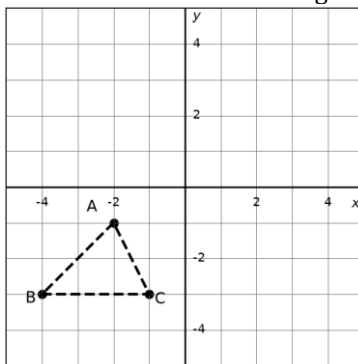
6. Reflect the figure across the x-axis.
Write the coordinates of the image.



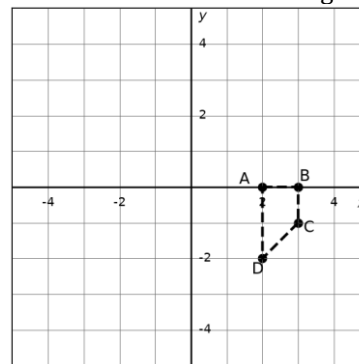
7. Reflect the figure across the $y = -x$.
Write the coordinates of the image.



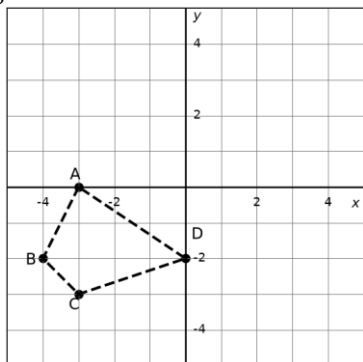
8. Reflect the figure across the $y = x$.
Write the coordinates of the image.



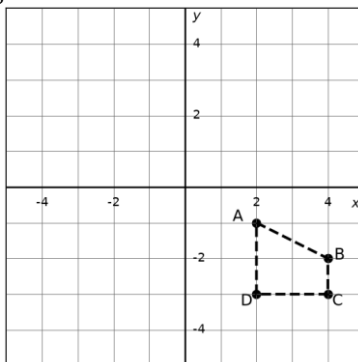
9. Reflect the figure across the $y = -x$.
Write the coordinates of the image.



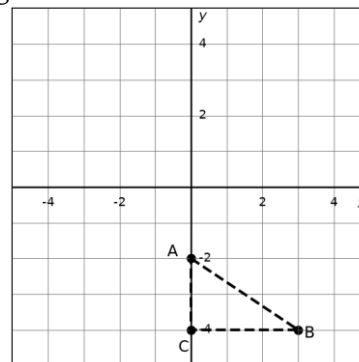
10. Rotate the figure 270° **CCW** about the origin. Write the coordinates of the image.



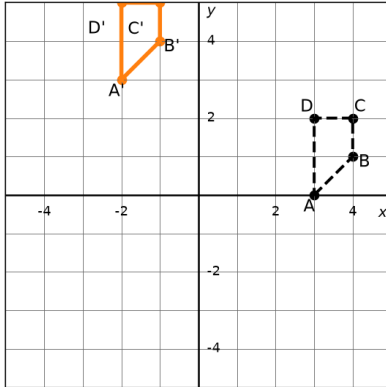
11. Rotate the figure 270° **CCW** about the origin. Write the coordinates of the image.



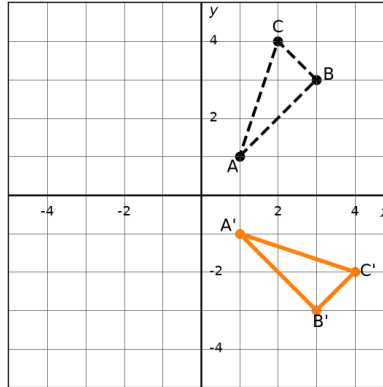
12. Rotate the figure 180° **CW** about the origin. Write the coordinates of the image.



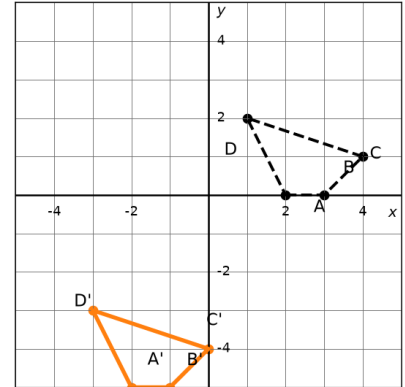
13. Identify the rigid transformation shown on the graph.



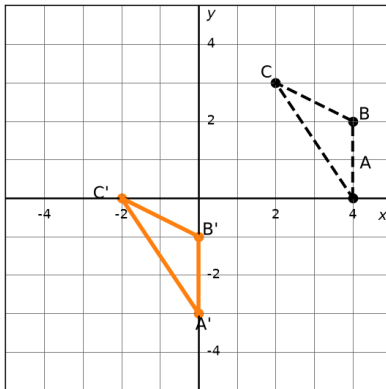
14. Identify the rigid transformation shown on the graph.



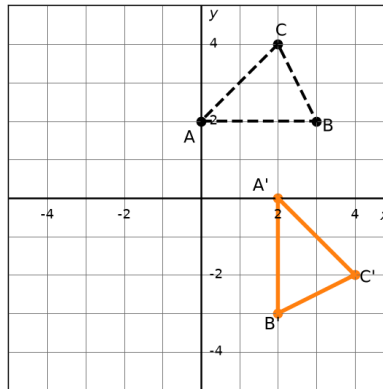
15. Identify the rigid transformation shown on the graph.



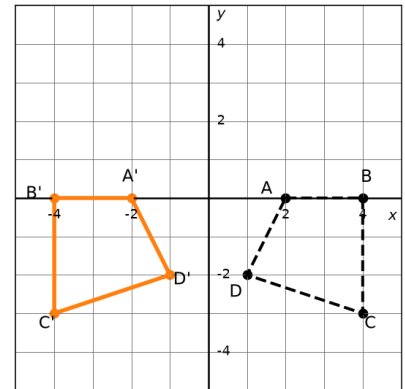
16. Identify the rigid transformation shown on the graph.



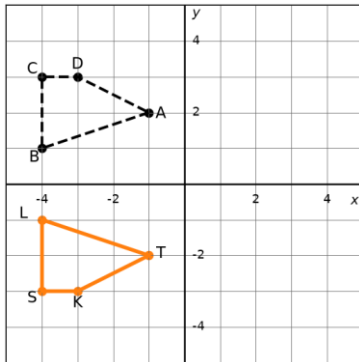
17. Identify the rigid transformation shown on the graph.



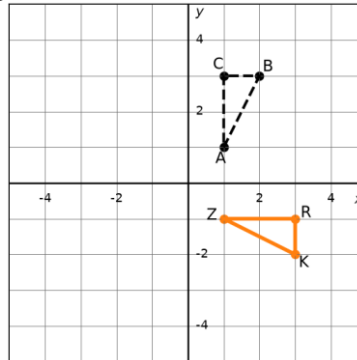
18. Identify the rigid transformation shown on the graph.



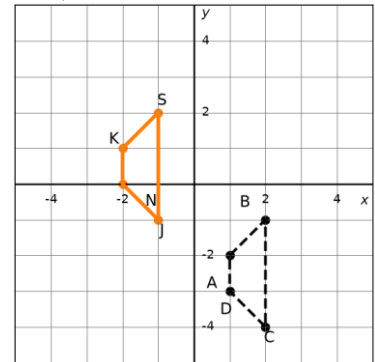
19. Quadrilateral ABCD was reflected. Which line in the image corresponds to line DA?



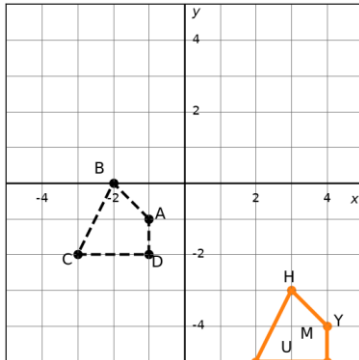
20. Triangle ABC was rotated. Which image angle corresponds to angle B?



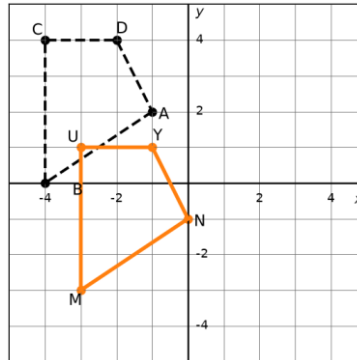
21. Quadrilateral ABCD was translated. What stays the same: side lengths, angle measures, or both?



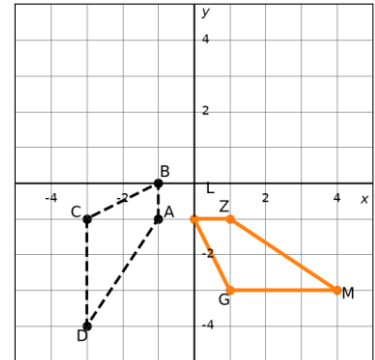
22. Quadrilateral ABCD was translated. What stays the same: side lengths, angle measures, or both?



23. Quadrilateral ABCD was translated. Which line in the image corresponds to line AB?



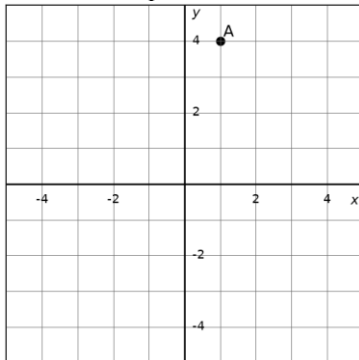
24. Quadrilateral ABCD was rotated. Which image point corresponds to point B?



25. Point A starts at (1, 4).

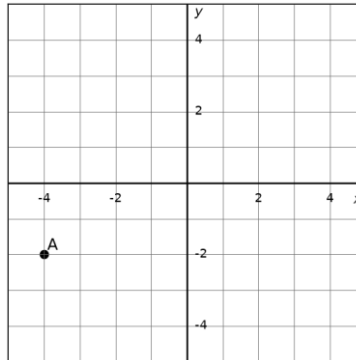
- 1) reflect over the x-axis
- 2) rotate 180° **CCW**
- 3) translate right 3 and down 4
- 4) rotate 270° **CW**

Write the final point.

**26.** Point A starts at (-4, -2).

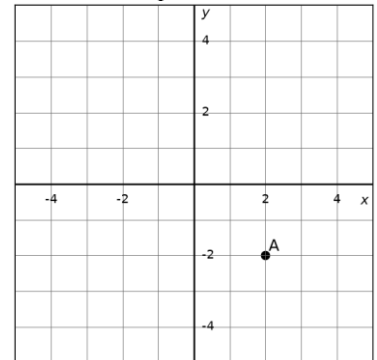
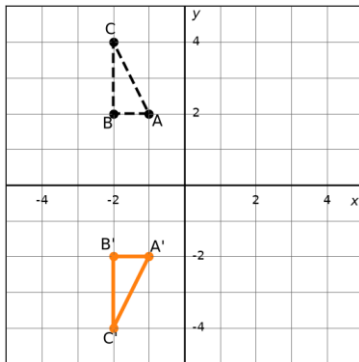
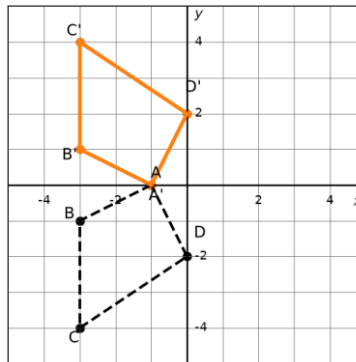
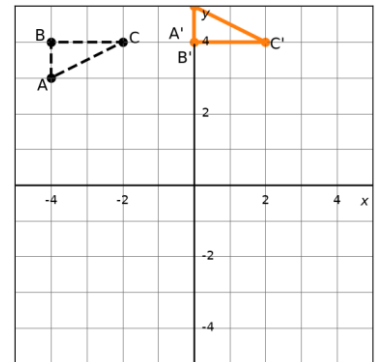
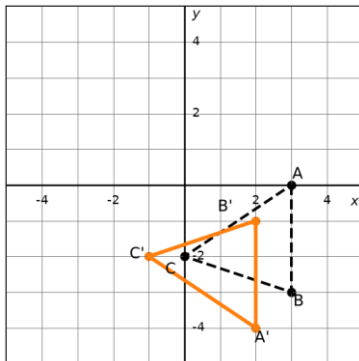
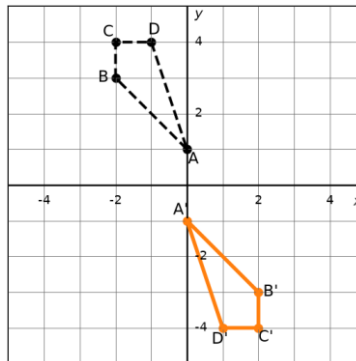
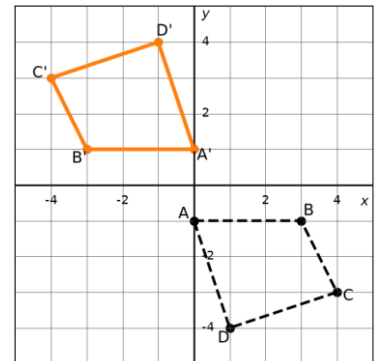
- 1) reflect over the y-axis
- 2) translate left 4 and up 6
- 3) rotate 90° **CCW**
- 4) reflect over the x-axis

Write the final point.

**27.** Point A starts at (2, -2).

- 1) translate left 3 and up 4
- 2) rotate 90° **CCW**
- 3) reflect over the x-axis
- 4) rotate 270° **CCW**

Write the final point.

**28.** The figure below was transformed by two rigid motions. Identify both transformations.**29.** The figure below was transformed by two rigid motions. Identify both transformations.**30.** The figure below was transformed by two rigid motions. Identify both transformations.**31.** The figure below was transformed by two rigid motions. Identify both transformations.**32.** The figure below was transformed by two rigid motions. Identify both transformations.**33.** The figure below was transformed by two rigid motions. Identify both transformations.

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Answer Key

1. $A'(2, 2), B'(1, 2), C'(4, 0), D'(5, 1)$	2. $A'(-2, 1), B'(-1, 2), C'(0, 2), D'(0, -2)$	3. $A'(-4, 5), B'(-1, 3), C'(-3, 1), D'(-5, 2)$
4. $A'(-2, -1), B'(-4, 0), C'(-2, -3)$	5. $A'(2, 0), B'(4, 3), C'(2, 3)$	6. $A'(0, -1), B'(2, -1), C'(3, -3)$
7. $A'(3, 0), B'(3, -3), C'(4, -2)$	8. $A'(-1, -2), B'(-3, -4), C'(-3, -1)$	9. $A'(0, -2), B'(0, -3), C'(1, -3), D'(2, -2)$
10. $A'(0, 3), B'(-2, 4), C'(-3, 3), D'(-2, 0)$	11. $A'(-1, -2), B'(-2, -4), C'(-3, -4), D'(-3, -2)$	12. $A'(0, 2), B'(-3, 4), C'(0, 4)$
13. $(x, y) \rightarrow (x - 5, y + 3)$	14. $(x, y) \rightarrow (y, -x)$	15. $(x, y) \rightarrow (x - 4, y - 5)$
16. $(x, y) \rightarrow (x - 4, y - 3)$	17. $(x, y) \rightarrow (y, -x)$	18. $(x, y) \rightarrow (-x, y)$
19. KT	20. $\angle K$	21. Both side lengths and angle measures stay the same.
22. Both side lengths and angle measures stay the same.	23. NM	24. L
25. $(0, 2)$	26. $(-4, 0)$	27. $(1, 2)$
28. 1st: $(x, y) \rightarrow (-x, -y)$ 2nd: $(x, y) \rightarrow (-x, y)$	29. 1st: $(x, y) \rightarrow (-x, -y)$ 2nd: $(x, y) \rightarrow (-x, y)$	30. 1st: $(x, y) \rightarrow (x + 4, y - 8)$ 2nd: $(x, y) \rightarrow (x, -y)$
31. 1st: $(x, y) \rightarrow (x - 1, y + 4)$ 2nd: $(x, y) \rightarrow (x, -y)$	32. 1st: $(x, y) \rightarrow (x, -y)$ 2nd: $(x, y) \rightarrow (-x, y)$	33. 1st: $(x, y) \rightarrow (x, -y)$ 2nd: $(x, y) \rightarrow (-x, y)$