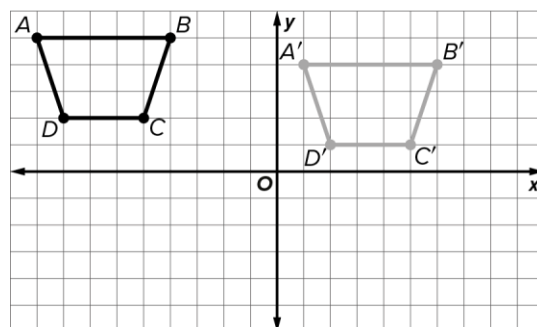


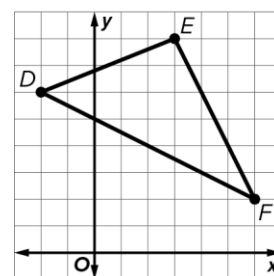
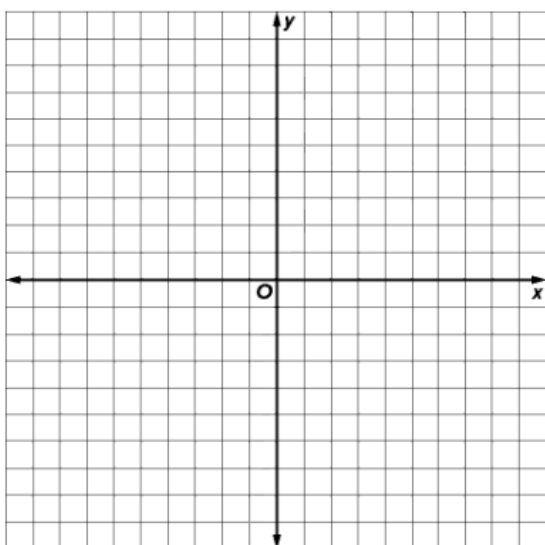
Module Test Form A1 Transformations

- Trapezoid $ABCD$ represents the location of a picture on Sandy's wall. Sandy moved the picture to a new location, shown by trapezoid $A'B'C'D'$ to be in compliance with store policies. Describe the movement of the picture.



- The graph of $\triangle DEF$ is shown.

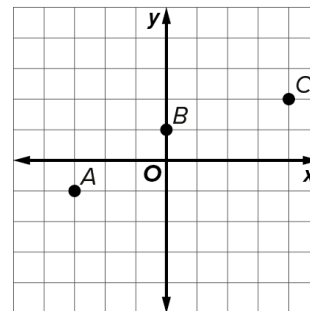
Part A Graph the image of $\triangle DEF$ after a translation of 3 units right and 2 units down.



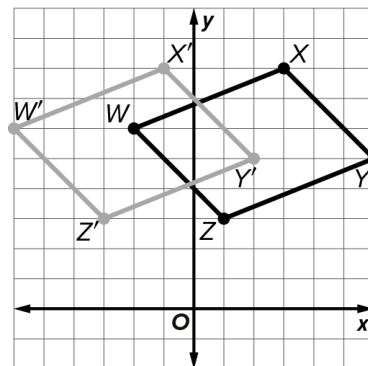
Part B Explain how to find the coordinates of the image of $\triangle DEF$.

3. Which statement describes the translation from B to A ?

- Ⓐ The point is translated 3 units right and 2 units down.
 Ⓑ The point is translated 3 units right and 2 units up.
 Ⓒ The point is translated 3 units left and 2 units up.
 Ⓓ The point is translated 3 units left and 2 units down.



4. The picnic table shown by parallelogram $WXYZ$ was moved to avoid a beehive. The new location of the picnic table is shown by parallelogram $W'X'Y'Z'$. Explain how to write the coordinate notation to describe the translation.



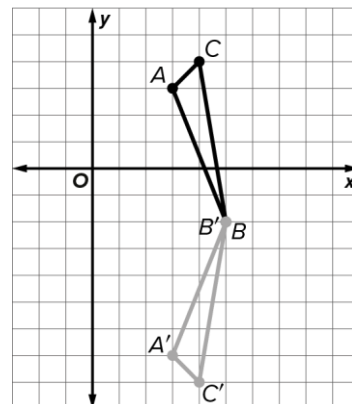
5. Quadrilateral $ABCD$ has vertices $A(-2, -2)$, $B(1, 1)$, $C(0, 4)$, and $D(-3, 5)$. The figure is translated using the rule $(x, y) \rightarrow (x + 2, y - 1)$ and then translated using the rule $(x, y) \rightarrow (x - 3, y + 4)$. What are the coordinates of image $A''B''C''D''$ after both translations?

6. Consider the graph of $\triangle ABC$ and its image, $\triangle A'B'C'$. Which statement is accurate regarding the transformation shown? Select all that apply.

- Ⓐ $\triangle A'B'C'$ is the image of a reflection of $\triangle ABC$ across the x-axis.
 Ⓑ $\triangle A'B'C'$ is the image of a reflection of $\triangle ABC$ across the line $y = -2$.

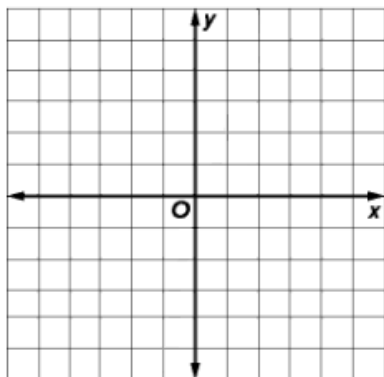
The x-coordinates of the vertices of $\triangle ABC$ and its image $\triangle A'B'C'$ are the same.

- Ⓓ The x-coordinates of the vertices of $\triangle ABC$ and its image $\triangle A'B'C'$ are opposites.
 Ⓔ The y-coordinates of the vertices of $\triangle ABC$ and its image $\triangle A'B'C'$ are the same.
 Ⓕ The y-coordinates of the vertices of $\triangle ABC$ and its image $\triangle A'B'C'$ are opposites.



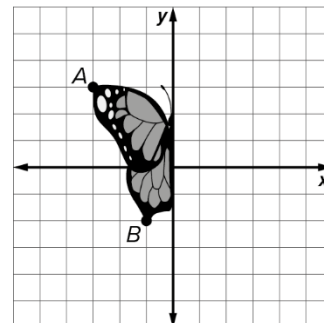
7. Triangle ABC has coordinates $A(3, 3)$, $B(5, -2)$, and $C(4, 4)$.

Part A Graph the preimage and image of the triangle after it is reflected across the y-axis.

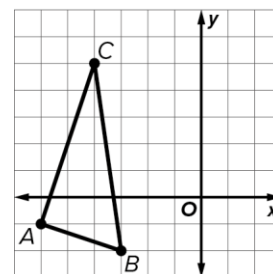


Part B Explain how to write the coordinates of the vertices of the reflected triangle.

8. The figure is reflected over the y -axis. Sketch the figure and its image on the coordinate plane. Label points A' and B' on the reflected image.

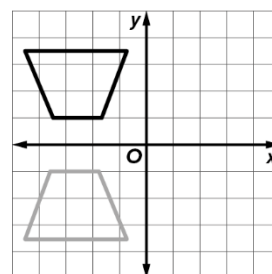


9. Triangle ABC represents the sail of a sailboat. Chad reflected the triangle so that point $B(-3, -2)$ transformed to $B'(-1, -2)$. What is the line of reflection?



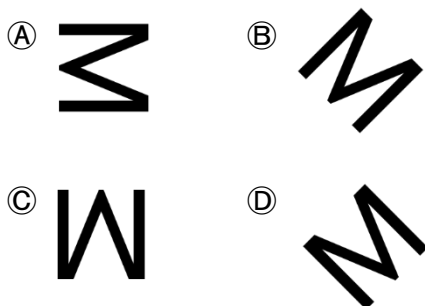
10. Johnny modeled the location of two gardens on the coordinate plane based on the instructions from his manager. What instructions did the manager give Johnny in regard to the relationship between the two gardens?

- (A) Translate the first garden 2 units up.
- (B) Translate the first garden 2 units down.
- (C) Reflect the first garden over the x -axis.
- (D) Reflect the first garden over the y -axis.



11. Nathan is making a flyer that contains a capital M. Which of the following represents the correct image of the capital M after being rotated 180° clockwise?

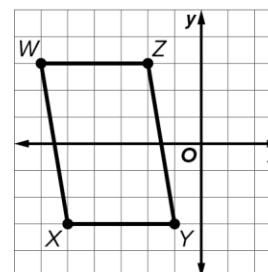
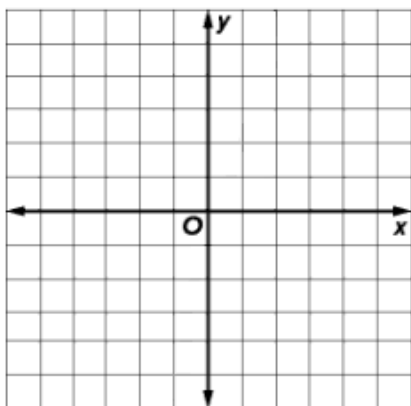
M



12. The vertices of PQRS have coordinates $P(-1, 5)$, $Q(3, 4)$, $R(2, -4)$, and $S(-3, -2)$ and represent the corners of Brandt's office on a coordinate plane. Explain how to find the coordinates of the vertices of the rectangle $P'Q'R'S'$ after a clockwise rotation of 90° about the origin.

13. Triangle JKL has vertices $J(3, -7)$, $K(7, -3)$, and $L(3, 7)$. What are the coordinates of point J after a 270° rotation counterclockwise about the origin?

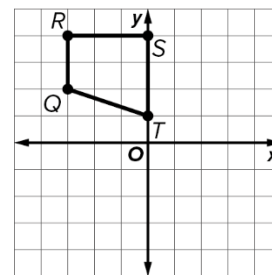
14. Parallelogram WXYZ is rotated 180° counterclockwise about the origin. Graph the image of the rotation on the coordinate plane.



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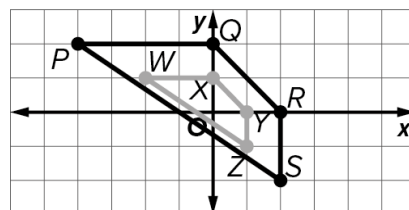
15. The trapezoid shown represents a game piece. Jim rotated the trapezoid so that point R' is located at $(4, 3)$. Which of the following describes the rotation that was performed?

- Ⓐ 270° counterclockwise about point T
Ⓑ 180° counterclockwise about point T
Ⓒ 180° clockwise about the origin
Ⓓ 90° clockwise about the origin

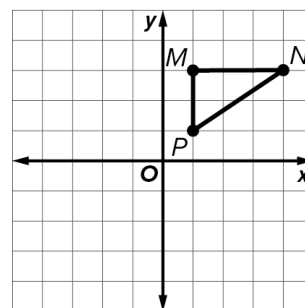


16. Which statement accurately describes the dilation of quadrilateral $PQRS$? Select all that apply.

- Ⓐ The coordinates of quadrilateral $PQRS$ are half of the coordinates of quadrilateral $WXYZ$.
Ⓑ The coordinates of quadrilateral $PQRS$ are twice the coordinates of quadrilateral $WXYZ$.
Ⓒ The dilation is an enlargement.
Ⓓ The dilation is a reduction.
Ⓔ The coordinate notation for the dilation is $(x, y) \rightarrow (2x, 2y)$.
Ⓕ The coordinate notation for the dilation is $(x, y) \rightarrow (\frac{1}{2}x, \frac{1}{2}y)$.

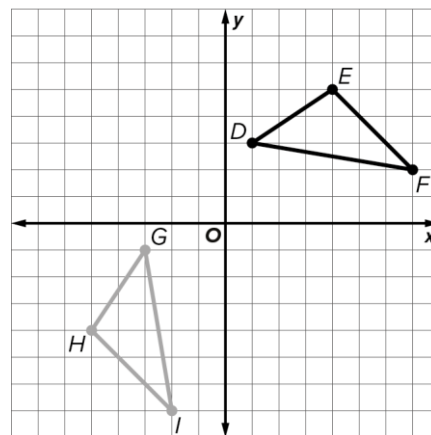


17. Triangle MNP is an aerial view of Sarah's tent at a campground. Sarah finds that if she rotates her tent 180° about the origin and then dilates by a scale factor of 3 centered at the origin, she will have the best view of the scenery and more space inside her tent. Explain how to find the new coordinates of Sarah's tent.

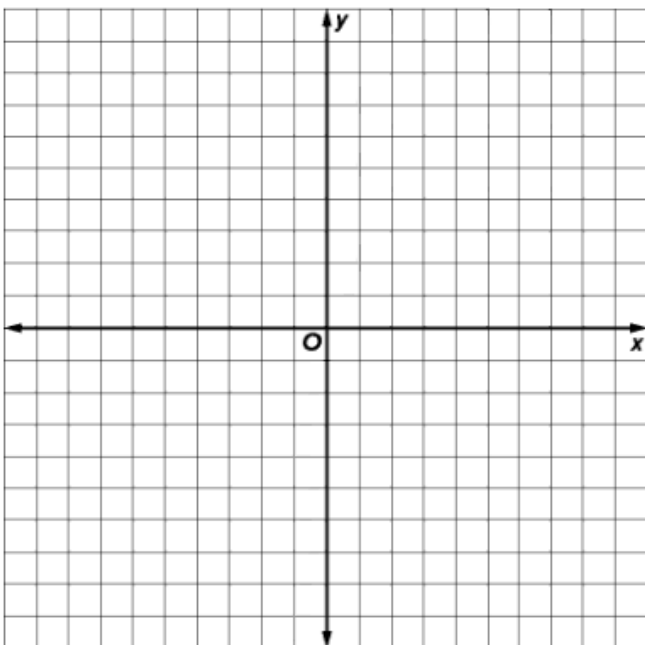


18. Triangle GHI is the image of $\triangle DEF$ after a transformation or a sequence of transformations. Which could be the transformation or sequence of transformations? Select all that apply.

- Ⓐ a translation 6 units up followed by a reflection across the line $x = 0.5$.
- Ⓑ a reflection across the line $y = x$
- Ⓒ a reflection across the x -axis followed by a reflection across the y -axis
- Ⓓ a rotation of 90° counterclockwise about the origin followed by a reflection across the x -axis
- Ⓔ a rotation of 90° clockwise about the origin followed by a reflection across the y -axis



19. A figure has vertices $H(-8, 4)$, $J(6, 4)$, $K(6, -4)$, and $L(-8, -4)$. Graph the figure and the image of the figure after a dilation with a scale factor of $\frac{3}{4}$.



20. Which shows polygon A rotated 90° counterclockwise about point P?

