

Unit 1 Study Guide

General Transformation Understanding

1. Which of the following transformations produce a figure that is **CONGRUENT** to the original figure:

translation

reflection

rotation

dilation

2. Which of the following transformations produce a figure that is **SIMILAR** to the original figure:



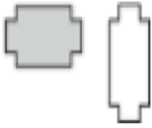



translation

reflection

rotation

dilation

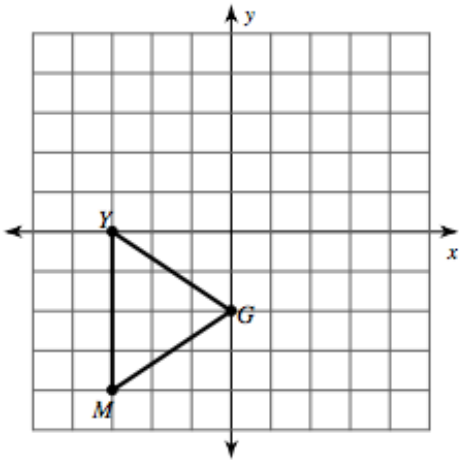
3. Tell whether the shaded figure is a translation, reflection, rotation, or dilation of the non-shaded figure. Circle only **one answer** per shape.

	Translation	Reflection	Rotation	Dilation
	Translation	Reflection	Rotation	Dilation
	Translation	Reflection	Rotation	Dilation
	Translation	Reflection	Rotation	Dilation
	Translation	Reflection	Rotation	Dilation
	Translation	Reflection	Rotation	Dilation

Translations

For each transformation, record the original coordinates and the coordinates of the figure after the transformation. Then, graph the figure after the transformation.

4. Translate 1 unit left and 2 units up

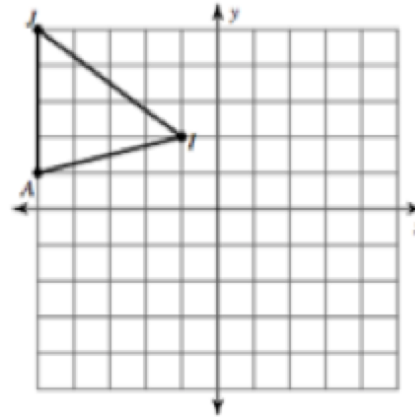


M: _____ → M': _____

Y: _____ → Y': _____

G: _____ → G': _____

5. Translate using the rule $(x, y) \rightarrow (x + 4, y - 4)$

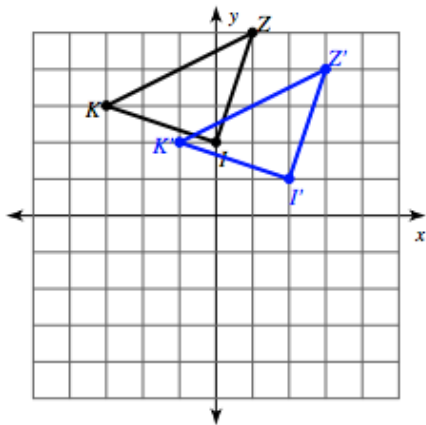


A: _____ → A': _____

J: _____ → J': _____

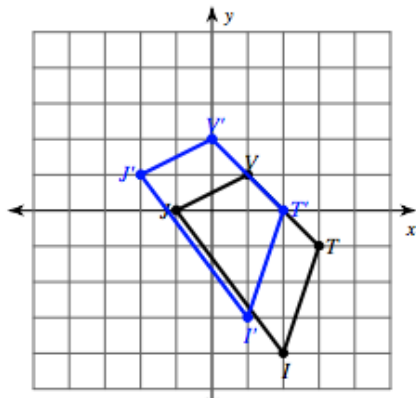
I: _____ → I': _____

6. Write a rule, using translation notation, to describe the following translation:



$(x, y) \rightarrow (x \text{ _____}, y \text{ _____})$

7. Write a rule, using translation notation, to describe the following translation:

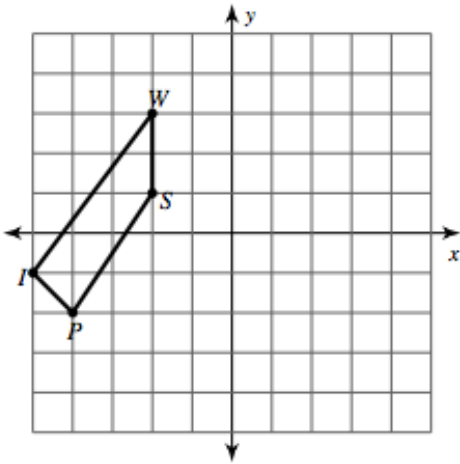


$(x, y) \rightarrow (x \text{ _____}, y \text{ _____})$

Reflections

For each transformation, record the original coordinates and the coordinates of the figure after the transformation. Then, graph the figure after the transformation.

8. Reflect across the y-axis



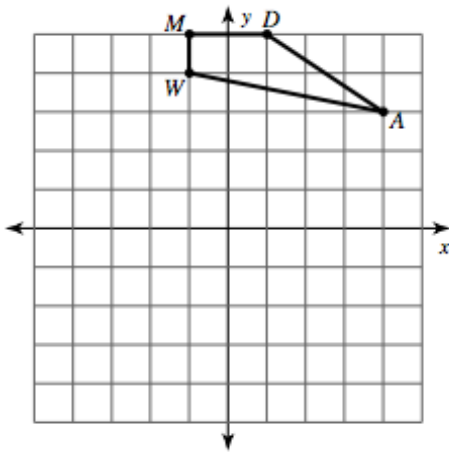
W: _____ → W': _____

S: _____ → S': _____

I: _____ → I': _____

P: _____ → P': _____

9. Reflect across the x-axis



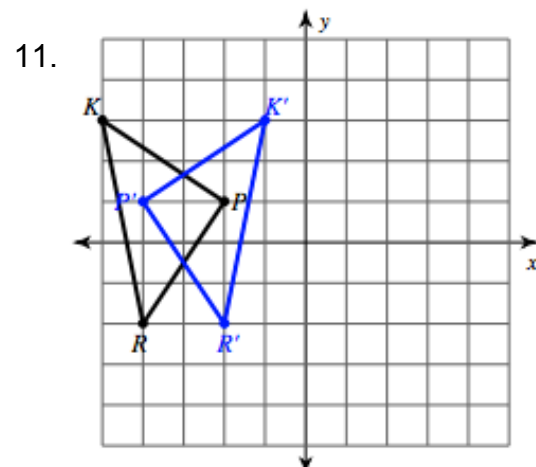
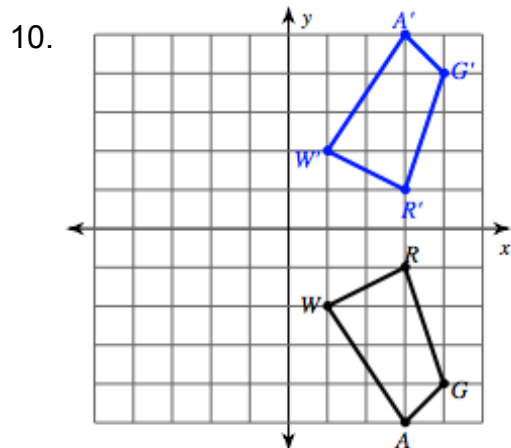
M: _____ → M': _____

D: _____ → D': _____

A: _____ → A': _____

W: _____ → W': _____

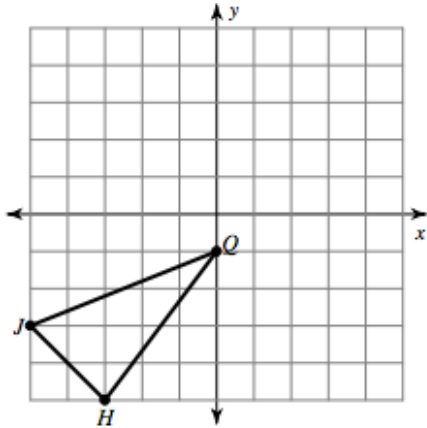
Write a rule to describe each reflection.



Rotations

For each transformation, record the original coordinates and the coordinates of the figure after the transformation. Then, graph the figure after the transformation.

12. Rotate 180 degrees about the origin.

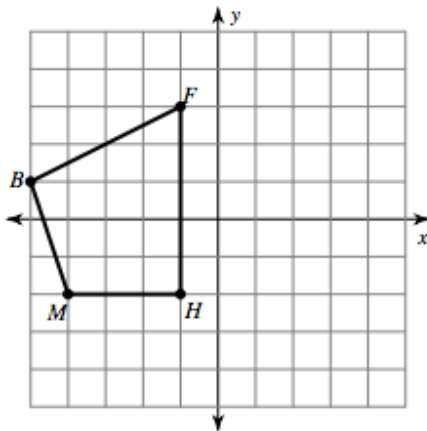


Q: _____ → Q': _____

H: _____ → H': _____

J: _____ → J': _____

13. Rotate 90 degrees counterclockwise about the origin.



B: _____ → B': _____

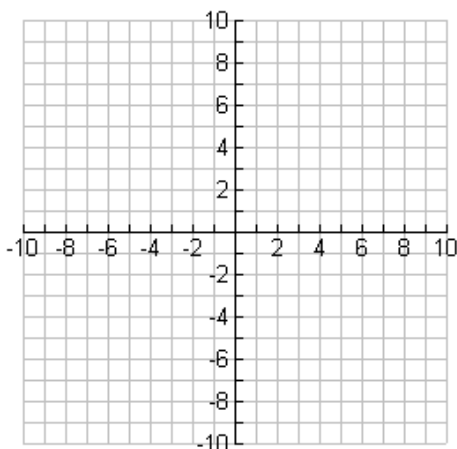
F: _____ → F': _____

H: _____ → H': _____

M: _____ → M': _____

14. Rotate 90 degrees clockwise about the origin.

U(1, -2), W(0, 2), K(3, 2), G(3, -3)



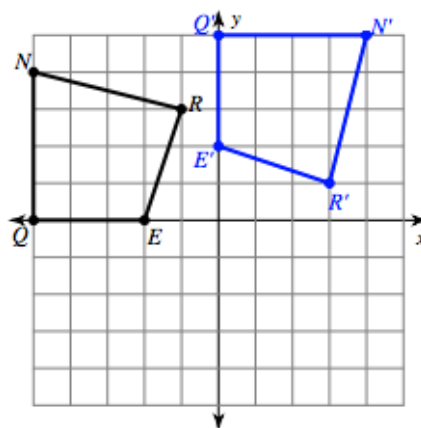
U': _____

W': _____

K': _____

G': _____

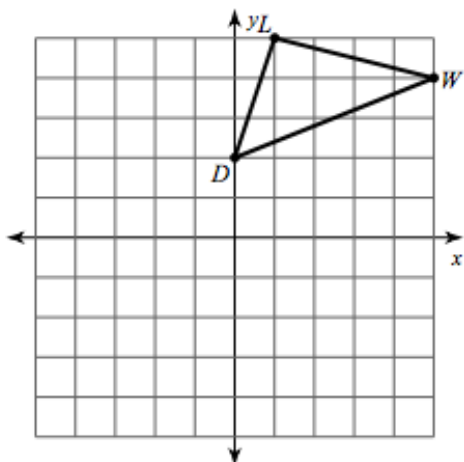
15. Write a rule to describe the rotation.



Dilations

For each transformation, record the original coordinates and the coordinates of the figure after the transformation. Then, graph the figure after the transformation.

16. Dilation of $\frac{1}{2}$



L: _____ \rightarrow L': _____

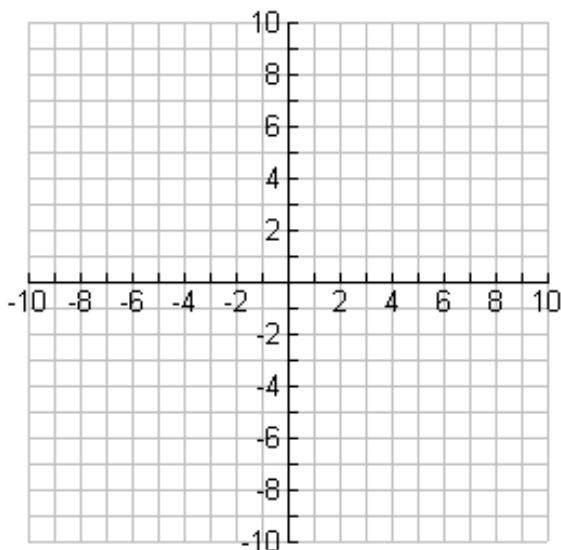
W: _____ \rightarrow W': _____

D: _____ \rightarrow D': _____

17. Find the coordinates of the image $A'B'C'D'$ with vertices $A(0, 0)$, $B(0, 3)$, $C(3, 3)$, and $D(3, 0)$ after a dilation with a scale factor of 4.

A': _____ B': _____ C': _____ D': _____

18. A triangle has coordinates $A(-2, -2)$, $B(4, 2)$, and $C(1, 4)$. Graph the triangle and its image $A'B'C'$ after a dilation with a scale factor of $\frac{3}{2}$. Give the coordinates of $A'B'C'$.



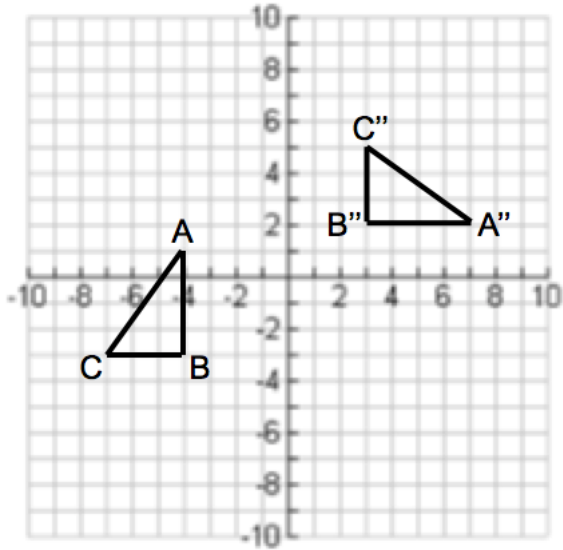
A': _____

B': _____

C': _____

Two-Move Transformations

19. Describe the move from $\triangle ABC$ to $\triangle A''B''C''$.



A: _____ \rightarrow A'': _____

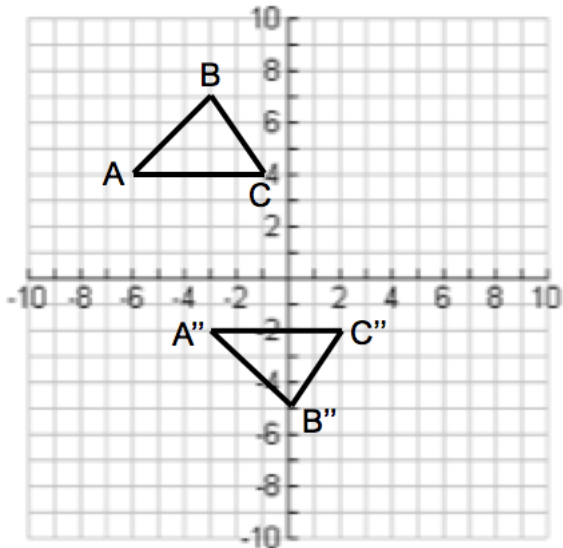
B: _____ \rightarrow B'': _____

C: _____ \rightarrow C'': _____

Move 1: _____

Move 2: _____

20. Describe the move from $\triangle ABC$ to $\triangle A''B''C''$.



A: _____ \rightarrow A'': _____

B: _____ \rightarrow B'': _____

C: _____ \rightarrow C'': _____

Move 1: _____

Move 2: _____
