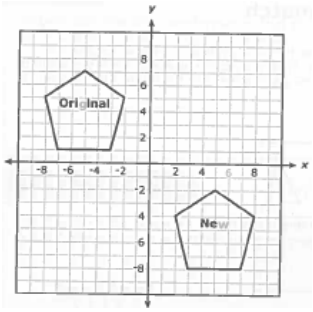
PRACTICE: LESSON 10.3 – REFLECTIONS W/ ALGEBRAIC RULE Name: _____

Learning Goal: I can ***reflect*** a figure and write the algebraic rule for the ***reflection***. **Meta de Aprendizaje**: *Puedo **reflejar** una figura y escribir la regla algebraica para la **reflexión**.*	**Language Goal:** I can write the algebraic rule for a ***reflection*** and justify my answer to a partner. **Lenguaje Objetivo**: *Puedo escribir la regla algebraica para una **reflexión** y justificar mi respuesta a un compañero.*

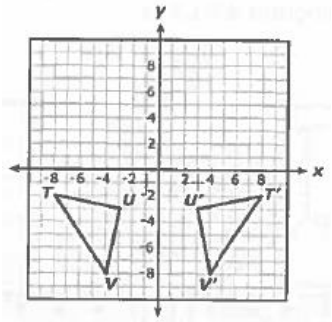
Directions: Use your notes from Lesson 10.1 and Lesson 10.3 to answer the following questions.

1. Which rule is the **ONLY** rule that adds or subtracts? _____
2. Which rule is the **ONLY** rule that multiplies? _____
3. Are the angles and side lengths congruent for **reflections**? Circle one: **YES** **NO** **SOMETIMES**
4. What is a dilation called that gets smaller? _____
5. What transformation is described by the rule $(x, y) \rightarrow (-x, y)$? _____
6. What transformation is described by the rule $(x, y) \rightarrow (-x, -y)$? _____
7. What transformation is described by the rule $(x, y) \rightarrow (\frac{1}{4}x, \frac{1}{4}y)$? _____
8. What transformation is described by the rule $(x, y) \rightarrow (x - 4, y + 2)$? _____

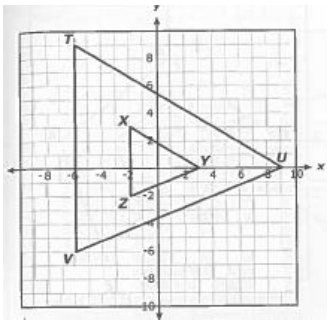
Problems 9 through 12: What transformation is represented by each graph?



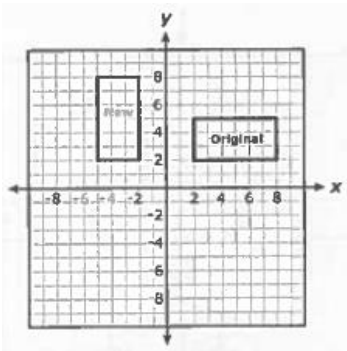
Answer: _____



Answer: _____



Answer: _____

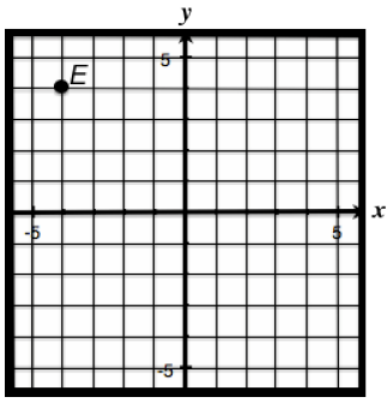


Answer: _____

Directions: **Reflect** the shape, if required. Determine the rule for the **reflection**.

1. Point E has coordinates of (-4 , 4). **Reflect** Point E ***across the y-axis***. What are the new coordinates for Point E'?

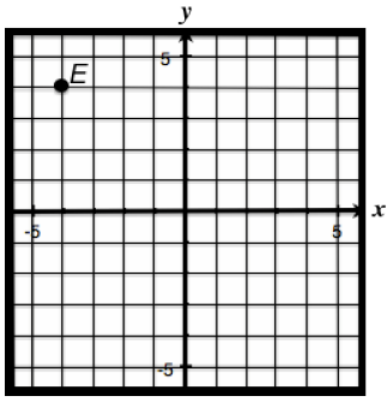
Point	(x , y) Coordinate
E	(-4 , 4)
E'	(,)



What is the rule for the **reflection**? $(x, y) \rightarrow$ (_____ , _____)

2. Point E has coordinates of (-4 , 4). **Reflect** Point E ***across the x-axis***. What are the new coordinates for Point E'?

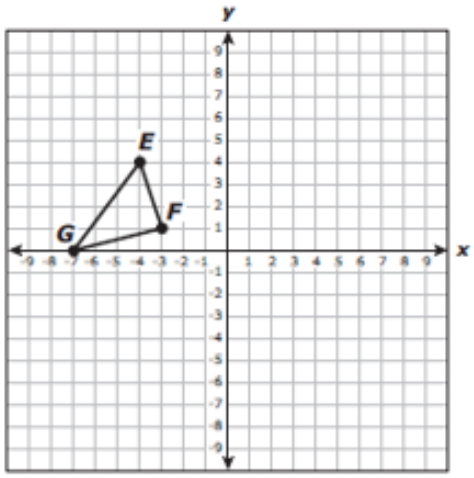
Point	(x , y) Coordinate
E	(-4 , 4)
E'	(,)



What is the rule for the **reflection**? $(x, y) \rightarrow (\_\_\_\_\_, \_\_\_\_\_)$

3. Triangle GEF has coordinates as shown below. What are the coordinates of Triangle GEF after a **reflection** ***across the x-axis***. Fill in the table.

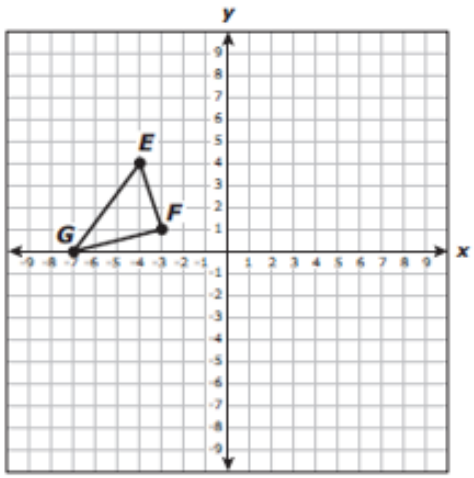
Point	(x , y) Coordinate
G	(-7 , 0)
G'	(,)
E	(-4 , 4)
E'	(,)
F	(-3 , 1)
F'	(,)



What is the rule for the **reflection**? $(x, y) \rightarrow (\_\_\_\_\_, \_\_\_\_\_)$

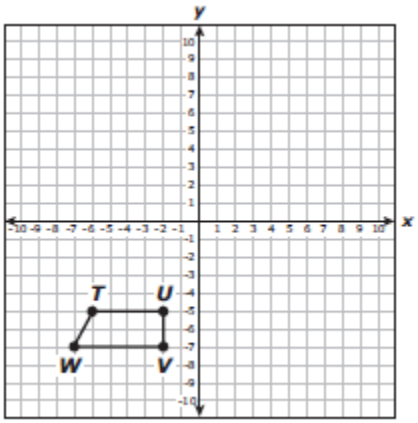
4. Triangle GEF has coordinates as shown below. What are the coordinates of Triangle GEF after a **reflection** ***across the y-axis***. Fill in the table.

Point	(x , y) Coordinate
G	(-7 , 0)
G'	(,)
E	(-4 , 4)
E'	(,)
F	(-3 , 1)
F'	(,)



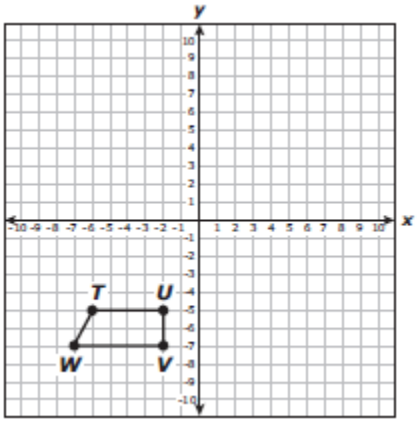
What is the rule for the **reflection**? $(x, y) \rightarrow (\_\_\_\_\_, \_\_\_\_\_)$

5. Trapezoid TUVW is as shown. If the vertices were **reflected** ***across the x-axis***, what would be the rule?



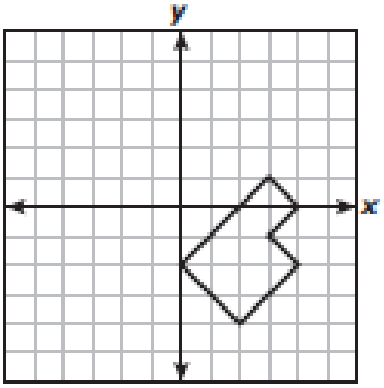
$(x, y) \rightarrow (\_\_\_\_\_, \_\_\_\_\_)$

6. Trapezoid TUVW is as shown. If the vertices were **reflected** ***across the y-axis***, what would be the rule?



$(x, y) \rightarrow (\_\_\_\_\_, \_\_\_\_\_)$

7. **Reflect** the figure ***across the y-axis***. Which of the following points could be one of the new vertices?

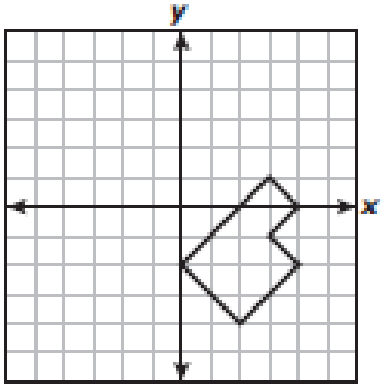


A. $(0, 2)$
B. $(0, -2)$
C. $(3, -1)$
D. $(2, -4)$

What is the rule for the **reflection**?

$(x, y) \rightarrow (\_\_\_\_\_, \_\_\_\_\_)$

8. **Reflect** the figure ***across the x-axis***. Which of the following points could be one of the new vertices?

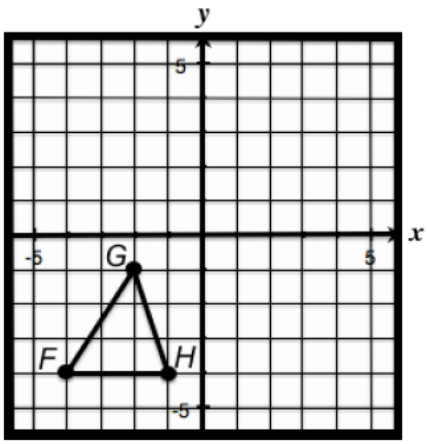


E. $(-4, 0)$
F. $(-3, -1)$
G. $(0, 2)$
H. $(4, -2)$

What is the rule for the **reflection**?

$(x, y) \rightarrow (\_\_\_\_\_, \_\_\_\_\_)$

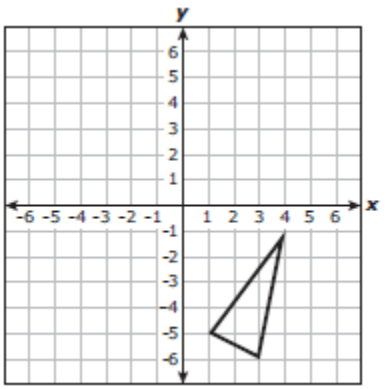
9. Triangle FGH was **reflected** to create Triangle F'G'H'.
As shown, Vertex F was at $(-4, -4)$.



If Vertex F' is now at $(4, -4)$, which rule describes this **reflection**?

I. $(x, y) \rightarrow (\, x + 8\, , y\,)$
J. $(x, y) \rightarrow (-1x\, , -1y\,)$
K. $(x, y) \rightarrow (\, x\, , -y\,)$
L. $(x, y) \rightarrow (\, -x\, , y\,)$

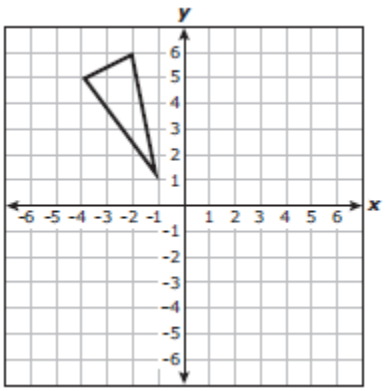
10. **Reflect** the triangle ***across the y-axis***.



What is the rule for the **reflection**?

$(x, y) \rightarrow (\,$ _____ , _____ $)$

11. **Reflect** the triangle ***across the x-axis***.



What is the rule for the **reflection**?

$(x, y) \rightarrow (\,$ _____ , _____ $)$

12. What are the **TWO** rules for **reflections**? $(x, y) \rightarrow (\,$ ____ , ____ $)$ and $(x, y) \rightarrow (\,$ ____ , ____ $)$

13. Which transformation has the **ONLY** rule that ADDS or SUBTRACTS? _____

14. Are the sides and angles of **reflection** congruent? **YES** **NO** **SOMETIMES**

15. Which transformation has the **ONLY** rule that multiplies? _____

16. What is a **dilation** called that ***gets bigger***? _____