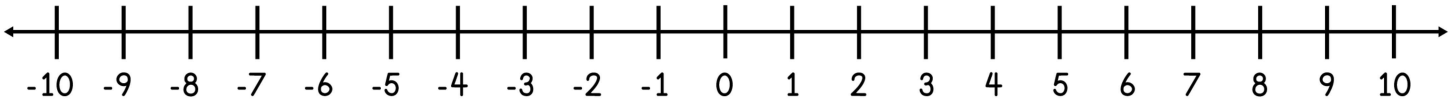


REFLECTIONS

Use the number line to determine the location of each description below.



a. the opposite of 6 is _____ b. the opposite of -5 is _____ c. the opposite of 2 is _____

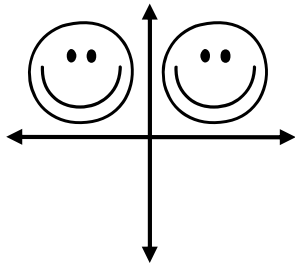
d. What patterns do you observe when determining the opposite of a number?

REFLECTIONS

- A reflection _____ a figure over a line of _____ in order to create a _____ image.
- Each reflected point of the figure should be the same distance from the line of _____ on the opposite side.
 - **Pre-image:** the image being reflected, _____
 - **Image:** the reflection of the pre-image, _____

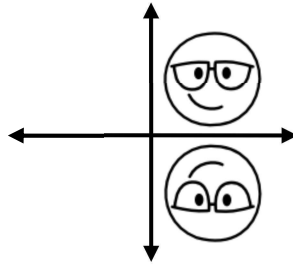
Highlight and identify the line of reflection in the following examples.

1.



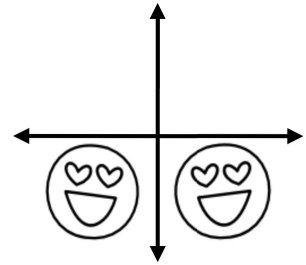
line of reflection: _____

2.



line of reflection: _____

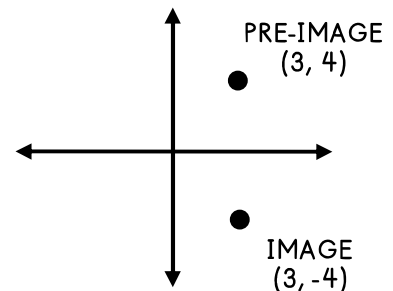
3.



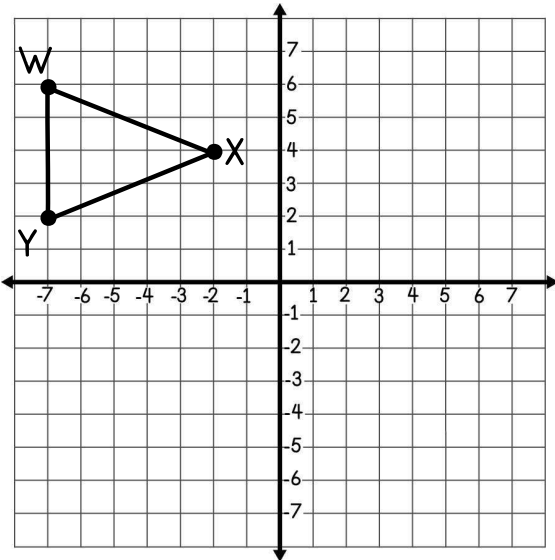
line of reflection: _____

4. Sylvia reflects the original points to create a new image shown at the right. Use the image to answer the questions below.

- What is the line of reflection?
- In what quadrant was the original point located?
- In what quadrant is the new image located?
- What do you notice about the ordered pairs?



5 Reflect triangle WXY over the y-axis. Then answer a-c.



a. Record the vertices of the pre-image and the image in the table.

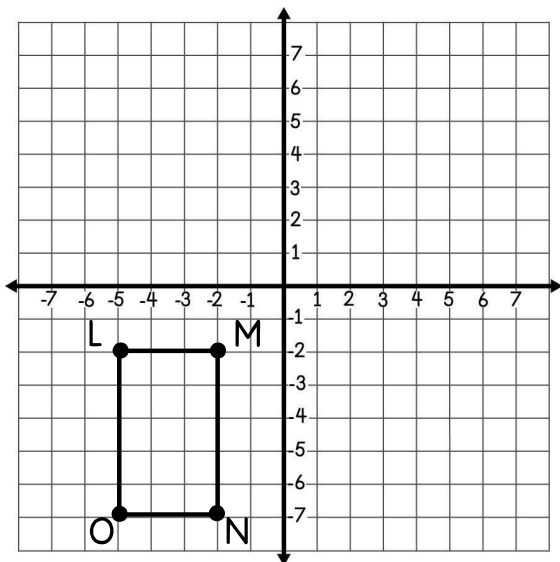
PRE-IMAGE	IMAGE

b. Identify the line of reflection.

c. Describe how the reflection affected the x and y-values of each vertex.

- x-values:
- y-values:

6 Reflect rectangle LMNO over the x-axis. Then answer a-c.



a. Record the vertices of the pre-image and the image in the table.

PRE-IMAGE	IMAGE

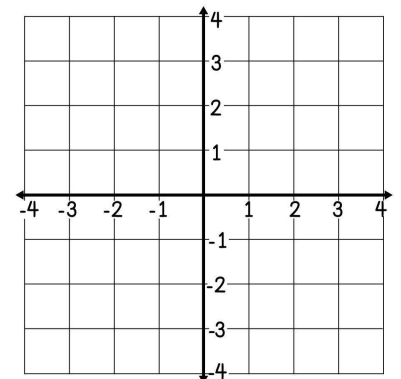
b. Identify the line of reflection.

c. Describe how the reflection affected the x and y-values of each vertex.

- x-values:
- y-values:

7. The pre-image of a triangle has vertices at $D(3, -1)$, $E(4, -3)$, and $F(2, -4)$. Nisha reflected the triangle over the y-axis and was asked to describe the location of the image. Do you agree or disagree with her statement? Use the graph at the right to help.

The image will be in quadrant III with vertices at $D'(3, 1)$, $E'(4, 3)$, and $F'(2, 4)$. The y-values stay the same when reflected across the y-axis.



REFLECTIONS

Apply your knowledge of reflections to answer each question below.

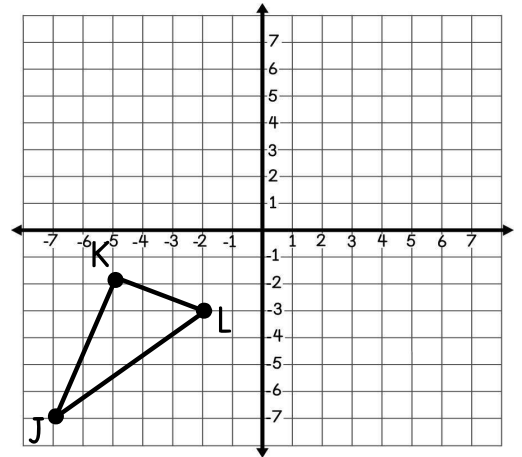
1 Use the graph of triangle JKL to answer a-b.

a. Reflect JKL over the x-axis. Record the coordinates of the original and new image below.

J _____ K _____ L _____

J' _____ K' _____ L' _____

b. Describe what happened to the x and y coordinates once they were reflected.



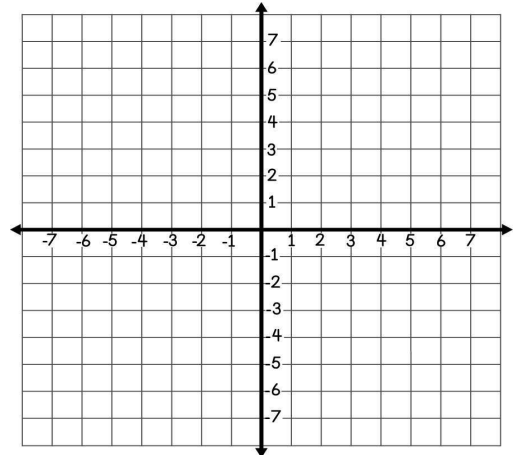
2 Use the coordinates of triangle QRS to answer a-b.

a. Graph and reflect QRS over the y-axis. Record the coordinates of the new image below.

Q (-5, 3) R (-3, 7) S (-1, 3)

Q' _____ R' _____ S' _____

b. Describe what happened to the x and y coordinates once they were reflected.



3 Mauricio and Jaden are playing battleship. The clues to the location of each of their four ships are listed below.

- Reflect trapezoid ABCD over the x-axis. Mauricio's ships are located at the vertices of A'B'C'D'.
- Reflect trapezoid WXYZ over the y-axis. Jaden's ships are located at the vertices of W'X'Y'Z'.

The winner must correctly identify the coordinate location of the other player's battleships. Who lost the game? Correct their mistakes.

MAURICIO

Jaden's ships are at
W'(-2, 8) X'(-4, 7)
Y'(-4, 6) Z'(-2, 5)

JADEN

Mauricio's ships are at
A'(-5, 3) B'(-6, 3)
C'(-7, 1) D'(-4, 1)

