LESSON MAKER PRO

Mirror Moves

Reflect polygons across the x-axis and y-axis.

GRADE 8 · 8.MG.3.b

8.MG.3.b "Given a preimage in the coordinate plane, identify the coordinates of the image of a polygon that has been reflected over the x- or y-axis."

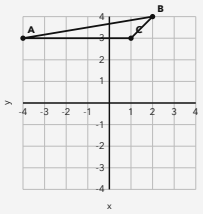
NAME _____ DATE _____

REFLECTION RULES

A reflection over the x-axis keeps x the same and changes the sign of y. A reflection over the y-axis keeps y the same and changes the sign of x.

WORKED EXAMPLE

Reflect triangle ABC over the x-axis. Write the image coordinates.



1. A is (-4, 3).
2. Keep x as -4.
3. Change y from 3 to -3.
4. Repeat for B and C.

Answer: A'(-4, -3), B'(2, -4), C'(1, -3)

PRACTICE 4 problems

1 Reflect P(-5, 2) over the y-axis.

ANSWER _____

2 Reflect triangle ABC over the x-axis: A(-3, -1), B(-1, -4), C(-4, -5).

ANSWER _____

3 Reflect triangle JKL over the y-axis: J(2, 4), K(5, 4), L(3, 1).

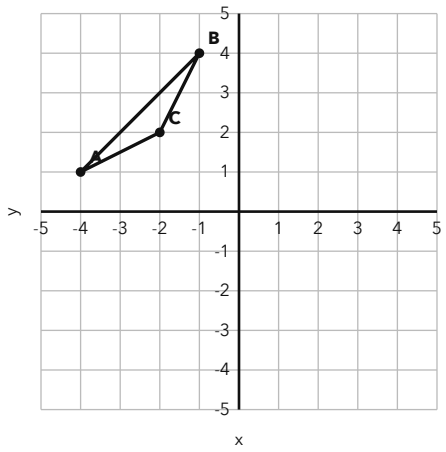
ANSWER _____

4 R(-5, 3) maps to R'(-5, -3). Name the axis of reflection.

ANSWER _____

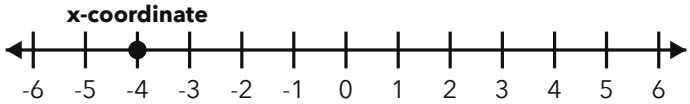
APPLY IT Show your work

1 A student designs a game logo using triangle ABC. Reflect the plotted logo over the y-axis.



ANSWER _____

2 In a coding game, a character is at (-4, 3). Its x-coordinate is shown on the number line. A mirror effect reflects the character over the y-axis. What is its new location?



ANSWER _____

CHALLENGE One step up

Quadrilateral WXYZ has vertices W(-2, 5), X(1, 5), Y(1, 2), and Z(-2, 2). Reflect it over the x-axis, then reflect the result over the y-axis. Write the final coordinates.

WORK SPACE AND ANSWER

ANSWER KEY

Mirror Moves

GRADE 8 · 8.MG.3.b

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Reflect P(-5, 2) over the y-axis.	**P'(5, 2)**
2	Reflect triangle ABC over the x-axis: A(-3, -1), B(-1, -4), C(-4, -5).	**A'(-3, 1), B'(-1, 4), C'(-4, 5)**
3	Reflect triangle JKL over the y-axis: J(2, 4), K(5, 4), L(3, 1).	**J'(-2, 4), K'(-5, 4), L'(-3, 1)**
4	R(-5, 3) maps to R'(-5, -3). Name the axis of reflection.	**x-axis**

PART 2 · APPLY IT

1. **A'(4, 1), B'(1, 4), C'(2, 2)** Change each x-coordinate to its opposite. Keep each y-coordinate unchanged.
2. **(4, 3)** A y-axis reflection changes the sign of the x-coordinate only.

CHALLENGE

W''(2, -5), X''(-1, -5), Y''(-1, -2), Z''(2, -2)

Accept coordinates written as ordered pairs with matching vertex labels. For the challenge, accept the final image coordinates in any vertex order if each label is correct.