Name_____ Date_____ Period_____

LESSON 7-5 · SESSION 2 · PRACTICE · FORM A

Reflecting Points Across Axes

Learning target – I can reflect a point across the x-axis or the y-axis and name the new coordinates. · 6.NS.C.6b

REMEMBER

- A **reflection** flips a point like a mirror image. Only **one** coordinate changes sign.
- Across the **x-axis**, y changes sign: (4, 1) becomes (4, −1). Across the **y-axis**, x changes sign: (4, 1) becomes (−4, 1).
- A point and its image are the same distance from the mirror: (−5, 2) and (5, 2) are 5 + 5 = 10 units apart.

WORKED EXAMPLE

Reflect (7, −2) across each axis separately.

Step 1 Across the x-axis: keep x = 7, change −2 to 2. Image: (7, 2).

Step 2 Across the y-axis: keep y = −2, change 7 to −7. Image: (−7, −2).

Answer **(7, 2) and (−7, −2)**

WORDS **reflection** *(reflexión)* · **x-axis** *(eje x)* · **y-axis** *(eje y)*

PRACTICE

show your work · label units

1. Write the image after each reflection.

a. (5, 3) across the x-axis _____

b. (−2, 8) across the y-axis _____

c. (7, −1) across the x-axis _____

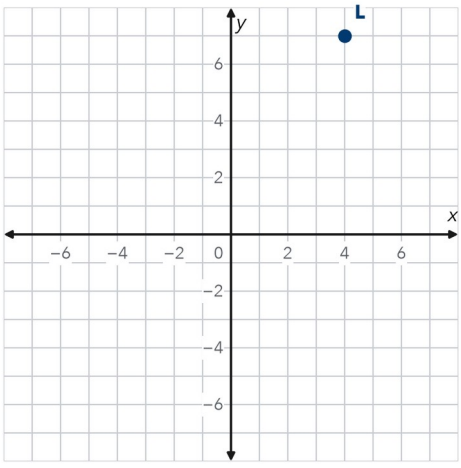
d. (−9, −4) across the y-axis _____

2. **Mirror Room.** A floor plan puts lamp L at (4, 7). One mirror lies along each axis.

Hint *Plot each image to check your answer.*

a. Across the x-axis: (___ , ___) Quadrant ___

b. Across the y-axis: (___ , ___) Quadrant ___



3. **Two Kites.** Kite A flies over (−6, 3). Kite B is its reflection across the y-axis. Where is Kite B? How far apart are the kites?

Hint *6 units to the mirror, then 6 more.*

Kite B, distance_____

4. **Stage Lights.** A light hangs over (−8, 12). A second light is its reflection across the x-axis. Where is it? How far apart are the lights?

Light 2, distance_____

5. **Which Mirror?** Point P is at (2, −7) and point Q is at (2, 7). Across which axis are they reflections? How do the coordinates show it?

Hint *Which coordinate changed sign?*

_____

_____

6. **Ben's Image.** Ben says reflecting (−3, 6) across the y-axis gives (−3, −6). What did he mix up? Write the correct image.

Hint *Across the y-axis, y stays the same.*

Show your work.

Image_____

7. **Double Flip.** A marker at (5, −8) reflects across the x-axis. Then that image reflects across the y-axis.

a. First image: _____

b. Final image: _____

c. Quadrant of the final image: _____

8. **Design Symmetry.** A designer puts a corner at A(3, 4) and wants matching corners in the other three quadrants.

a. Reflect A across the y-axis. _____

b. Reflect A across the x-axis. _____

c. Name the fourth corner. How did you find it? _____

FIND THE ERROR

explain the mistake, then fix it

9. **Lucia's Work.** To reflect (−1, 8) across the x-axis, Lucia flipped both signs and wrote (1, −8). Explain her mistake. Then write the correct image.

_____

_____

TEST PRACTICE

choose the best answer

10. Reflecting (4, −6) across the x-axis gives –

A (−4, −6) **B** (4, 6) **C** (−4, 6) **D** (6, −4)

11. Reflecting across the y-axis changes the sign of –

A the x-coordinate **B** the y-coordinate

C both coordinates **D** neither coordinate

SELF-CHECK CODE

find your answer · copy its letter into that problem's box · spell a math word

(4, −7)	(−3, −4)	x-axis	y-axis	(3, 6)	(6, 3)	(−3, −6)	24	(−5, 8)	(5, −3)
E	S	E	Z	C	F	Q	L	T	R

#1a	#2a	#3	#4	#5	#6	#7b	#8c

CHECK YOURSELF	☐ I can do this on my own	☐ I need a little help	☐ I have a question about #___