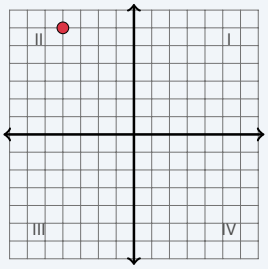
The Coordinate Plane

Name: _____	Date: _____	Score: _____ / 18

Quick Review and Helpful Hints

The coordinate plane has a horizontal x-axis and a vertical y-axis meeting at the *origin* $(0, 0)$. A point (x, y) tells you how far right or left (x) and how far up or down (y). The four *quadrants* are numbered I–IV counterclockwise, starting at the top-right.

▷ **Example:** In which quadrant is the point $(-2, 3)$? **Work:** The x-coordinate -2 is negative (left of center) and the y-coordinate 3 is positive (above center): upper-left. ★ **Answer:** Quadrant II



$(-2, 3)$ is in Quadrant II.

Practice Problems

Name the quadrant or axis, or answer as directed.

1. Quadrant of $(4, 5)$ _____
2. Quadrant of $(-2, 3)$ _____
3. Quadrant of $(-4, -1)$ _____
4. Quadrant of $(5, -2)$ _____
5. Quadrant of $(-6, -6)$ _____
6. Quadrant of $(3, -7)$ _____
7. Which axis is $(0, 4)$ on? _____
8. Which axis is $(-5, 0)$ on? _____
9. Quadrant of $(1, 8)$ _____
10. Quadrant of $(-3, 5)$ _____
11. $(2, -3)$ means right 2, then? _____
12. x-coordinate of $(7, -2)$ _____
13. y-coordinate of $(7, -2)$ _____
14. Coordinates of the origin _____

Word Problems

15. A treasure is 3 units right and 4 units up from the origin. Give its coordinates. _____
16. A point is in Quadrant III. What are the signs of its x- and y-coordinates? _____
17. Point A is at $(-2, 5)$. Reflect it across the y-axis. Give the new coordinates. _____
18. Point B is at $(4, -1)$. Reflect it across the x-axis. Give the new coordinates. _____

Answer Keys

1. I	**7.** y-axis	**13.** -2
2. II	**8.** x-axis	**14.** $(0, 0)$
3. III	**9.** I	**15.** $(3, 4)$
4. IV	**10.** II	**16.** both negative
5. III	**11.** down 3	**17.** $(2, 5)$
6. IV	**12.** 7	**18.** $(4, 1)$

Step-by-Step Explanations

1. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Both coordinates are positive (right and up): Quadrant I. So the final answer is I.

2. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $x < 0, y > 0$ (left and up): Quadrant II. So the final answer is II.

3. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Both are negative (left and down): Quadrant III. So the final answer is III.

4. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $x > 0$, $y < 0$ (right and down): Quadrant IV. So the final answer is IV.

5. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Both negative: Quadrant III. So the final answer is III.

6. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $x > 0, y < 0$: Quadrant IV. So the final answer is IV.

7. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is With $x = 0$, the point sits on the y-axis. So the final answer is y-axis.

8. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is With $y = 0$, the point sits on the x-axis. So the final answer is x-axis.

9. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Both positive: Quadrant I. So the final answer is I.

10. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $x < 0, y > 0$: Quadrant II. So the final answer is II.

11. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The y-coordinate -3 means go down 3. So the final answer is down 3.

12. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The first number is the x-coordinate: 7. So the final answer is 7.

13. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The second number is the y-coordinate: -2. So the final answer is -2.

14. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The origin is where the axes cross: $(0, 0)$. So the final answer is $(0, 0)$.

15. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Right 3 is $x = 3$, up 4 is $y = 4$: $(3, 4)$. So the final answer is $(3, 4)$.

16. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is In Quadrant III both coordinates are negative. So the final answer is both negative.

17. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Reflecting across the y-axis flips the sign of x: $(2, 5)$. So the final answer is $(2, 5)$.

18. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Reflecting across the x-axis flips the sign of y: $(4, 1)$. So the final answer is $(4, 1)$.

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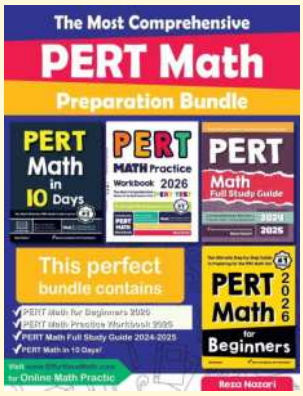

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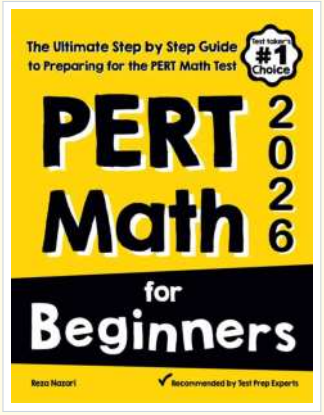

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