

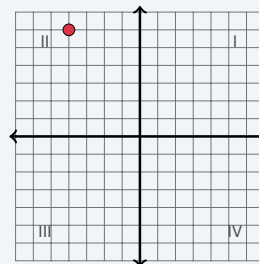
The Coordinate Plane

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

Word Problems

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



Answer Keys

- | | | |
|-------------------------------------|---|--|
| 1. <input type="text" value="I"/> | 7. <input type="text" value="y-axis"/> | 13. <input type="text" value="-2"/> |
| 2. <input type="text" value="II"/> | 8. <input type="text" value="x-axis"/> | 14. <input type="text" value="(0, 0)"/> |
| 3. <input type="text" value="III"/> | 9. <input type="text" value="I"/> | 15. <input type="text" value="(3, 4)"/> |
| 4. <input type="text" value="IV"/> | 10. <input type="text" value="II"/> | 16. <input type="text" value="both negative"/> |
| 5. <input type="text" value="III"/> | 11. <input type="text" value="down 3"/> | 17. <input type="text" value="(2, 5)"/> |
| 6. <input type="text" value="IV"/> | 12. <input type="text" value="7"/> | 18. <input type="text" value="(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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