

The Coordinate Plane

Name: _____ Date: _____ Score: _____ / 24

Q Quick Review

The **coordinate plane** is made of a horizontal ***x*-axis** and a vertical ***y*-axis** that cross at the **origin** (0, 0). A point is named by an **ordered pair** (*x*, *y*): the *x*-coordinate tells you how far *right* (+) or *left* (-), and the *y*-coordinate tells you how far *up* (+) or *down* (-). The axes split the plane into four **quadrants**: Quadrant I is (+, +), II is (-, +), III is (-, -), and IV is (+, -). Always start at the origin and read *x* first, then *y*.

◇ **Example:** In which quadrant is the point (-3, 5)?
 ⇒ Read the ordered pair carefully. The *x*-coordinate is -3, which is negative, so we move to the *left* of the origin. The *y*-coordinate is 5, which is positive, so we move *up*. Left and up together — that is the top-left region of the plane. The quadrant that is (-, +) is Quadrant II. So the point (-3, 5) lies in Quadrant II.

Answer: Quadrant II

PRACTICE

Name the quadrant or axis for each point.

- | | | | |
|-------------|-------|---|-------|
| 1. (4, 7) | _____ | 11. (0, -3) | _____ |
| 2. (-2, 6) | _____ | 12. (9, 0) | _____ |
| 3. (-5, -3) | _____ | 13. (0, 0) | _____ |
| 4. (8, -1) | _____ | 14. (2, -8) | _____ |
| 5. (3, 3) | _____ | 15. (-6, -6) | _____ |
| 6. (-7, 2) | _____ | 16. (-3, 8) | _____ |
| 7. (-1, -9) | _____ | 17. (7, 1) | _____ |
| 8. (6, -4) | _____ | 18. Start at origin, go right 5, up 2 | _____ |
| 9. (0, 5) | _____ | 19. Start at origin, go left 4, down 3 | _____ |
| 10. (-4, 0) | _____ | 20. Start at origin, go right 6, down 1 | _____ |

◆ Word Problems

21. A treasure map uses a coordinate grid. The treasure is 3 units left and 4 units down from the origin. What is its ordered pair, and which quadrant is it in? _____
22. On a city grid, the library is at (5, 0). Describe its location relative to the origin. _____
23. A drone starts at the origin and flies to (-2, 7). In which quadrant does it end up? _____
24. A school is plotted at (4, -6) on a map. Which quadrant is the school in? _____



Answer Keys

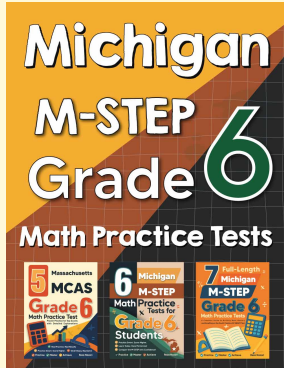
- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Quadrant I 2. Quadrant II 3. Quadrant III 4. Quadrant IV 5. Quadrant I 6. Quadrant II 7. Quadrant III 8. Quadrant IV 9. on the y-axis 10. on the x-axis 11. on the y-axis 12. on the x-axis | <ol style="list-style-type: none"> 13. the origin 14. Quadrant IV 15. Quadrant III 16. Quadrant II 17. Quadrant I 18. $(5, 2)$ 19. $(-4, -3)$ 20. $(6, -1)$ 21. $(-3, -4)$, Quadrant III 22. on the x-axis, 5 units right 23. Quadrant II 24. Quadrant IV |
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Step-by-Step Explanations

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|---|--|
| <ol style="list-style-type: none"> 1. Both coordinates are positive $(+, +)$, so it is Quadrant I. 2. Negative x, positive y is $(-, +)$, so Quadrant II. 3. Both coordinates are negative $(-, -)$, so Quadrant III. 4. Positive x, negative y is $(+, -)$, so Quadrant IV. 5. Both positive $(+, +)$ puts the point in Quadrant I. 6. Negative x, positive y is $(-, +)$ — Quadrant II. 7. Both negative $(-, -)$ puts the point in Quadrant III. 8. Positive x, negative y is $(+, -)$ — Quadrant IV. 9. When $x = 0$, the point sits right on the y-axis. 10. When $y = 0$, the point sits right on the x-axis. 11. With $x = 0$, the point is on the y-axis, below the origin. 12. With $y = 0$, the point is on the x-axis, right of the origin. 13. The point $(0, 0)$ is where the axes cross — the origin. 14. Positive x, negative y is $(+, -)$ — Quadrant IV. | <ol style="list-style-type: none"> 15. Both negative $(-, -)$ — Quadrant III. 16. Negative x, positive y is $(-, +)$ — Quadrant II. 17. Both positive $(+, +)$ — Quadrant I. 18. Right 5 is $x = 5$ and up 2 is $y = 2$, giving $(5, 2)$. 19. Left 4 is $x = -4$ and down 3 is $y = -3$, giving $(-4, -3)$. 20. Right 6 is $x = 6$ and down 1 is $y = -1$, giving $(6, -1)$. 21. Left 3 gives $x = -3$ and down 4 gives $y = -4$, so the point $(-3, -4)$ is in Quadrant III, where both coordinates are negative. 22. Since $y = 0$, the library sits right on the x-axis, 5 units to the right of the origin. 23. The point $(-2, 7)$ has negative x and positive y, which is the $(-, +)$ region — Quadrant II. 24. With positive x and negative y, the point $(4, -6)$ is in the $(+, -)$ region — Quadrant IV. |
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