

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

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