

Understanding the Coordinate Plane

Grade 5 Math • Section 10.1

Name: _____

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Quick Review and Helpful Hints

Coordinate plane: Two perpendicular number lines called **axes**. Horizontal: x -axis. Vertical: y -axis. They meet at the **origin** $(0, 0)$.

Ordered pair (x, y) : The first number tells how far to go **right** (along x); the second tells how far to go **up** (along y).

In Grade 5, we work in the **first quadrant** (both coordinates ≥ 0).

Example: Plot and name the point $(3, 5)$.

Start at the origin. Move 3 units to the right along the x -axis. Then move 5 units up. Mark the point. This is $(3, 5)$. The x -coordinate is 3 and the y -coordinate is 5.

Answer: Right 3, up 5

Practice Problems

Write the ordered pair for each description, or describe the location.

- Right 4, up 2: _____
- Right 0, up 7: _____
- Right 6, up 0: _____
- Right 5, up 5: _____
- $(2, 8)$: go right _____, up _____
- $(0, 0)$ is called the _____
- $(7, 3)$: the x -coordinate is _____
- $(1, 9)$: the y -coordinate is _____
- Right 10, up 4: _____
- $(3, 6)$ and $(6, 3)$: Are these the same point? _____
- A point is on the x -axis at 8. Ordered pair: _____
- A point is on the y -axis at 5. Ordered pair: _____

Word Problems

- On a map, a school is at $(2, 3)$ and a library is at $(2, 7)$. Describe how to get from the school to the library. How many units apart are they? _____
- Sara says $(4, 5)$ and $(5, 4)$ are the same point because they use the same numbers. Is she correct? Explain. _____



Answer Keys

- | | |
|-----------|-------------------|
| 1. (4, 2) | 8. 9 |
| 2. (0, 7) | 9. (10, 4) |
| 3. (6, 0) | 10. No |
| 4. (5, 5) | 11. (8, 0) |
| 5. 2, 8 | 12. (0, 5) |
| 6. origin | 13. up 4 units; 4 |
| 7. 7 | 14. No |

Step-by-Step Explanations

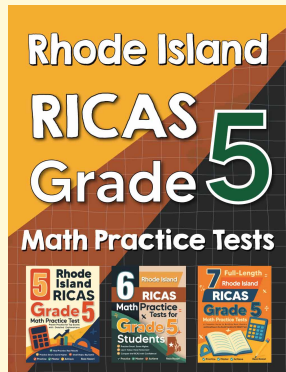
- Start with the main idea. For the coordinate plane, right gives the x -coordinate and up gives the y -coordinate. The first coordinate tells how far to move right, and the second tells how far to move up.
- Keep the work tidy. For the coordinate plane, no movement right means $x = 0$; up 7 means $y = 7$. Switching the coordinates usually changes the point, so order matters.
- Look at what the numbers mean. For the coordinate plane, right 6 and up 0 gives (6, 0). A table of ordered pairs makes a graphing pattern much easier to follow.
- Use the setup first. For the coordinate plane, right 5 and up 5 gives (5, 5). The first coordinate tells how far to move right, and the second tells how far to move up.
- Check the size of the answer. For the coordinate plane, in (2, 8), $x = 2$ and $y = 8$. Switching the coordinates usually changes the point, so order matters.
- Match the operation to the words. For the coordinate plane, the point (0, 0) is the origin. A table of ordered pairs makes a graphing pattern much easier to follow.
- Write the important values first. For the coordinate plane, the first coordinate is the x -coordinate. The first coordinate tells how far to move right, and the second tells how far to move up.

- Follow the pattern carefully. For the coordinate plane, the second coordinate is the y -coordinate. Switching the coordinates usually changes the point, so order matters.
- Start with the main idea. For the coordinate plane, right 10 and up 4 gives (10, 4). A table of ordered pairs makes a graphing pattern much easier to follow.
- Keep the work tidy. For the coordinate plane, the order matters; (3, 6) and (6, 3) are different points. The first coordinate tells how far to move right, and the second tells how far to move up.
- Look at what the numbers mean. For the coordinate plane, a point on the x -axis has $y = 0$. Switching the coordinates usually changes the point, so order matters.
- Use the setup first. For the coordinate plane, a point on the y -axis has $x = 0$. A table of ordered pairs makes a graphing pattern much easier to follow.
- Check the size of the answer. For the coordinate plane, the x -coordinate stays 2 and y changes from 3 to 7. The first coordinate tells how far to move right, and the second tells how far to move up.
- Match the operation to the words. For the coordinate plane, the first number tells right-left position and the second tells up-down position, so (4, 5) and (5, 4) differ. Switching the coordinates usually changes the point, so order matters.



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