Understanding the Coordinate Plane

Grade 5 Math • Section 10.1

Name: _____	Date: _____	Score: _____ / 14

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.

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

Word Problems

13. 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?

_____

14. Sara says $(4, 5)$ and $(5, 4)$ are the same point because they use the same numbers. Is she correct? Explain.

_____

Answer Keys

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

Step-by-Step Explanations

1. 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.

2. 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.

3. 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.

4. 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.

5. 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.

6. 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.

7. 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.

8. 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.

9. 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.

10. 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.

11. 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.

12. 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.

13. 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.

14. 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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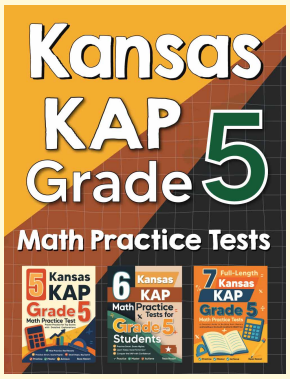

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