

1-4 Study Guide and Intervention

Ordered Pairs and Relations

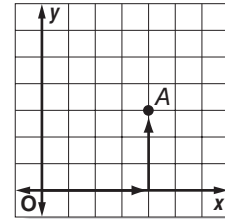
Ordered Pairs In mathematics, a **coordinate system** is used to locate points. The horizontal number line is called the **x-axis** and the vertical number line is called the **y-axis**. The point where the two axes intersect is the **origin** (0, 0). An **ordered pair** of numbers is used to locate points in the coordinate plane. The point (4, 3) has an **x-coordinate** of 4 and a **y-coordinate** of 3.

Example 1 Graph A(4, 3) on the coordinate plane.

Step 1 Start at the origin.

Step 2 Since the x-coordinate is 4, move 4 units to the right.

Step 3 Since the y-coordinate is 3, move 3 units up. Draw a dot.

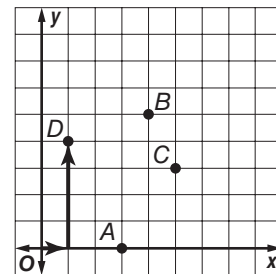


Example 2 Write the ordered pair that names point D.

Step 1 Start at the origin.

Step 2 Move right on the x-axis to find the x-coordinate of point D, which is 1.

Step 3 Move up the y-axis to find the y-coordinate, which is 4.

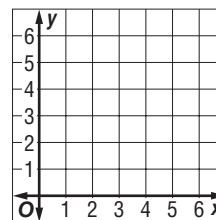


The ordered pair for point D is (1, 4).

Exercises

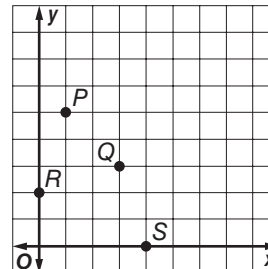
Graph each ordered pair on the coordinate plane.

- | | |
|------------|------------|
| 1. A(4, 1) | 2. B(2, 0) |
| 3. C(1, 3) | 4. D(5, 2) |
| 5. E(0, 3) | 6. F(6, 4) |



Refer to the coordinate plane shown at the right. Write the ordered pair that names each point.

- | | |
|------|-------|
| 7. P | 8. Q |
| 9. R | 10. S |



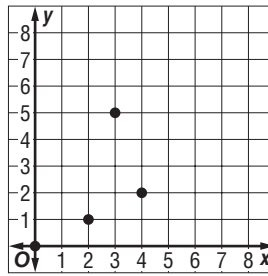
1-4 Study Guide and Intervention *(continued)*

Ordered Pairs and Relations

Relations A **relation** is a set of ordered pairs, such as $\{(0, 3), (1, 2), (3, 6), (7, 4)\}$. A relation can also be shown in a table or a graph. The set of x -coordinates is the **domain** of the relation, while the set of y -coordinates is the **range** of the relation.

Example Express the relation $\{(0, 0), (2, 1), (4, 2), (3, 5)\}$ as a table and as a graph. Then determine the domain and range.

x	y
0	0
2	1
4	2
3	5



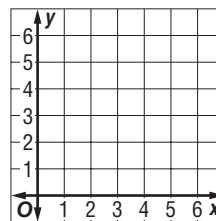
The domain is $\{0, 2, 4, 3\}$, and the range is $\{0, 1, 2, 5\}$.

Exercises

Express each relation as a table and as a graph. Then determine the domain and range.

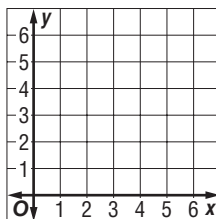
1. $\{(4, 6), (0, 3), (1, 4)\}$

x	y



2. $\{(2, 5), (5, 3), (2, 2)\}$

x	y



3. $\{(1, 2), (3, 4), (5, 6)\}$

x	y

