

Algebra: Ordered Pairs and Functions

MAIN IDEA

- Use ordered pairs to locate points and organize data.

BUILD YOUR VOCABULARY (pages 86–87)

The **coordinate plane** is formed when two intersect at their zero points. This point is called the **origin**.

The number line is the **x-axis** and the

number line is the **y-axis**.

Ordered pairs name points on the coordinate plane. The

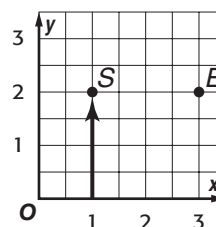
number in an ordered pair is the **x-coordinate**,

and the number is the **y-coordinate**.

EXAMPLE Name Points Using Ordered Pairs

1 Write the ordered pair that names point S.

Step 1 Start at the origin. Move right along the until you are under point S. The **x-coordinate** of the ordered pair is .

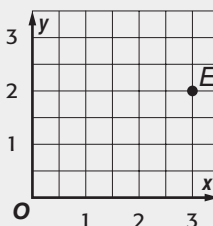


Step 2 Now move up until you reach point S. The **y-coordinate** is .

So, point S is named by the ordered pair .

Check Your Progress

Write the ordered pair that names point E.

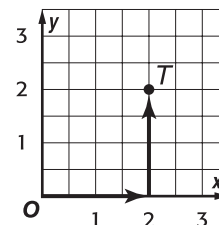


BUILD YOUR VOCABULARY (pages 86–87)

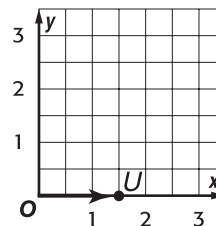
To **graph** a point means to place a dot at the point named by an .

EXAMPLES Graphing Ordered Pairs**1** Graph the point $T(2, 2)$.

- Start at the origin.
- Move units to the right on the x -axis.
- Then move units up to locate the point.
- Draw a dot and label the dot .

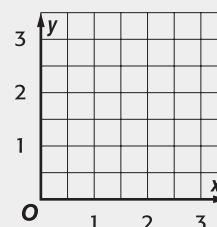
**2** Graph the point $U(1\frac{1}{2}, 0)$.

- Start at the origin.
- The value $1\frac{1}{2}$ is halfway between and . So on the x -axis, move halfway between and .
- Move units on the y -axis.
- Draw a dot and label the dot .



Check Your Progress Graph and label each point on a coordinate plane.

- $F(0, 1)$
- $G(2, 2\frac{1}{2})$
- $H(3, 1.5)$



EXAMPLES

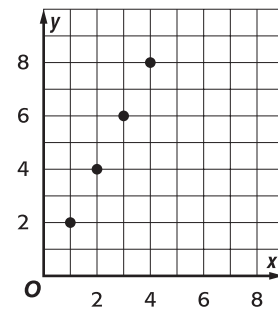
- 4 PETS** Amelia feeds her dog, Buster, 2 cups of food each day. Amelia made this table to show how much food Buster eats for 1, 2, 3, and 4 days. List this information as ordered pairs (days, food).

Days	Food (cups)
1	2
2	4
3	6
4	8

The ordered pairs are

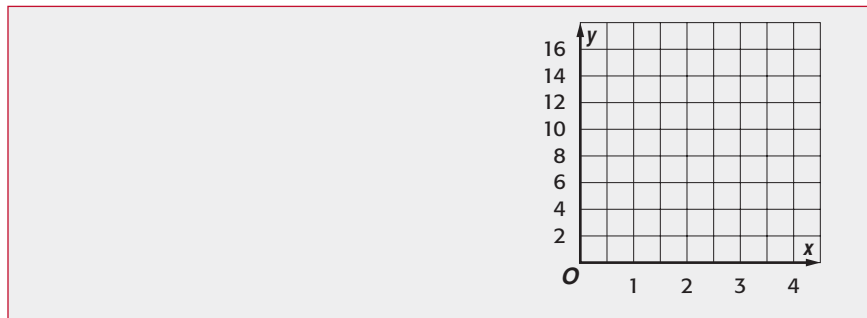
- 5** Graph the ordered pairs in Example 3. Then describe the graph.

The points

**Check Your Progress TABLES**

Jordan is planning to have a party. The table shows the number of guests he can invite if he sets up 1, 2, 3, and 4 tables. List this information as ordered pairs (tables, guests). Graph the ordered pairs. Then describe the graph.

Tables	Guests
1	4
2	8
3	12
4	16

**HOMEWORK ASSIGNMENT**

Page(s):

Exercises: