1.7 Represent Functions as Graphs

Before	You represented functions as rules and tables.
Now	You will represent functions as graphs.
Why?	So you can describe sales trends, as in Example 4.

Key Vocabulary
• **function,** *p. 35*
• **domain,** *p. 35*
• **range,** *p. 35*

REVIEW THE COORDINATE PLANE
For help with the coordinate plane, see p. 921.

You can use a graph to represent a function. Given a table that represents a function, each corresponding pair of input and output values forms an ordered pair of numbers that can be plotted as a point. The x-coordinate is the input. The y-coordinate is the output.

Table

Input, x	Output, y
1	2
2	3
4	5

Ordered Pairs

(input, output)

(1, 2)

(2, 3)

(4, 5)

Graph
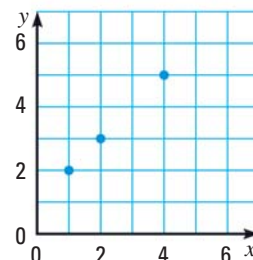
The horizontal axis of the graph is labeled with the input variable. The vertical axis is labeled with the output variable.
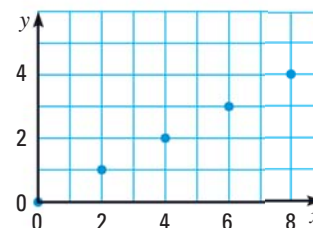
EXAMPLE 1 Graph a function

Graph the function $y = \frac{1}{2}x$ with domain 0, 2, 4, 6, and 8.

Solution

STEP 1 **Make** an input-output table.

x	0	2	4	6	8
y	0	1	2	3	4

STEP 2 **Plot** a point for each ordered pair (x, y).

✓ **GUIDED PRACTICE** for Example 1

1. Graph the function $y = 2x - 1$ with domain 1, 2, 3, 4, and 5.