LESSON
12-1

Graphing on the Coordinate Plane
Reteach

Each quadrant of the coordinate plane has a unique combination of positive and negative signs for the *x*-coordinates and *y*-coordinates as shown here.

Quadrant	*x*-coordinate	*y*-coordinate
I	+	+
II	–	+
III	–	–
IV	+	–

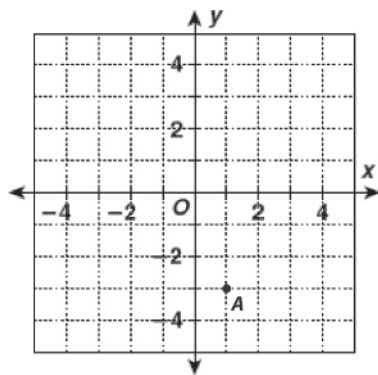Use these rules when naming points on the coordinate plane.

Example 1

Draw the point *A*(1, –3) on the coordinate grid.

Solution

According to the table, this point will be in Quadrant IV.

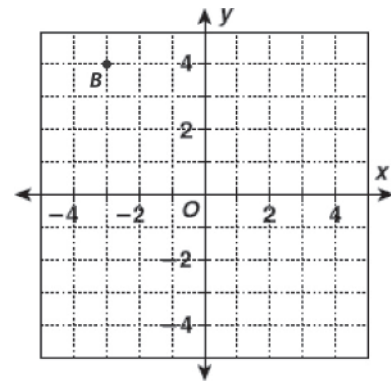So, go to the *right* (+) one unit, and go *down* (–) three units.

Example 2

What are the coordinates of point *B*?

Solution

According to the table, this point will have a negative *x*-coordinate and a positive *y*-coordinate.

Point *B* is 3 three units to the *left* (–) and four units *up* (+). So the coordinates of point *B* are (–3, 4).

Add the correct sign for each point's coordinates.

1. (____ 3, ____ 4) in

   Quadrant II

2. (____ 2, ____ 5) in

   Quadrant IV

3. (____ 9, ____ 1) in

   Quadrant I

4. In which quadrant is the point (0, 7) located? Explain your answer.

   _____

LESSON 12-2

Independent and Dependent Variables in Tables and Graphs
Reteach

In a table, the *independent variable* is often represented by *x*. The *dependent variable* is often represented by *y*. Look at this example.

x	0	1	2	3	4	5	6	7
y	4	5	6	7	8	9	10	?

What *y* value goes for the question mark?

Step 1   Notice that 4 is added to each value of *x* to give the *y* value.

Step 2   So, add 4 to 7. What does this give? $4 + 7 = 11$

On a chart or graph,
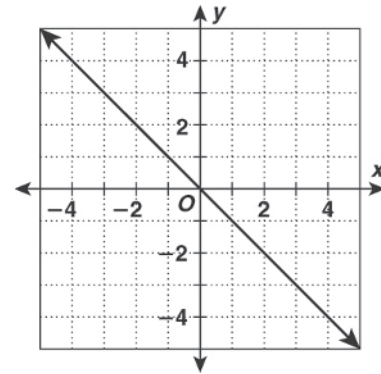
• the *x*-axis is usually used for the *independent variable*, and

• the *y*-axis is usually used for the *dependent variable*.

Look at the example. ⟶

How does *y* depend on *x*?

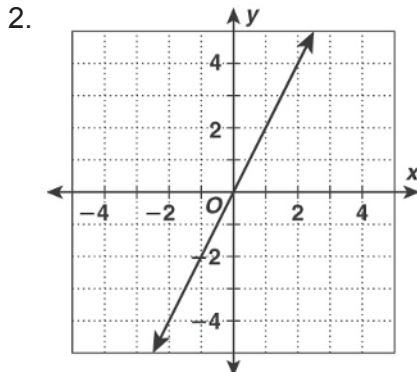**Step 1**   Each value of *y* is the opposite of the value of *x*.

Step 2   What equation shows this fact?
$y = -x$

Give the relationship between *x* and *y*.

1.

x	1	2	3	4	5
y	3	4	5	6	7

_____

2.

a. What is *y* when $x = 2$?

_____

b. What value of *x* gives $y = -2$?

_____

c. Write the equation for the graph.

_____