

4.1

Plot Points in a Coordinate Plane

Goal • Identify and plot points in a coordinate plane.

Your Notes

VOCABULARY

Quadrant

Example 1 Name points in a coordinate plane

Give the coordinates of the point.

a. A

b. B

Solution

a. Point A is ___ units to the ___ of the origin and ___ units ___.

The x-coordinate is ___.

The y-coordinate is ___.

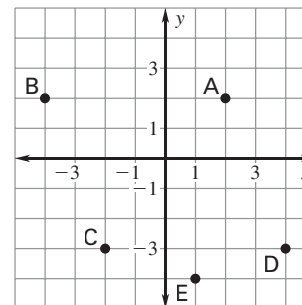
The coordinates are _____.

b. Point B is ___ units to the ___ of the origin and ___ units ___.

The x-coordinate is _____.

The y-coordinate is ___.

The coordinates are _____.



Points in Quadrant I have two positive coordinates. Points in the other three quadrants have at least one negative coordinate.

Checkpoint Complete the following exercise.

1. Use the coordinate plane in Example 1 to give the coordinates of points C, D, and E.

Example 2 Plot points in a coordinate plane

Plot the point in a coordinate plane. Describe the location of the point.

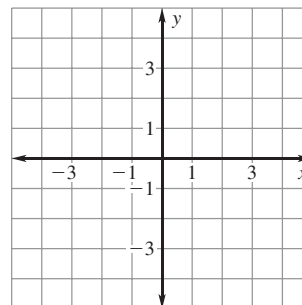
- a. $A(0, 3)$ b. $B(1, -2)$ c. $C(-3, -4)$

Solution

- a. Begin at the _____.
 Move ____ units _____.
 Point A is on the _____.

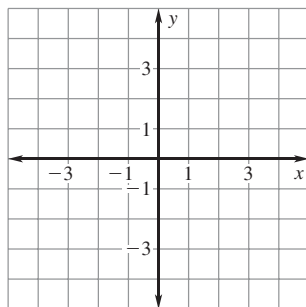
- b. Begin at the _____.
 Move ____ unit to the _____.
 Move ____ units _____.
 Point B is in Quadrant _____.

- c. Begin at the _____.
 Move ____ units to the _____.
 Move ____ units _____.
 Point C is in Quadrant _____.

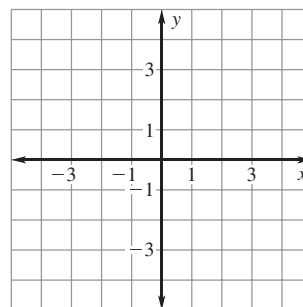


✔ **Checkpoint** Plot the point in a coordinate plane. Describe the location of the point.

2. $A(-4, -4)$



3. $B(2, 0)$



Your Notes

Example 3 Graph a function

Graph the function $y = x + 1$ with domain $-2, -1, 0, 1, 2$. Then identify the range of the function.

Solution

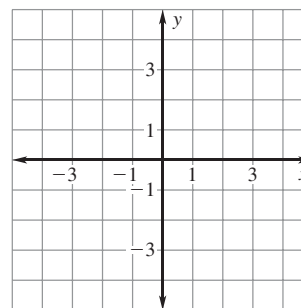
Step 1 Make a table.

x	$y = x + 1$
-2	$y = -2 + 1 = \underline{\quad}$
-1	$y = -1 + 1 = \underline{\quad}$
0	$y = 0 + 1 = \underline{\quad}$
1	$y = 1 + 1 = \underline{\quad}$
2	$y = 2 + 1 = \underline{\quad}$

Step 2 List the ordered pairs:

$(-2, \underline{\quad}), (-1, \underline{\quad}), (0, \underline{\quad}), (1, \underline{\quad}), (2, \underline{\quad})$.

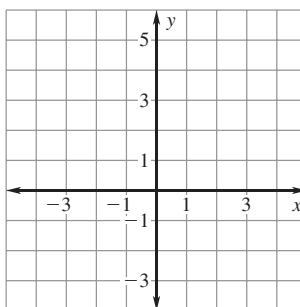
Then graph the function.



Step 3 Identify the range: $\underline{\hspace{2cm}}$.

✔ **Checkpoint** Complete the following exercise.

4. Graph the function $y = -\frac{1}{2}x + 3$ with domain $-4, -2, 0, 2, \text{ and } 4$. Then identify the range.



Homework