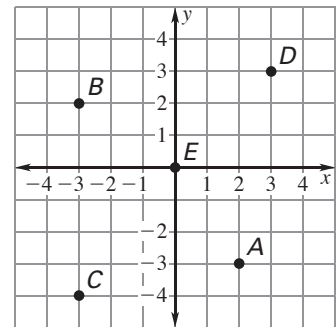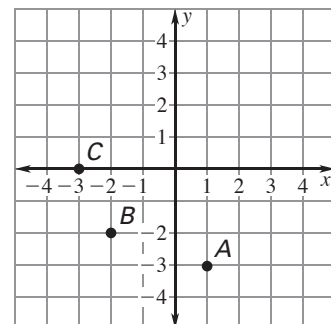Name _____   Date _____

Study Guide
For use with the lesson "Plot Points in a Coordinate Plane"

GOAL **Identify and plot points in a coordinate plane.**

> ### Vocabulary
> The coordinate plane can be divided into four regions called
> **quadrants,** labeled I, II, III, and IV.

EXAMPLE 1 ## Name points in a coordinate plane

Give the coordinates of the point.

a. A **b.** B

Solution

a. Point A is 2 units to the right of the origin and
3 units down. So, the x-coordinate is 2, and the
y-coordinate is -3. The coordinates are $(2, -3)$.

b. Point B is 3 units to the left of the origin and
2 units up. So, the x-coordinate is -3, and the
y-coordinate is 2. The coordinates are $(-3, 2)$.

Exercises for Example 1

**Use the coordinate plane in Example 1 to give the coordinates of
the point.**

1. C **2.** D **3.** E

EXAMPLE 2 ## Plot points in a coordinate plane

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

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

Solution

a. Begin at the origin. First move 1 unit to
the right, then 3 units down. Point A is in
Quadrant IV.

b. Begin at the origin. First move 2 units to
the left, then 2 units down. Point B is in
Quadrant III.

c. Begin at the origin. First move 3 units to
the left. Point C is on the x-axis.

Study Guide *continued*
For use with the lesson "Plot Points in a Coordinate Plane"

Exercises for Example 2

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

4. $A(3, 5)$ **5.** $B(-1, -4)$ **6.** $C(4, -2)$

EXAMPLE 3 ### Graph a function

Graph the function $y = \frac{1}{2}x + 2$ with domain -6, -4, -2, 0, and 2. Then identify the range of the function.

Solution

STEP 1 **Make** a table by substituting the domain values into the function.

x	$y = \frac{1}{2}x + 2$
-6	$y = \frac{1}{2}(-6) + 2 = -1$
-4	$y = \frac{1}{2}(-4) + 2 = 0$
-2	$y = \frac{1}{2}(-2) + 2 = 1$
0	$y = \frac{1}{2}(0) + 2 = 2$
2	$y = \frac{1}{2}(2) + 2 = 3$

STEP 2 **List** the ordered pairs: $(-6, -1)$, $(-4, 0)$, $(-2, 1)$, $(0, 2)$, and $(2, 3)$. Then graph the function.
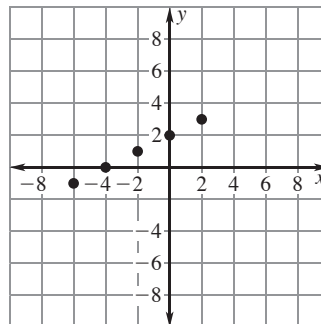
STEP 3 **Identify** the range. The range consists of the y-values from the table: -1, 0, 1, 2, and 3.

Exercise for Example 3

7. Graph the function $y = -2x + 3$ with domain -2, -1, 0, 1, and 2. Then identify the range of the function.