SKILL 15: The Coordinate Plane
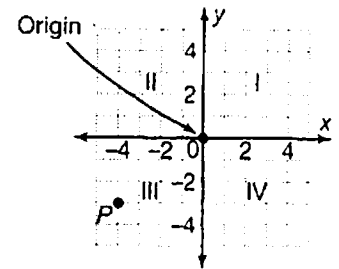
The *x-y* coordinate plane is based on two number lines. The horizontal line is the **x-axis**, and the vertical line is the **y-axis**. They intersect at the zero point on each number line. This point is called the **origin**. The axes divide the plane into four **quadrants**.

Any point, *P*, can be described by an **ordered pair**. The first number, the **x-coordinate**, tells how far to the left (for a negative number) or to the right (for a positive number) of the origin the point is. The **y-coordinate** tells how far up (for a positive number) or down (for a negative number) the point is. The origin is at (0, 0).

Example 1

What point is described by (−3, 4)?

(−3, 4) ⌐———— Move left 3 units.

(−3, 4) ↑———— Move up 4 units.

(−3, 4) describes point *A*.
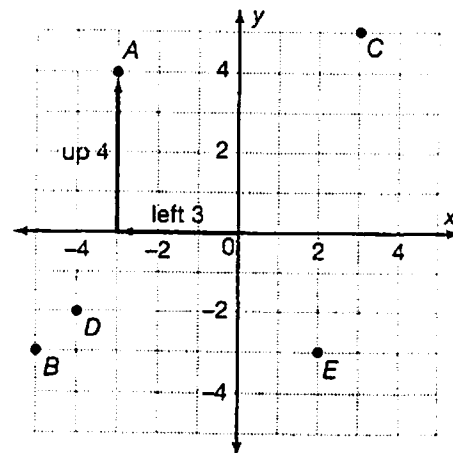
Example 2

Find the coordinates of point *B*.

Point *B* is located 5 units to the left of the origin (−5 on the *x*-axis) and 3 units down (−3 on the *y*-axis).

So, the coordinates of point *B* are (−5, −3).

Guided Practice

Refer to the diagram to the right of Examples 1 and 2.

1. What point is described by (−4, −2)?

Start at the origin.

Move _____ 4 units,
　　　　(left/right)

then move _____ 2 units.
　　　　　　　(up/down)

You come to point _____.

2. What are the coordinates of point *C*?

Start at the origin. To get to point *C*,

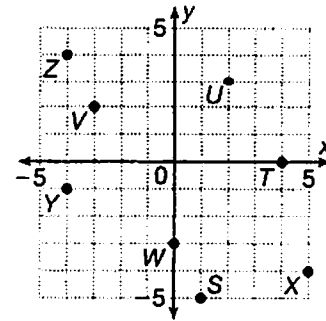move _____ _____ units, then
　　(left/right) (how many?)

move _____ _____ units. The
　　(up/down) (how many?)

coordinates of point *C* are (____, ____).

SKILL 15: Practice

Find the coordinates of each point.

1. S _____

2. T _____

3. U _____

4. V _____

5. W _____

6. X _____

7. Y _____

8. Z _____

Name the point that has the given coordinates.

9. (2, −4) _____

10. (0, 4) _____

11. (−3, 2) _____

12. (0, 0) _____

13. (−2, 0) _____

14. (−1, −3) _____

15. (5, 3) _____

16. (4, −1) _____

17. (−5, 5) _____

18. (4, −3) _____
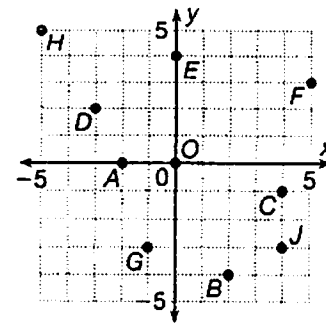
Solve.

19. A city with streets that run north/south and east/west uses coordinates to identify locations of buildings. The unit of length is 1 city block. How many blocks must a taxi driver travel to get from a bus stop at (2, 5) to a house at (17, 25)?

_____

TEST PREP

20. What are the coordinates of a point in the coordinate plane that is 2 units to the right of the origin and 7 units down?

Skill 15

A (−2, −7)   C (2, −7)

B (−2, 7)   D (2, 7)

21. Solve: $6x + 5 = -13$.

Skill 14

F −18   H 3

G −3   J 18