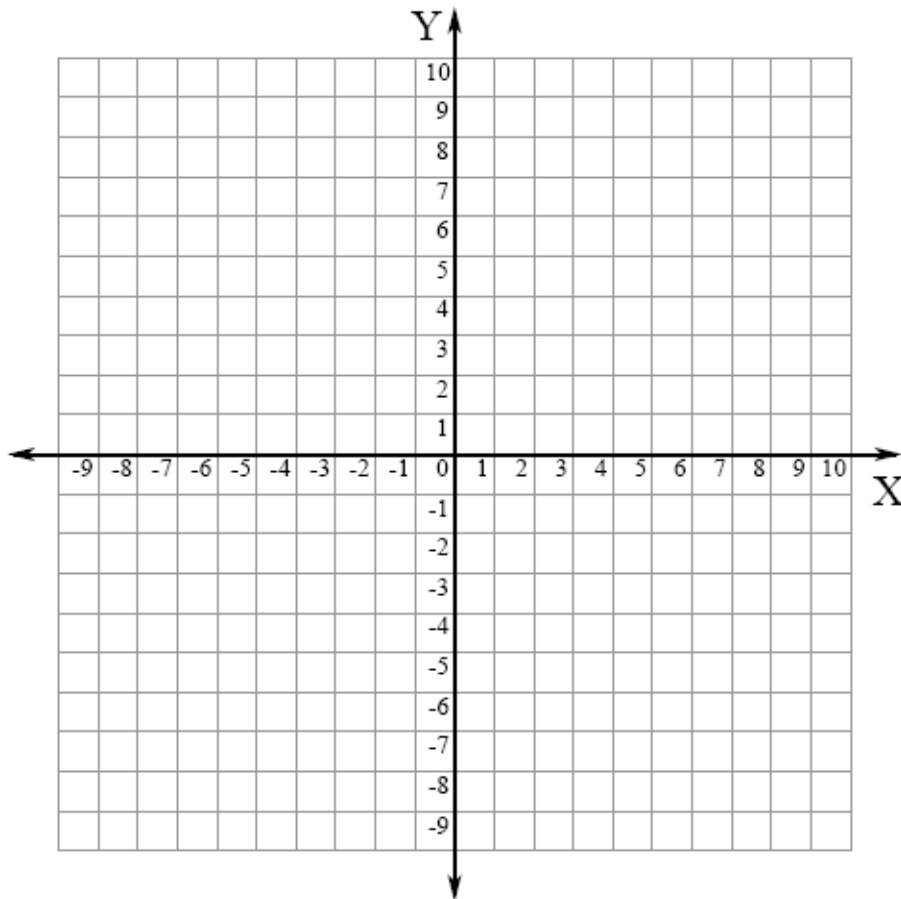


The Coordinate System

- A **coordinate system**, or coordinate plane, is used to locate points in a 2-dimensional plane.
- The horizontal number line is the _____.
- The vertical number line is the _____.
- Their intersection is the _____. (Label)



- The coordinate plane contains four quadrants (I, II, III, IV). Label the quadrants.
- Any point can be located within one of the four quadrants in the coordinate plane using a specific ordered pair of numbers, called its _____.

(x , y)

- The first number in an ordered pair is the x-coordinate.
- The second number is the y-coordinate.

Example: **(3,2)** **3** is the **x- coordinate**, **2** is the **y-coordinate**.

- A point is defined on the coordinate plane by one, AND ONLY ONE, ordered pair.

Practice (5.3)

Tell what point is located at each ordered pair.

1. $(3, -2)$ _____ 2. $(2, 3)$ _____ 3. $(-5, 5)$ _____
4. $(-7, -8)$ _____ 5. $(-4, 4)$ _____ 6. $(-5, 0)$ _____

Write the ordered pair for each given point.

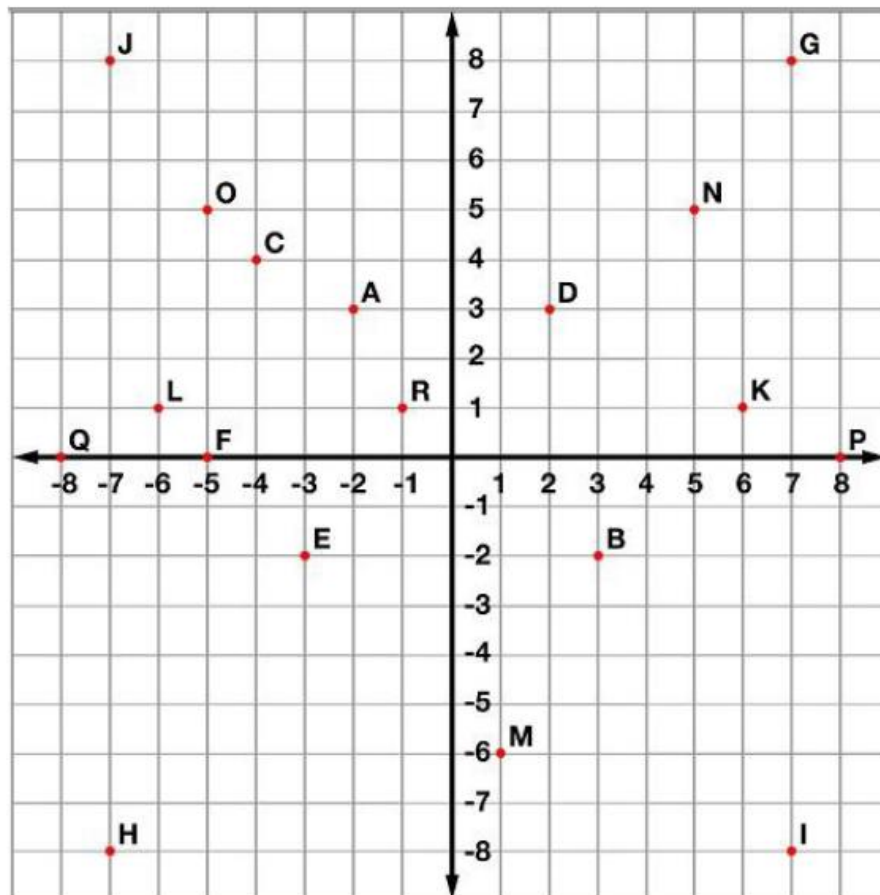
7. E _____ 8. M _____ 9. P _____
10. G _____ 11. Q _____ 12. N _____

Plot the following points on the coordinate grid.

13. S $(-6, -3)$ 14. T $(2, -4)$ 15. U $(5, 8)$

Identify the quadrant containing each point.

16. B 17. J 18. I 19. D 20. E



3-3

Study Guide and Intervention

The Coordinate Plane

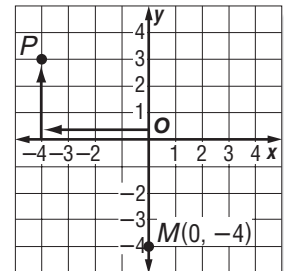
The **coordinate plane** is used to locate points. The horizontal number line is the **x-axis**. The vertical number line is the **y-axis**. Their intersection is the **origin**.

Points are located using **ordered pairs**. The first number in an ordered pair is the **x-coordinate**; the second number is the **y-coordinate**.

The coordinate plane is separated into four sections called **quadrants**.

EXAMPLE 1 Name the ordered pair for point P. Then identify the quadrant in which P lies.

- Start at the origin.
 - Move 4 units left along the x-axis.
 - Move 3 units up on the y-axis.
- The ordered pair for point P is $(-4, 3)$.
P is in the upper left quadrant or quadrant II.



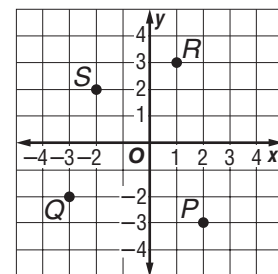
EXAMPLE 2 Graph and label the point $M(0, -4)$.

- Start at the origin.
- Move 0 units along the x-axis.
- Move 4 units down on the y-axis.
- Draw a dot and label it $M(0, -4)$.

EXERCISES

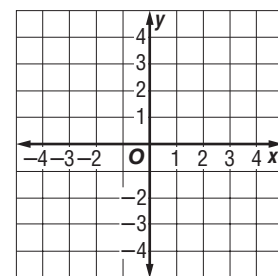
Name the ordered pair for each point graphed at the right. Then identify the quadrant in which each point lies.

- | | |
|------|------|
| 1. P | 2. Q |
| 3. R | 4. S |



Graph and label each point on the coordinate plane.

- | | |
|---------------|----------------|
| 5. $A(-1, 1)$ | 6. $B(0, -3)$ |
| 7. $C(3, 2)$ | 8. $D(-3, -1)$ |
| 9. $E(1, -2)$ | 10. $F(1, 3)$ |

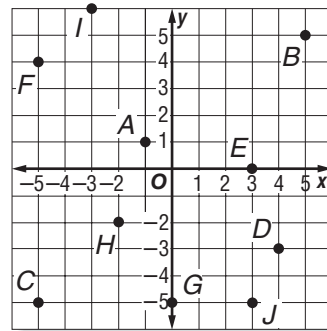


3-3

Practice: Skills

The Coordinate Plane

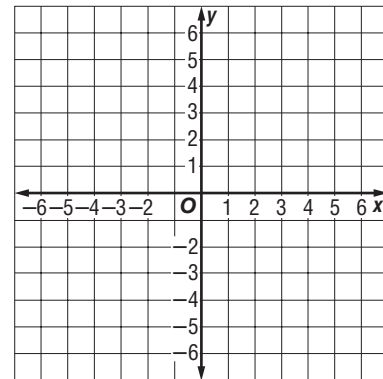
Name the ordered pair for each point graphed at the right. Then identify the quadrant in which each point lies.



- | | |
|-------------|--------------|
| 1. <i>A</i> | 2. <i>B</i> |
| 3. <i>C</i> | 4. <i>D</i> |
| 5. <i>E</i> | 6. <i>F</i> |
| 7. <i>G</i> | 8. <i>H</i> |
| 9. <i>I</i> | 10. <i>J</i> |

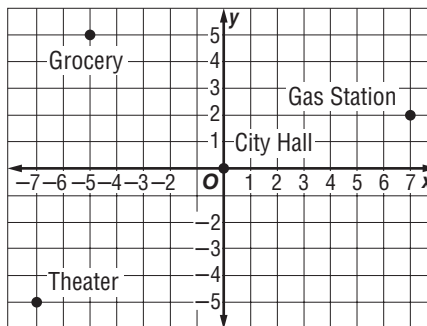
Graph and label each point on the coordinate plane.

- | | |
|-----------------|----------------|
| 11. $N(-1, 3)$ | 12. $V(2, -4)$ |
| 13. $C(4, 0)$ | 14. $P(-6, 2)$ |
| 15. $M(-5, 0)$ | 16. $K(-1, 5)$ |
| 17. $I(-3, -3)$ | 18. $A(5, -3)$ |
| 19. $D(0, -5)$ | |



Name the ordered pair for each point on the city map at the right.

20. City Hall
21. Theater
22. Gas Station
23. Grocery

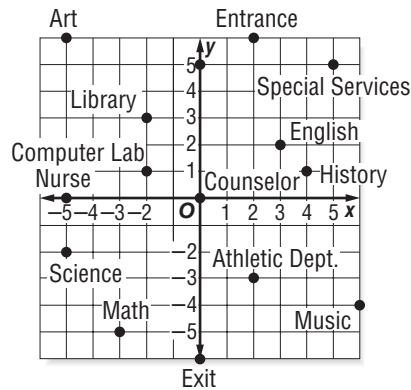


3-3

Practice: Word Problems

The Coordinate Plane

SCHOOL For Exercises 1–4, use the coordinate plane at the right. It shows a map of the rooms in a junior high school.

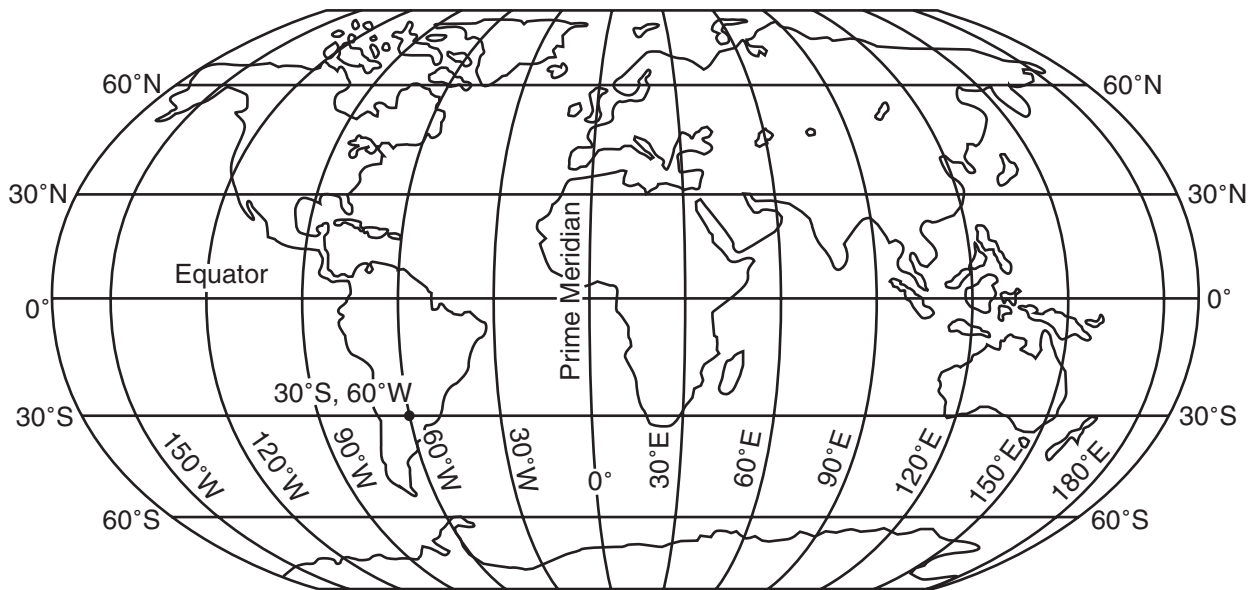


<p>1. Thalia is in the room located at $(-2, 1)$. What room is she in? Describe in words how to get from the origin to this point.</p>	<p>2. Thalia's next class is 8 units to the right and 5 units down on the map from where she is now. In what room is Thalia's next class? Find the ordered pair that represents the location of that room.</p>
<p>3. Tyrone is in the Art room, but his next class is in the History room. Give Tyrone directions on how to get to the History room.</p>	<p>4. On the map, which classrooms are located in the third quadrant? Describe the coordinates of all points in the third quadrant.</p>
<p>5. NEIGHBORHOOD Delsin made a map of his neighborhood in such a way that each intersection is a point on a coordinate plane. Right now, Delsin stands at point $(-4, -3)$. Give the ordered pair of where he will be if moves 5 units to the right and 7 units up on the map.</p>	<p>6. NEIGHBORHOOD Refer to Exercise 5. In which quadrant is Delsin when he is done walking? Describe this quadrant.</p>

3-3**Enrichment****Latitude and Longitude**

This world map shows some of the latitude and longitude lines. Latitude is measured in degrees north and south of the equator. Longitude is measured in degrees east and west of the prime meridian, a line passing through Greenwich, England. (Greenwich is a suburb of London.)

The latitude is usually given first. For example, the location of 30°S, 60°W is lower South America.



Name a place near each location. Use an atlas or other reference source to check your answers.

- | | | |
|----------------|-----------------|----------------|
| 1. 30°N, 30°W | 2. 30°S, 30°E | 3. 60°N, 120°W |
| 4. 15°N, 150°W | 5. 30°S, 140°E | 6. 25°N, 100°W |
| 7. 40°N, 120°W | 8. 45°N, 90°W | 9. 40°N, 5°W |
| 10. 60°N, 45°W | 11. 35°N, 140°E | 12. 0°, 60°E |