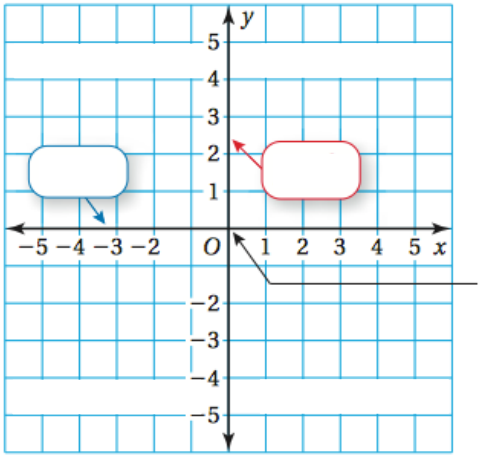
6.5 THE COORDINATE PLANE
Guided Notes

Key Idea

The Coordinate Plane

A **coordinate plane** is formed by the of a number line and a number line. The number lines at the **origin** and separate the coordinate plane into called **quadrants**.



An *ordered pair* is used to a point in a plane.

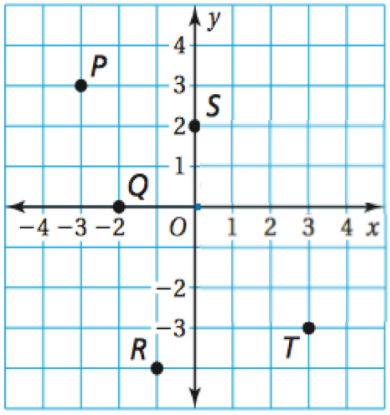
ordered pair: ( )

EXAMPLE 1 Identifying an Ordered Pair

Which ordered pair corresponds to point *T*?

Ⓐ (−3, −3) Ⓑ (−3, 3)

Ⓒ (3, −3) Ⓓ (3, 3)



Point *T* is units to the of the origin and units . So, the *x*-coordinate is and the *y*-coordinate is

∴ The ordered pair corresponds to point *T*. The correct answer is

EXAMPLE 2 Plotting Ordered Pairs

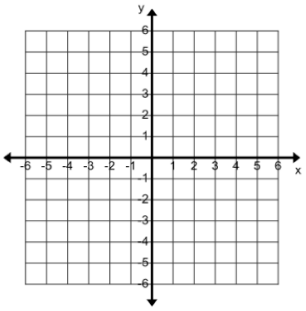
Plot (a) (−2, 3) and (b) (0, −3.5) in a coordinate plane. Describe the location of each point.

a. Start at the Move units and units Then plot the point.

∴ The point is

b. Start at the Move units Then plot the point.

∴ The point is

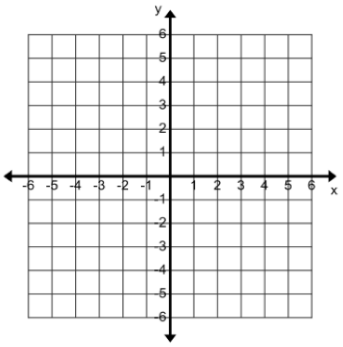


EXAMPLE 3 Finding Distances in the Coordinate Plane

An *archaeologist* divides an area using a coordinate plane in which each unit represents 1 meter. The corners of a secret chamber are shown in the graph. What are the dimensions of the secret chamber?

The of the chamber is the between and
The of the chamber is the between and

You can use to find the between



Reading

An **archaeologist** studies ancient ruins and objects to learn about people and cultures.

∴ The secret chamber is meters long and meters wide.

EXAMPLE 4 Real-Life Application 3

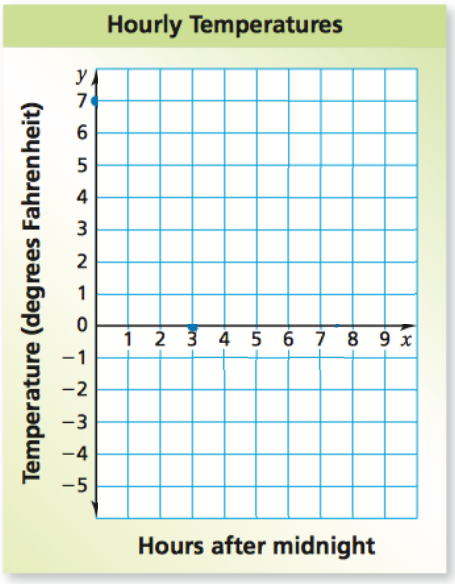
A blizzard hits a town at midnight. The table shows the hourly temperatures from midnight to 8:00 A.M.

Hours after Midnight, x	0	1	2	3	4	5	6	7	8
Temperature, y	7°F	5°F	3°F	0°F	−1°F	−4°F	−5°F	−2°F	2°F

a. Display the data in a line graph.

Write the ordered pairs.

Plot and label the ordered pairs. Then connect the ordered pairs with line segments.



b. Make three observations from the graph.

Three possible observations follow:

- The hourly temperatures decrease from midnight to 6:00 A.M.
- The hourly temperatures increase from 6:00 A.M. to 8:00 A.M.
- The greatest decrease in hourly temperatures from one hour to the next is 3°F. This happens twice: from 2:00 A.M. to 3:00 A.M. and from 4:00 A.M. to 5:00 A.M.
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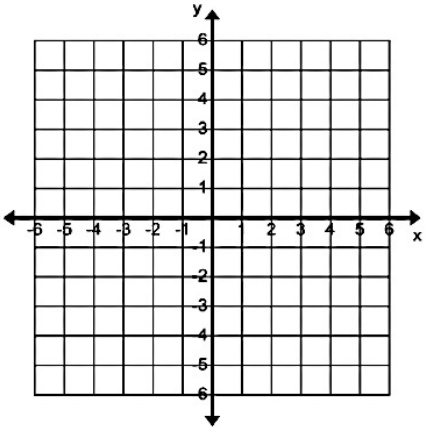
On Your Own 6.5

1)

2)



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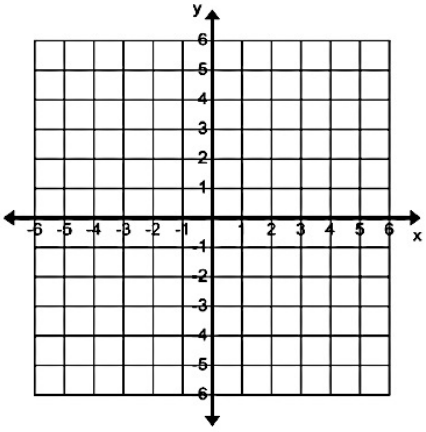


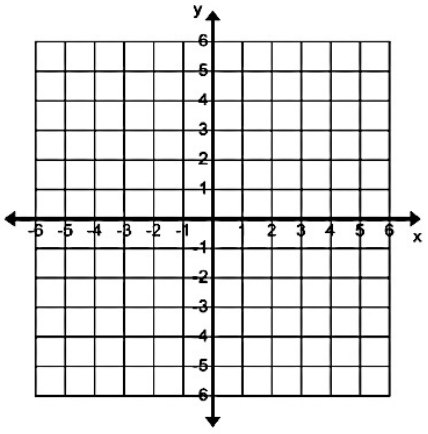
5)

6)

7)

8)

9)



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