Table of Contents

Name: _____

Finding Distance

We know how to locate ordered pairs on a coordinate plane.

We know that absolute value is how far a number is from 0.

$$|3| = 3$$

We can use this knowledge to find the distance between points with the same first coordinate or the same second coordinate.

When the points are in the same quadrant, we subtract the absolute value of the coordinate that is different.

When the points are in different quadrants, we add the absolute value of the coordinate that is different.

For example, to find the distance between point A and point B, first we determine that they're in different quadrants. Since they are in different quadrants, we must add the absolute values of the *y*-coordinates.
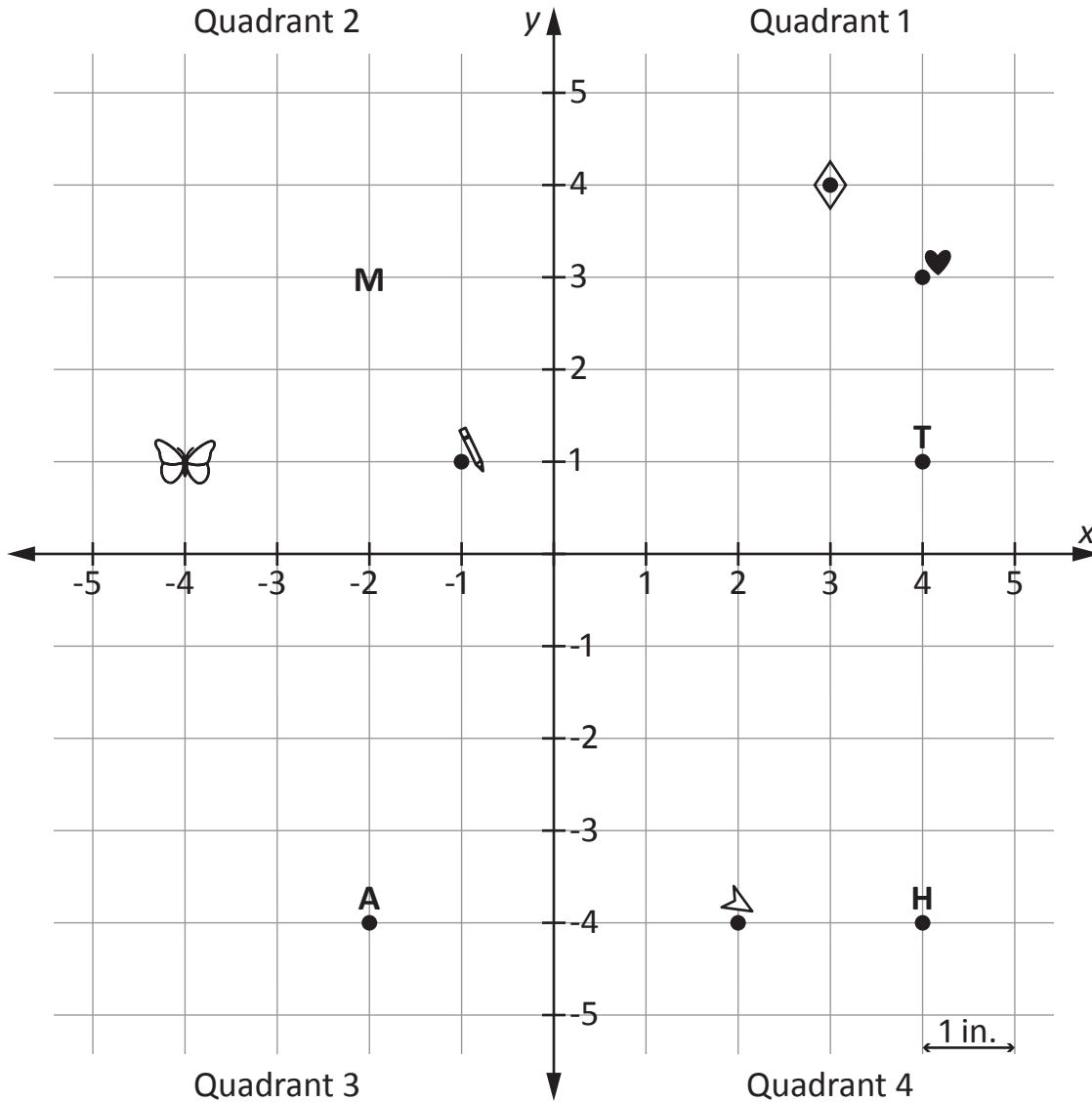
$$|2| + |-4| \qquad 2 + 4 = 6$$

Point A and Point B are 6 units away from each other.
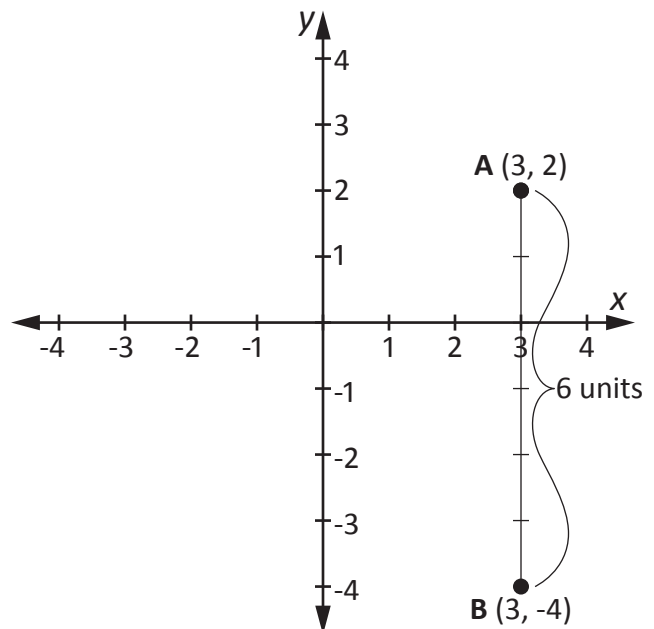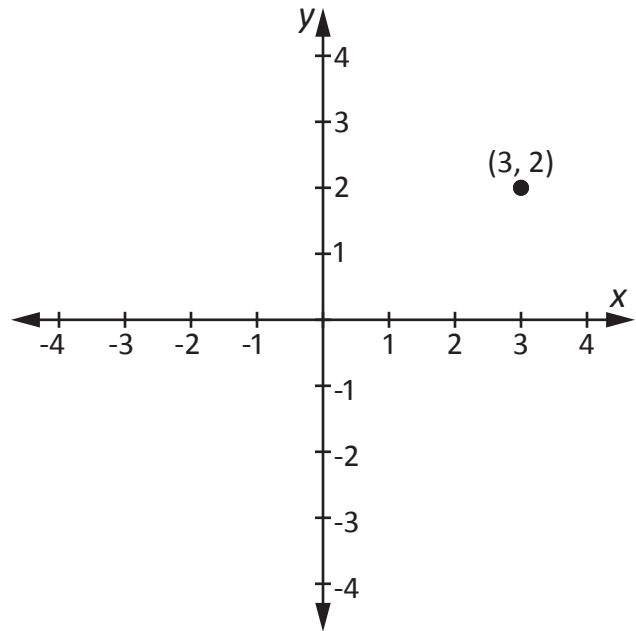
Name: _____

Finding Distance

Work with your partner to solve these practice problems.

Quadrant 2   *y*   Quadrant 1
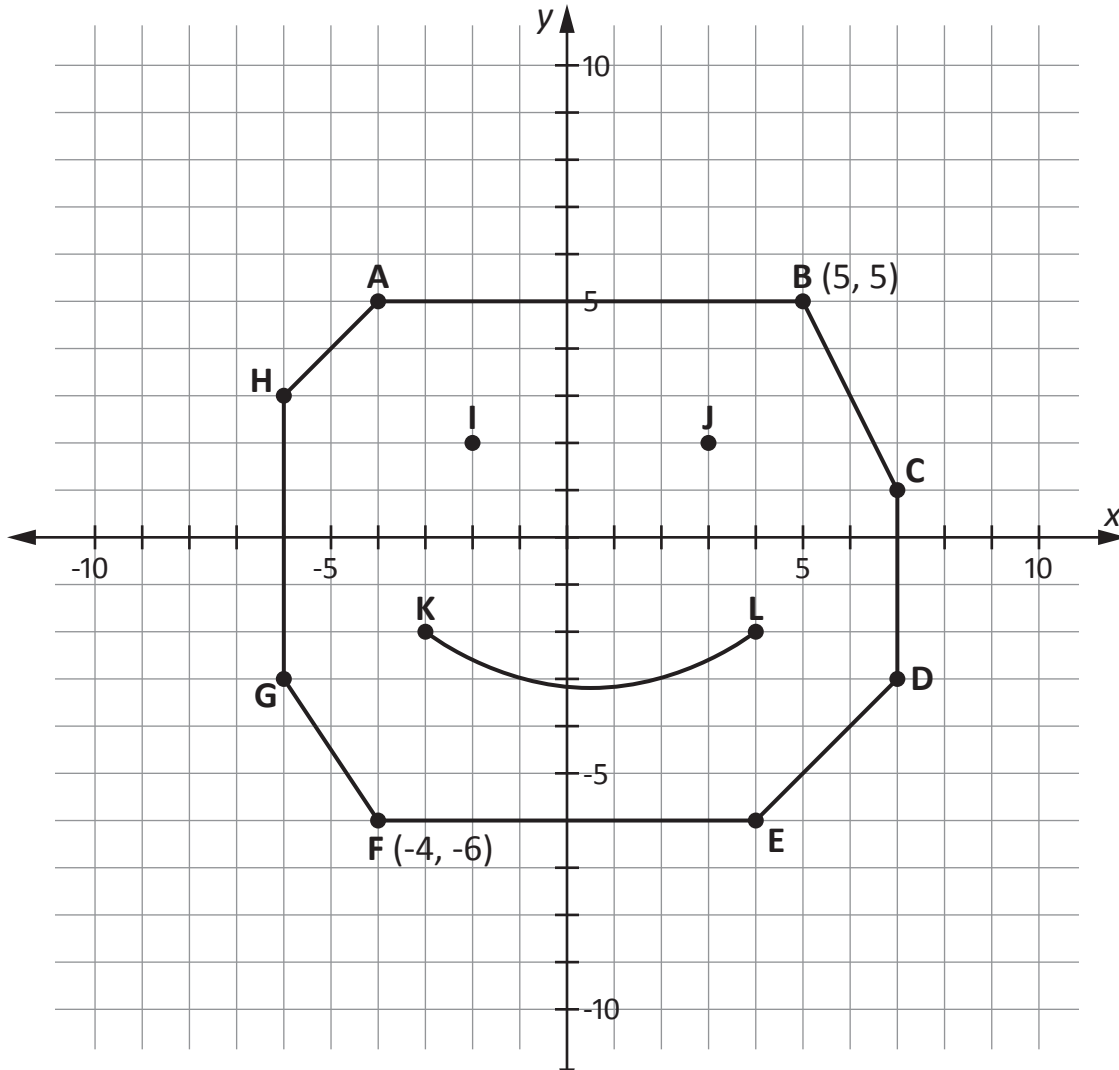
Quadrant 3   Quadrant 4

1 in.

1. How far is it from point M to point A? _____ inches

2. How far is it from point M to the heart? _____ inches

3. How far is it from the heart to point T? _____ inches

4. Using absolute value, find the distance between the airplane (✈) and point A. Show your work below.

Name: _____

Finding Distance

Focus on what you learned. Find the answers.

1. How far is it from point I to point J? _____

2. How far is it from point A to point F? _____

3. Can you find the distance between point F and point G using absolute value? Why, or why not?

   _____

   _____

4. The coordinates for point B are (5, 5). What other letter shares the same

   x-coordinate? _____   What about the same *y*-coordinate? _____

Name: _____

Finding Distance

Think about finding the distance between points. Write about what you learned.

y
7
6
5
4
3
2
1

-7 -6 -5 -4 -3 -2 -1   1 2 3 4 5 6 7   x
-1
-2
-3
-4
-5
-6
-7
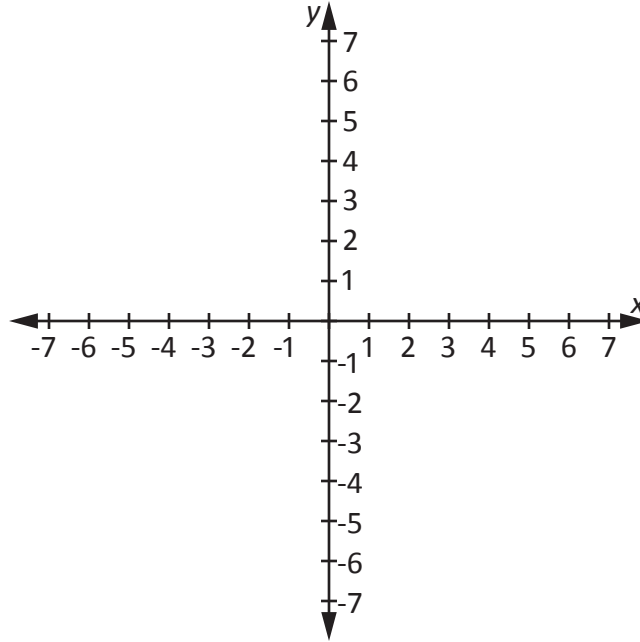
1. Martino plots (-3, 4) on a coordinate plane. He wants to add a point that is 8 units away. What are two different possible coordinates he can choose?

_____

_____

2. Adia knows she can use absolute value to calculate the distance between two ordered pairs that share the same *y*-coordinate. She wants to find the distance between (-6, 5) and (-9, 5). Should she add or subtract the absolute value of the *x*-coordinate? Why? What is the distance?

_____

_____

_____

3. When it comes to finding distance, I find it (easy/difficult) to _____

because _____

_____