Homework Problems

Name _____

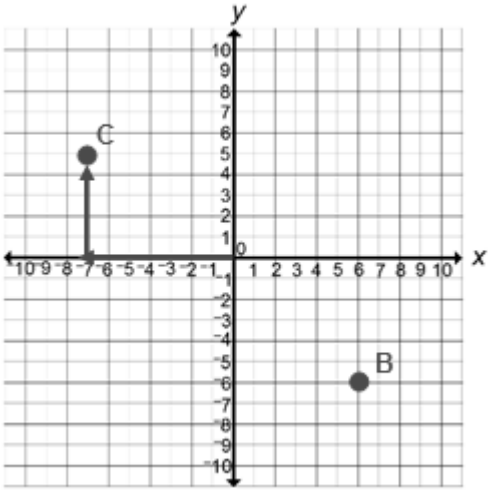
Team Name	Team Complete?	Team Did Not Agree On Questions…
		#'s

Quick Look

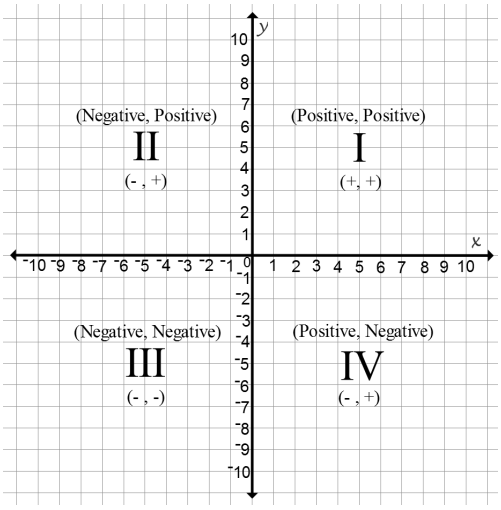
Today we learned how to plot and label a given point, name the location of a plotted point, and determine what quadrant a point belongs in by looking at the signs of the coordinates in an ordered pair.

<u>To plot point C at (⁻7, 5):</u>
1) Start at the origin. The *x*-coordinate is negative, so we move 7 left along the *x*-axis.
2) The *y*-coordinate is positive, so we move 5 up.
3) Label the point as C.

<u>To locate point B:</u>
1) Draw a line or trace with your finger from the point to the *x*-axis to find the *x*-coordinate. Point B crosses the *x*-axis at 6.
2) Draw a line or trace with your finger from the point to the *y*-axis to find the *y*-coordinate. Point B crosses the *y*-axis at ⁻6.
3) So point B is located at the ordered pair (6, ⁻6)



<u>Naming the quadrant:</u>
Remember, there is a pattern to the quadrants on the coordinate plane. The point (⁻8, ⁻3) is always located in Quadrant III because it has both a negative *x*-coordinate and a negative *y*-coordinate.



Directions for questions 1–5: In which quadrant would you plot each of these points?

1) (⁻5, 3)

2) (7, ⁻7)

3) (2, ⁻8)

4) (⁻1, ⁻3)

5) (5, 6)

Directions for questions 6–10: Plot and label each point on the coordinate plane.

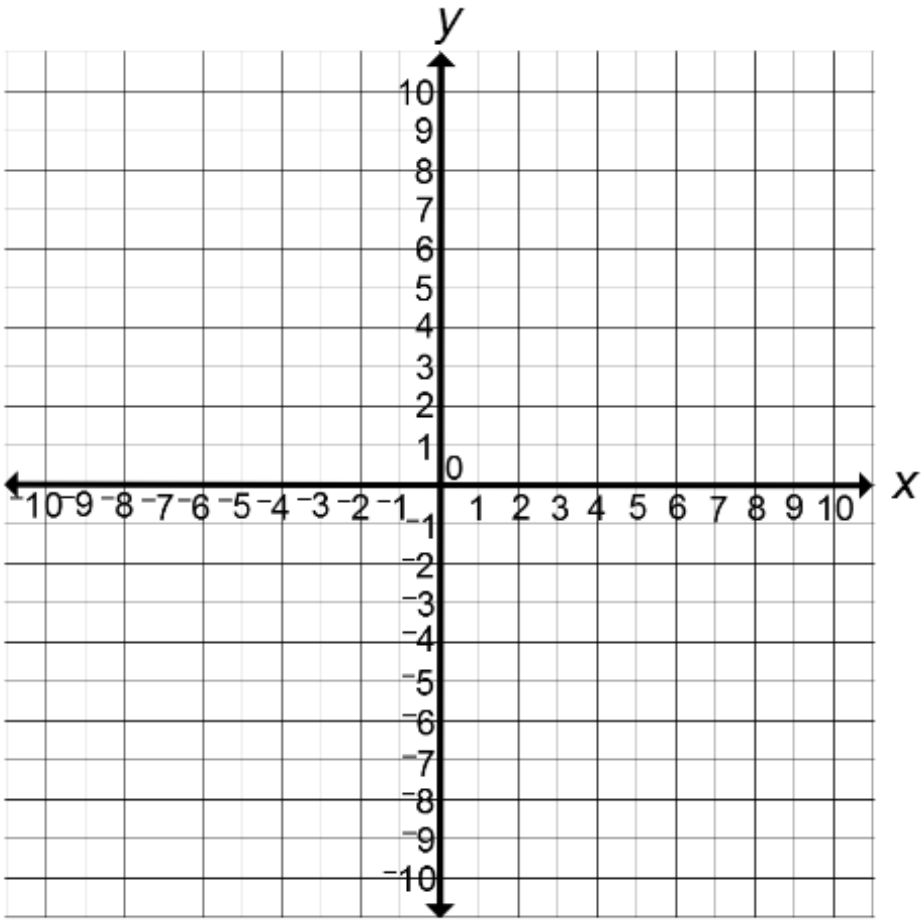
6) K (⁻5, 5)

7) B (8, 0)

8) A (⁻6, ⁻4)

9) R (7, 9)

10) P (2, ⁻3)



Directions for questions 11–15: Write the ordered pair for each point.

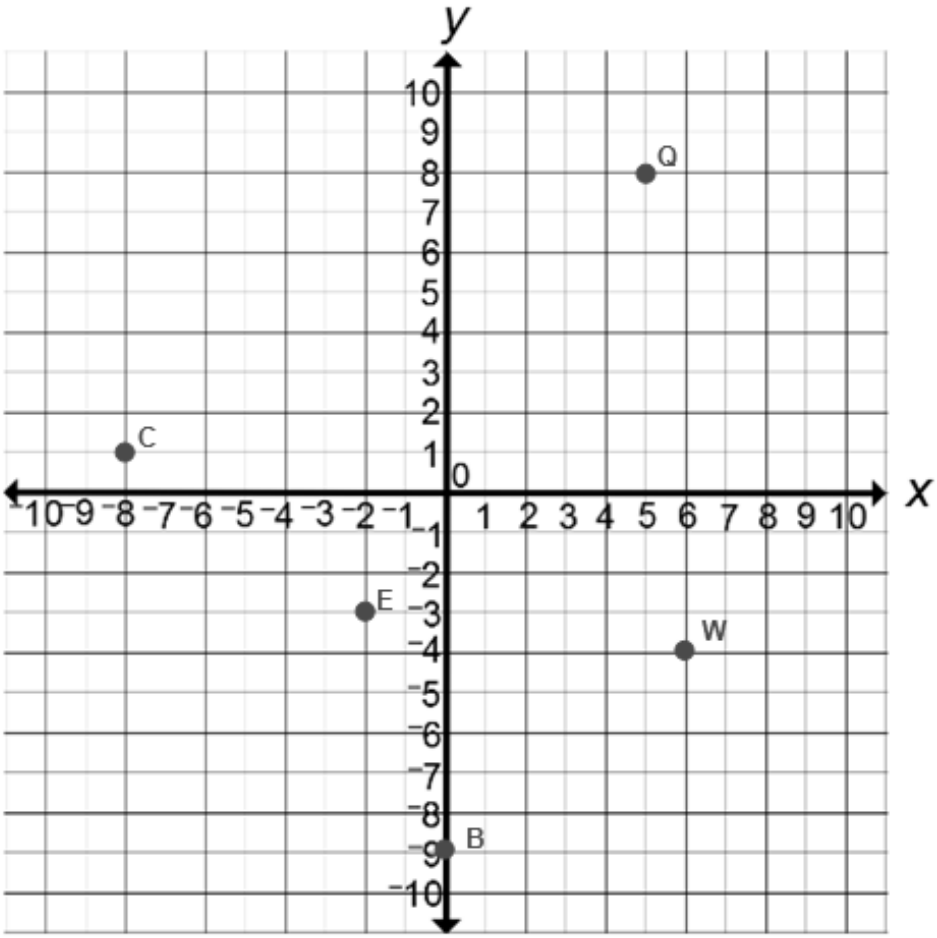
11) B _____

12) Q _____

13) C _____

14) E _____

15) W _____



Mixed Practice

16) Estimate.

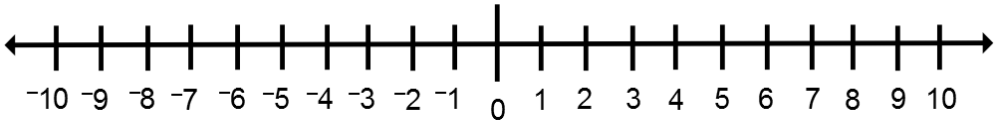
$3\frac{1}{4} \times 5\frac{7}{8}$

17) Write as an improper fraction.

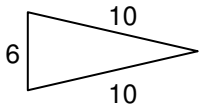
$6\frac{5}{3}$

18) Write an integer for the situation. Then plot it on the number line.

Take 5 steps backwards. _____



19) Determine whether the triangle is scalene, isosceles or equilateral.



Word Problem

20) Tina is plotting point D on a grid. From the origin, she moves 5 to the left and 2 up. What is the ordered pair for point D? In what quadrant will point D be? Explain your thinking.

For the Guide on the Side

Today your student located and plotted points in a four-quadrant coordinate plane. In the past we have worked on plotting points solely in Quadrant I of the coordinate plane. A **coordinate plane** is made up of an ***x*-axis** and ***y*-axis** both of which are number lines intersecting at their 0 points. This point (0, 0) is called the **origin** and is always the starting point when plotting or locating points.

An **ordered pair** is made up of an *x*-coordinate and *y*-coordinate (*x, y*). It helps us locate points on a coordinate plane. The *x*-coordinate tells us how far to move left, if the *x*-coordinate is negative or how far to move to the right, if the *x*-coordinate is positive. The *y*-coordinate tells us how far to move down, if the *x*-coordinate is negative or how far to move up, if the *y*-coordinate is positive.

Your student should be able to answer these questions about plotting and locating points.

1) Why do you need two coordinates in an ordered pair to plot a point on a grid?
2) Are the points (1, 4) and (4, 1) the same? Why or why not?
3) Why must you always start at the origin when locating or plotting a point?
4) How can you determine the quadrant location of a point using only the ordered pair associated with it?

Here are some ideas to work with coordinate planes with your student.

1) Play "Battleship" as a hands-on way of reinforcing coordinate planes and ordered pairs.

2) Find a world map and locate points of interest using lines of latitude and longitude.

3) Research maps and map-making (cartography).

4) Make a coordinate plane on graph paper and take turns plotting and locating points. You could even try making shapes!

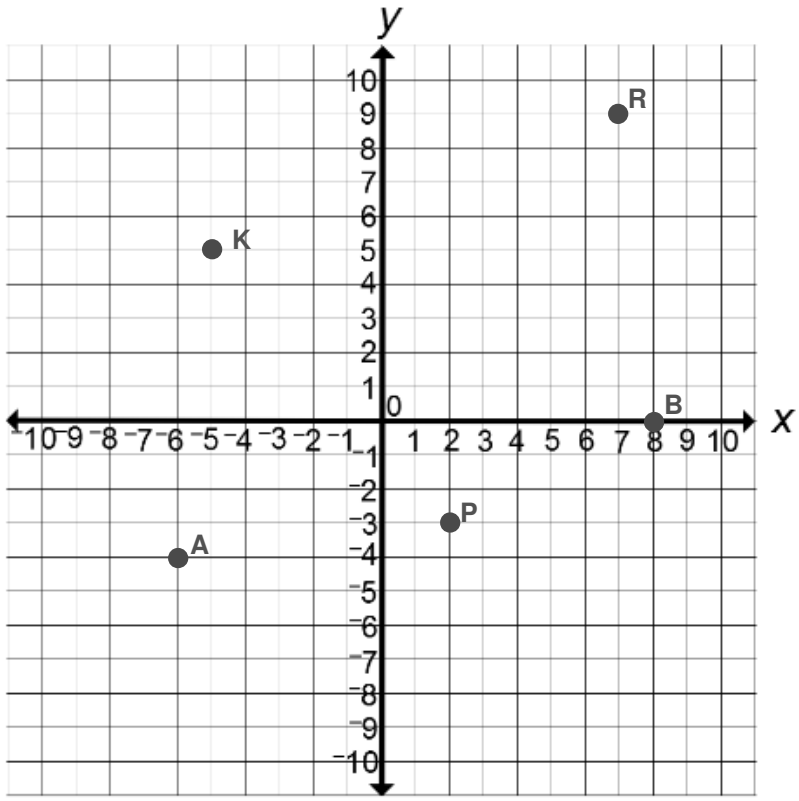
5) Use Khan Academy to review coordinate planes by watching helpful videos:

- Quadrants of the Coordinate Plane (includes brief explanation of plotting ordered pairs): http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/v/quadrants-of-coordinate-plane
- Plotting Ordered Pairs: http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/v/plot-ordered-pairs
- Locating and Plotting Ordered Pairs: http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/v/the-coordinate-plane

Homework Answers

1) Quadrant II
2) Quadrant IV
3) Quadrant IV
4) Quadrant III
5) Quadrant I

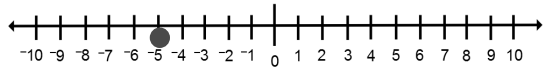
6–10)



11) (0, ⁻9)
12) (5, 8)
13) (⁻8, 1)
14) (⁻2, ⁻3)
15) (6, ⁻4)

Mixed Practice

16) *Possible estimate:* 3 × 6 = 18
17) $\frac{23}{5}$
18) ⁻5



19) isosceles

Word Problem

20) The ordered pair for point D is (⁻5, 2) and it will fall in Quadrant II.
Possible explanation: The directions tell Tina to move "5 to the left" which indicates that this is a negative *x*-coordinate. The directions then say to move "2 up" which indicates that this is a positive *y*-coordinate. A negative *x*-value paired with a positive *y*-value indicates that this ordered pair is located in Quadrant II.