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# Unit 7, Lesson 12: Constructing the Coordinate Plane

1. Draw and label an appropriate pair of axes and plot the points.

   $(\frac{1}{5}, \frac{4}{5})$

   $(\frac{-3}{5}, \frac{2}{5})$

   $(-1\frac{1}{5}, \frac{-4}{5})$

   $(\frac{1}{5}, \frac{-3}{5})$

2. Diego was asked to plot these points: $(-50, 0)$, $(150, 100)$, $(200, -100)$, $(350, 50)$, $(-250, 0)$. What interval could he use for each axis? Explain your reasoning.

3. a. Name 4 points that would form a square with the origin at its center.

   b. Graph these points to check if they form a square.

4. Which of the following changes would you represent using a negative number? Explain what a positive number would represent in that situation.

   a. A loss of 4 points

   b. A gain of 50 yards

   c. A loss of $10

   d. An elevation above sea level

(from Unit 7, Lesson 5)

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5. Jada is buying notebooks for school. The cost of each notebook is $1.75.

   a. Write an equation that shows the cost of Jada's notebooks, $c$, in terms of the number of notebooks, $n$, that she buys.

   b. Which of the following could be points on the graph of your equation?
   $(1.75, 1)$ $(2, 3.50)$ $(5, 8.75)$ $(17.50, 10)$ $(9, 15.35)$

(from Unit 6, Lesson 16)

6. A corn field has an area of 28.6 acres. It requires about 15,000,000 gallons of water. About how many gallons of water per acre is that?

   A. 5,000

   B. 50,000

   C. 500,000

   D. 5,000,000

(from Unit 5, Lesson 13)

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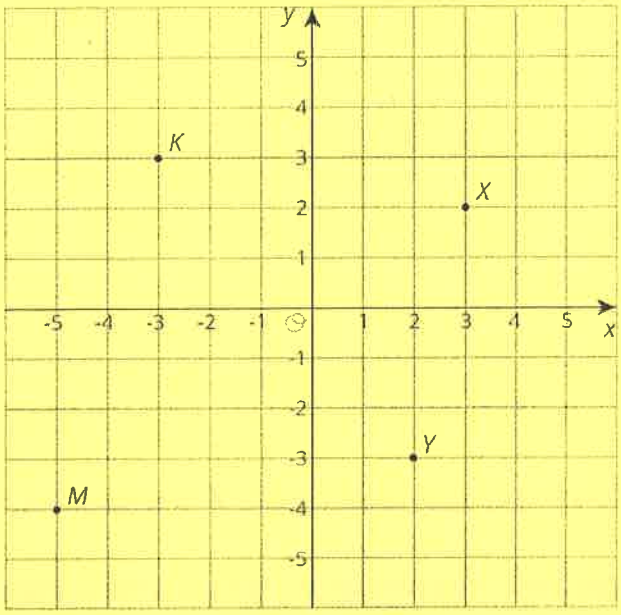
# Unit 7, Lesson 14: Distances on a Coordinate Plane

1. Here are 4 points on a coordinate plane.




a. Label each point with its coordinates.

b. Plot a point that is 3 units from point $K$. Label it $P$.

c. Plot a point that is 2 units from point $M$. Label it $W$.

2. Each set of points are connected to form a line segment. What is the length of each?

a. A = (3, 5) and B = (3, 6)

b. C = (-2, -3) and D = (-2, -6)

c. E = (-3, 1) and F = (-3, -1)

3. On the coordinate plane, plot four points that are each 3 units away from point $P = (-2, -1)$. Write the coordinates of each point.

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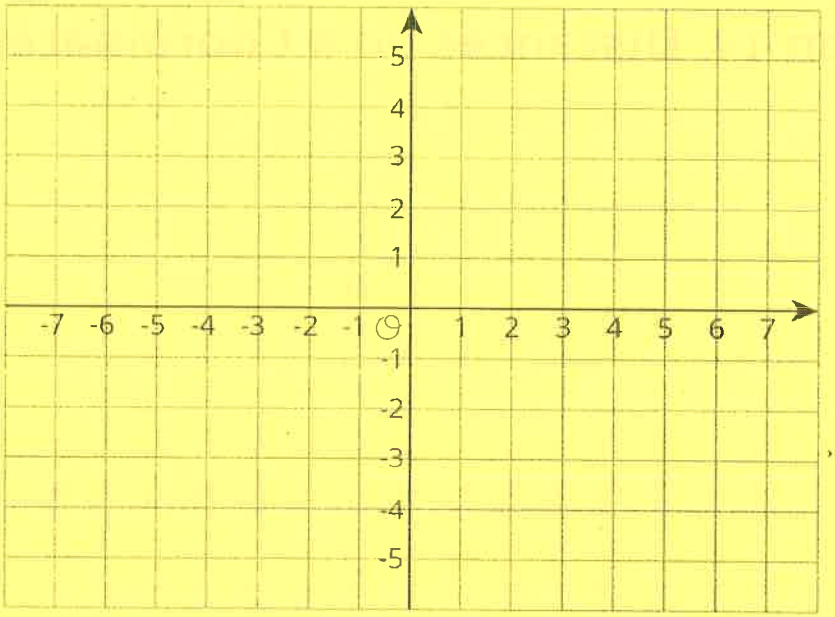


4. Noah's recipe for sparkling orange juice uses 4 liters of orange juice and 5 liters of soda water.

   a. Noah prepares large batches of sparkling orange juice for school parties. He usually knows the total number of liters, $t$, that he needs to prepare. Write an equation that shows how Noah can find $s$, the number of liters of soda water, if he knows $t$.

   b. Sometimes the school purchases a certain number, $j$, of liters of orange juice and Noah needs to figure out how much sparkling orange juice he can make. Write an equation that Noah can use to find $t$ if he knows $j$.

(from Unit 6, Lesson 16)

Solve each equation.

5.

a. $3a = 12$

b. $b + 3.3 = 8.9$

c. $1 = \frac{1}{4}c$

d. $5\frac{1}{2} = d + \frac{1}{4}$

e. $2e = 6.4$