

**Answer completely and show all work**

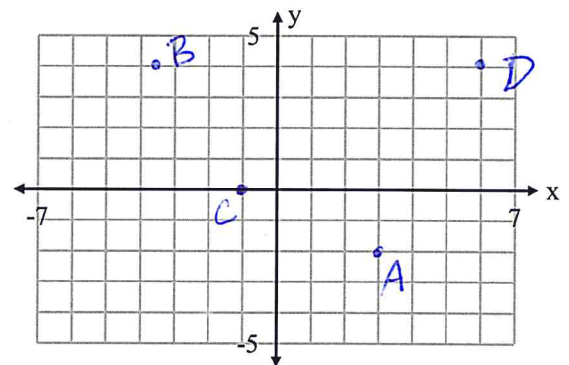
1. Graph and label each point.

a.  $A(3, -2)$

b.  $B(-3.5, 4)$

c.  $C(-1, 0)$

d.  $D(6, 4)$



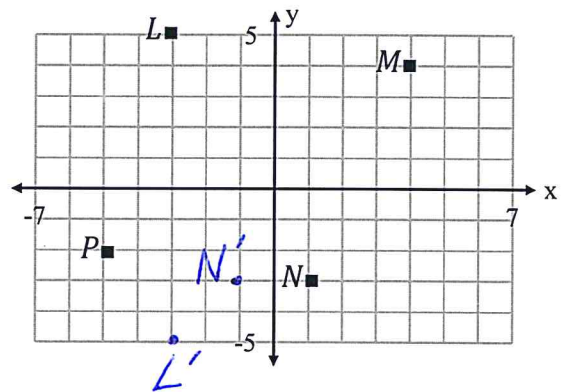
2. Name the quadrants for

point A IV and point B. II

3. Write the ordered pair for each labeled point.

L.  $(-3, 5)$ , M.  $(4, 4)$

N.  $(1, -3)$ , P.  $(-5, -2)$



4. a. Reflect
- $L$
- over the
- $x$
- axis and label it
- $L'$
- .

- b. Reflect
- $N$
- over the
- $y$
- axis and label it
- $N'$
- .

5. Find the distance between:

a.  $R(2, -5)$  and  $S(4, -5)$ . 2

b.  $T(1, 7)$  and  $Q(1, -5)$ . 12

6. Find the indicated product or quotient.

a.  $32 \div (-8)$  -4

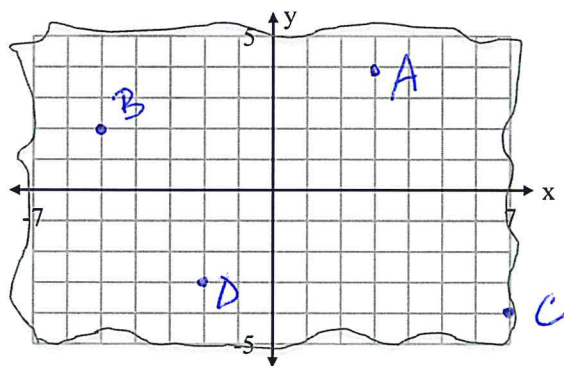
b.  $48 \div (-6) \times 3 \div (-4)$   
 $-8 \times 3 \div -4 = -24 \div -4 =$  6

c.  $-14 \times (-3) \div 2$   
 $42 \div 2 =$  21

d.  $\frac{24 \times (-6)^2}{-4 \times 3}$   
12

**Answer completely and show all of your work.**

The United States Marines are headed out on another dangerous mission. They are in enemy territory, and have to navigate across a plot of land 10 yards long by 14 yards wide. They were able to overlay a grid on the land by GPS images. The coordinate grid to the right is now what they have to work with.



1. Help the troops by identifying where the land mines are located, so that they can avoid stepping on them.
  - a. The first land mine is located at position (3,4). Label this point A and explain how you located it.  
*Moved three units right and four units up from the origin*
  - b. The next land mine is located precisely at the reflection of point A over the y-axis. Label this point B.
  - c. Start from the point (-5,2), and go to (1, -1). Continue in this same distance and direction to find the third land mine. Label this point C. Which quadrant is point C in?  
*(7, -4) Quadrant IV*
  - d. What is the total distance horizontally, you traveled in finding point C in part c? How many units did you move vertically? Do you think you traveled more, less, or the same amount as the sum the two distances you found?  
*12 units horizontally  
6 units vertically  
18 units is less than actually diagonal distance.*
  - e. For the last land mine, intelligence had to translate some encrypted clues. Starting from the point (-6, 2), they figured out that they would have to multiply the y-coordinate by  $-\frac{3}{2}$  and divide the x-coordinate by 3. Label this point on the graph, D.  
 *$T(-6, 2) \rightarrow (\frac{1}{3}(-6), -\frac{3}{2}(2)) = (-2, -3)$*
  - f. In what quadrant would the reflection of point D over the x-axis be? *II*

2. If  $a - b$  is negative, what can you conclude (if anything) about  $b - a$ ? Explain your reasoning.  
*It is positive. If  $a - b$  is negative, then  $b > a$ , so  $b - a$  would have to be positive*

3. During a 5-minute landing, an airplane decreased in elevation by 3265 feet. Determine the mean elevation change per minute.

$$\begin{array}{r} 653 \\ 5 \overline{) 3265} \end{array}$$

$$\frac{3265 \text{ ft}}{5 \text{ min}} = 653 \text{ ft/min}$$