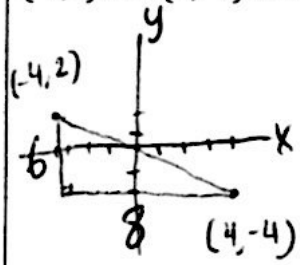
Practice Quiz Ch. 3A Solutions Classroom set

1.) Given this transformation $(x, y) \rightarrow (x + 3, y - 2)$, apply the transformation to the rectangle with vertices at $(A(-1,-2), B((-1,2), C(4,2), D(4,-2)$. Graph the pre-image and the image. Describe how the transformation moves each point.

A'(2,-4)
B'(2,0)
C'(7,0)
D'(7,-4)

Each point is moved right 3 and down 2.

2.) Find the distance between the points (-4,2) and (4, -4). Show your reasoning.



Find the hypotenuse, c.
$a^2 + b^2 = c^2$
$6^2 + 8^2 = c^2$
$36 + 64 = c^2$
$100 = c^2$
$100 = c$

3.) *Solve*: $|6x - 12| = -40$

No solution

The absolute value cannot be negative.

4.) *Solve*: $|15x + 4| = 0$

$15x + 4 = 0$ or $-(15x + 4) = 0$
$-4 = -4$ $-15x - 4 = 0$
$15x = -4$ $+4 \quad +4$
$-15x = 4$
$x = \frac{-4}{15}$ $x = \frac{-4}{15}$

$x = \frac{-4}{15}$

5.) Solve: $|x + 78| = 90$

$x + 78 = 90$ or $-(x + 78) = 90$
$-78 \quad -78$ $-x - 78 = 90$
$+78 \quad +78$
$x = 12$ $-x = 168$
$x = -168$

$x = 12, -168$

6.) Solve: $|6x - 12| - 28 = -4$

$+28 \quad +28$
$|6x - 12| = 24$
$6x - 12 = 24$ or $-(6x - 12) = 24$
$+12 \quad +12$ $-6x + 12 = 24$
$6x = 36$ $-12 \quad -12$
$x = 6$ $-6x = 12$
$\frac{-6x}{-6} = \frac{12}{-6}$
$x = -2$

$x = 6, -2$

7.) $|3x| = 15$

$3x = 15$ or $-3x = 15$
$\frac{3}{3} \quad \frac{3}{3}$ $\frac{-3}{-3} \quad \frac{-3}{-3}$
$x = 5$ $x = -5$

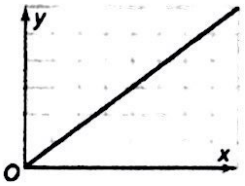
$x = 5, -5$

8.) Find an absolute value equation that has these solutions x = -4, 4.

$|x| = 4$

5. Write a sentence that can explain this graph when the axes have the following labels.

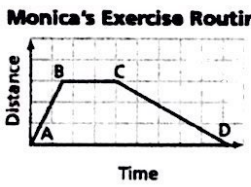
	Horizontal Axis	Vertical Axis
a.	Time (minutes)	Number of Pages Read
b.	Length (ft)	Wingspan (ft)



a.) The more time that passes, the more pages are read.

b.) The longer the length of the plane, the longer Wingspan is needed.

6. Monica's exercise routine includes stretching, walking, and jogging. This graph illustrates her exercise routine.
   a. Between which two points is Monica stretching? Explain.
   b. Between which two points is Monica walking? Explain.
   c. Between which two points is Monica jogging? Explain.



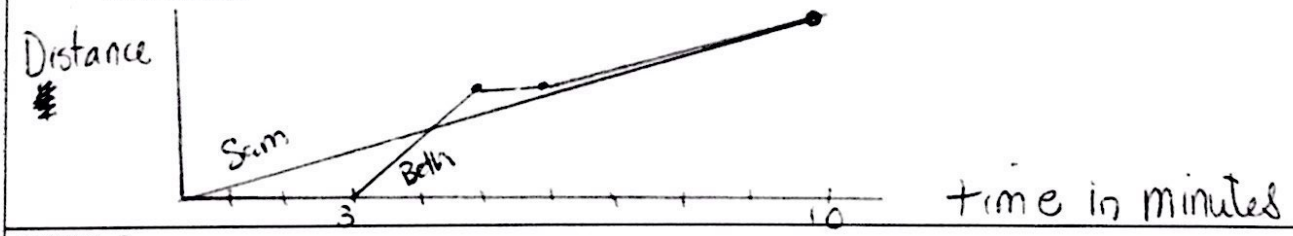
c.) Between A and B. The slope is steeper, more distance cover in shorter time.

a.) Between B and C. She is not moving distance-wise.

b.) C and D. The slope is flatter than jogging.

LEVEL 2

7. Make a graph that illustrates each situation by graphing distance against time.
   a. For exercise, Sam walks and Beth jogs. Sam walks at a steady pace for 10 minutes. Beth waits for 3 minutes after Sam starts. She jogs, rests in place for 1 minute, jogs again, and catches up to Sam at the end of the 10 minutes.



LEVEL 3

2. In the statements below, each variable represents any number. Decide whether each statement is true for *all*, *some*, or *no* values of the variables. If the statement is true for all or no values, explain. If the statement is true for some values, give one example of a value for which it is true and one example of a value for which it is false.
   a. $|a^2| = a^2$
   b. $-|a + b| = |-a - b|, a, b \neq 0$
   c. $|x - y| > |x| - |y|$

a.) all $|a^2|$ is positive or zero, a^2 is always positive or zero.

b.) no values. $-|a+b|$ will be negative but $|-a-b|$ will always be positive.

c.) Some $x = -2$ $y = 4$ $|-2-4| > |-2| - |4|$ True; $x = 4$ $y = -2$ false