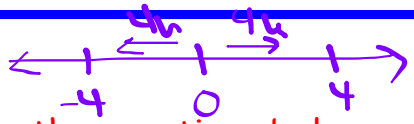
Algebra 1: 1.4 Absolute Value Equations Part 2

Warm-up:



Review of 1.4 day 1: Solve the equations below .....

1. $|x - 2| + 5 = 9$

$-5 \quad -5$

$|x-2| = 4$

$x - 2 = 4$ $\quad +2 \quad +2$

$x = 6$

$x - 2 = -4$ $\quad +2 \quad +2$

$x = -2$

2. $3 \cdot |x - 4| = |2x + 5|$

$3(x-4) = 2x + 5$

$3x - 12 = 2x + 5$

$-2x \quad -2x$

$x - 12 = 5$

$+12 \quad +12$

$x = 17$

$3(x-4) = -2x - 5$

$3x - 12 = -2x - 5$

$+2x \quad +2x$

$5x - 12 = -5$

$+12 \quad +12$

$5x = 7$

$\frac{5x}{5} = \frac{7}{5}$

$x = \frac{7}{5}$

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$|x - 2| = 4$

$|x - mid| = \pm d$

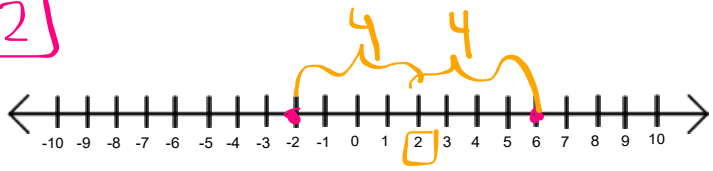
$x - 2 = 4$ $\quad +2 \quad +2$

$x = 6$

$x - 2 = -4$ $\quad +2 \quad +2$

$x = -2$

Graph the solutions.



What number is halfway between the two solutions? 2

How far away from the middle are each of the solutions? 4

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1.4 Absolute Value Equations DAY TWO with work

$$|x - 5| = 3$$

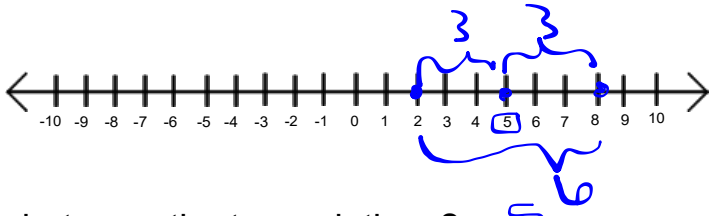
$x - 5 = 3$ $+5 \quad +5$

$x = 8$

$x - 5 = -3$ $+5 \quad +5$

$x = 2$

Graph the solutions.



What number is halfway between the two solutions? 5

How far away from the middle are each of the solutions? 3

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Hhmm ... do you notice anything about those last two problems?

What about this? $|x + 2| = 6$

Middle number?

Distance from middle to endpoints?

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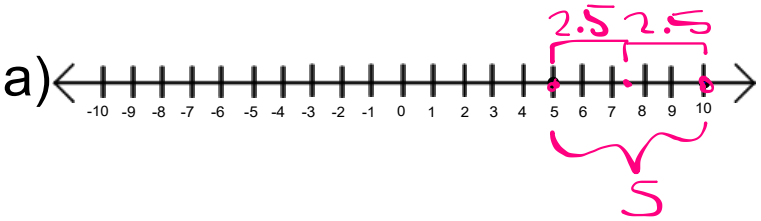
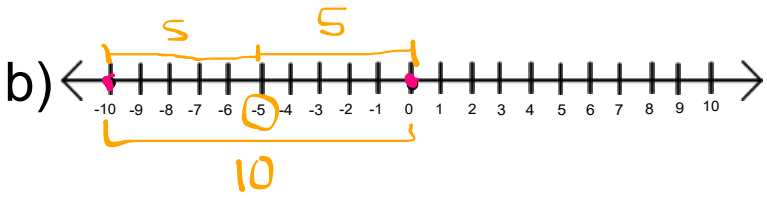
Write an absolute value equation with these solutions.

a)



$|x-7.5|=2.5$

b)



$|x-(-5)|=5$

$|x+5|=5$

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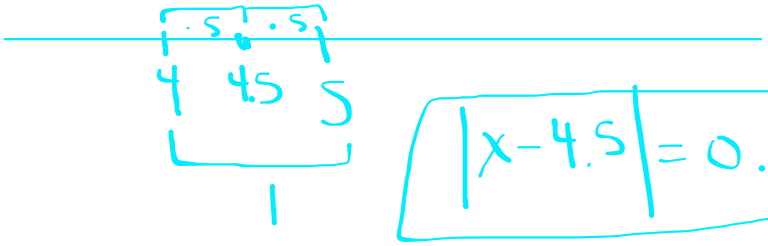
Example 3:

In a cheerleading competition, the minimum length of a routine is 4 minutes. The maximum length of a routine is 5 minutes. Write an absolute value equation that represents the minimum and maximum lengths. (Hint: graph the two solutions and see last two examples)



$|x-4.5|=0.5$

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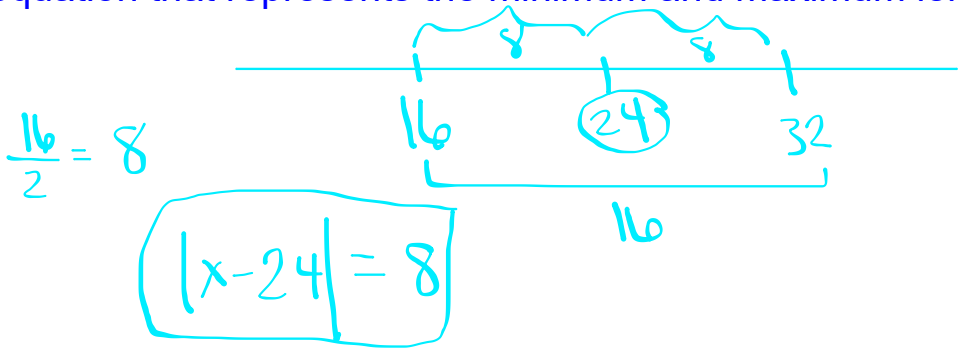
Practice 3:

For a poetry contest, the minimum length of a poem is 16 lines. The maximum length is 32 lines. Write an absolute value equation that represents the minimum and maximum lengths.



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HW: pg. 32

A: 17 - 25 (o), 31 - 39 (o), 46, 47 - 49, 62 - 67

B: 1, 2, 9 - 35 (o), 49, 52, 62 - 67

C: an email was sent to you