Absolute Value

Solving Absolute Value Equations and Inequalities:

Evaluate the following:

1) $8.4 - |2n + 5|$ If n = -7.5

$8.4 - |2(-7.5) + 5|$

$8.4 - |-15 + 5|$

$8.4 - |-10|$

$8.4 - 10$

-1.6

2) $|4x + 3| - 3.5$ if x = -2

$|4(-2) + 3| - 3.5$

$|-8 + 3| - 3.5$

$|-5| - 3.5$

$5 - 3.5$

1.5

$|-6| = 6$ and $|6| = 6$

Solve the following:

1) $|3x - 2| + 8 = 1$

$-8 \quad -8$

$|3x - 2| = -7$

No solution

2) $|x + 10| = 4x - 8$

1. $x + 10 = 4x - 8$

$-4x \quad -4x$

$-3x + 10 = -8$

$-10 \quad -10$

$-3x = -18$

$x = 6$ ✓

2. $x + 10 = -4x + 8$

$5x + 10 = 8$

$5x = -2$

$x = -\frac{2}{5}$

3) $\frac{8x}{2} = \frac{2|6x - 2|}{2}$

$4x = |6x - 2|$

1. $4x = 6x - 2$

$-2x = -2$

$x = 1$ ✓

2. $-4x = 6x - 2$

$-10x = -2$

$x = \frac{1}{5}$

4) $-3|3t-2|-12=-6$

$+12 \quad +12$

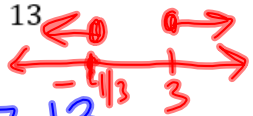
$\frac{-3|3t-2|=6}{-3}$

$|3t-2|=-2$

5) $2|x+1|-x=3x-4$

Solve and graph the solutions:

7) $|6y-5| \geq 13$



1. $6y-5 \geq 13$

$6y \geq 18$

$y \geq 3$

2. $6y-5 \leq -13$

$6y \leq -8$

$y \leq -8/6$

$y \leq -4/3$

8) $|4x-7|>13$

1. $4x-7>13$

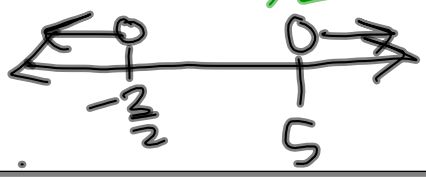
$4x>20$

$x>5$

2. $4x-7<-13$

$\frac{4x<-6}{4}$

$x<-3/2$



9) $|5z+2|<17$