

Algebra 2 Solving Absolute Value Equations and Inequalities A day (Mar 25) B day (Mar 29)
Review

$$|x|=3 \quad |x|=-7$$
$$x=3, -3 \quad \text{no solution}$$

Solve $|x+4|=5$

Algebraically

(+) case

$$x+4=5$$

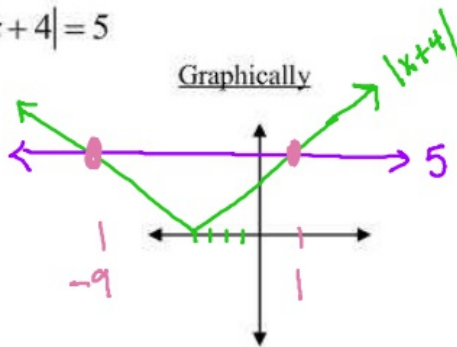
$$x=1$$

(-) case

$$x+4=-5$$

$$x=-9$$

Graphically



Examples

Solve the following absolute value equations.

1. $|m-6|=2$

(+) case

$$m-6=2$$

$$m=8$$

(-) case

$$m-6=-2$$

$$m=4$$

2. $|3t+6|=12$

(+) case

$$3t+6=12$$

$$3t=6$$

$$t=2$$

(-) case

$$3t+6=-12$$

$$3t=-18$$

$$t=-6$$

3. $\frac{-6|5-5m|}{-6} = \frac{-30}{-6}$

$$|5-5m|=5$$

(+) case

$$5-5m=5$$

$$-5m=0$$

$$m=0$$

(-) case

$$5-5m=-5$$

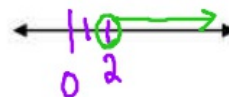
$$-5m=-10$$

$$m=2$$

Review

What values of x makes this statement true?

$x > 2$



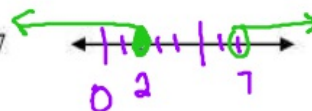
What values of x makes this statement true?

$-3 < x \leq 5$



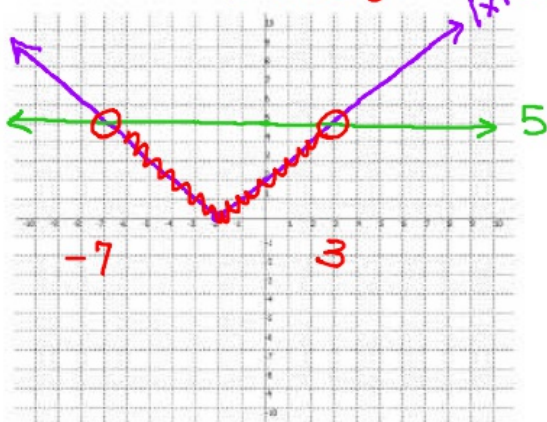
What values of x makes this statement true?

$x \leq 2$ or $x > 7$

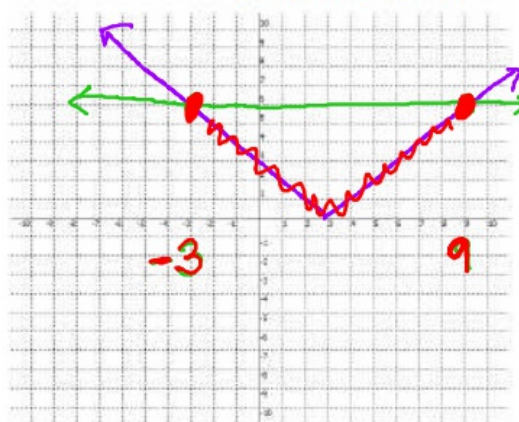


Use graphs to solve the following absolute value inequalities.

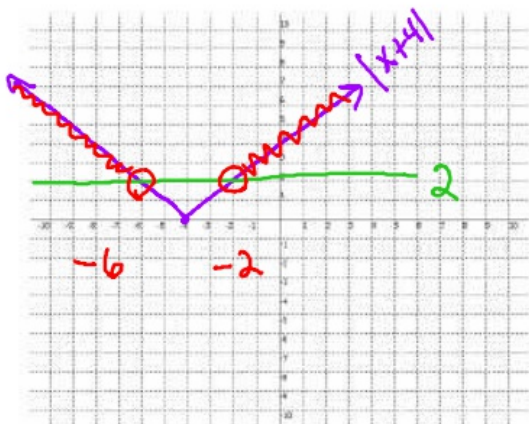
4. $|x+2| < 5$ *answer* $-7 < x < 3$



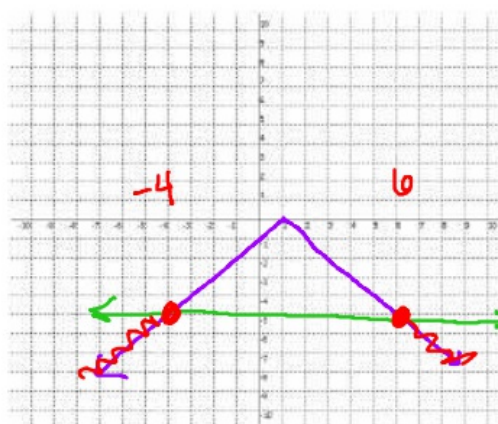
5. $|x-3| \leq 6$ *answer* $-3 \leq x \leq 9$



6. $|x+4| > 2$ $x < -6$ OR $x > -2$



7. $-|x-1| \leq -5$ $x \leq -4$ OR $x \geq 6$



gold
Homework!!
~~Green Worksheet~~