

ALG III

Solving Absolute Value
Equations and
Inequalities

8/28/17

Warm Up:
Solve.

$$|6| = 6$$

$$|-6| = 6$$

1.

$$|2x| = 8$$

$$2x = 8$$

$$x = 4$$

$$2x = -8$$

$$x = -4$$

2.

$$|3x - 2| = 10$$

$$3x - 2 = 10$$

$$3x = 12$$

$$x = 4$$

$$3x - 2 = -10$$

$$3x = -8$$

$$x = -\frac{8}{3}$$

EX #1

$$|2x - 3| = 5$$

$$2x - 3 = 5$$

$$2x = 8$$

$$x = 4$$

$$2x - 3 = -5$$

$$2x = -2$$

$$x = -1$$

EX #2:

$$3|x - 4| + 1 = 16$$

$$3|x - 4| = 15$$

$$|x - 4| = 5$$

$$x - 4 = 5$$

$$x = 9$$

$$x - 4 = -5$$

$$x = -1$$

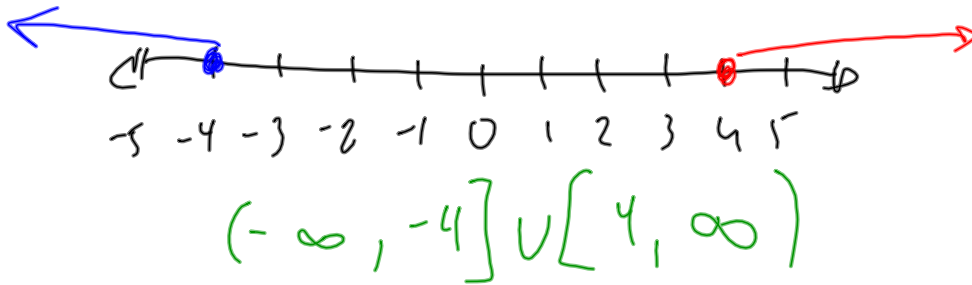
EX #3:

$$|x| \geq 4$$

OR

$$x \geq 4$$

$$x \leq -4$$



EX #4

$$|x - 10| \leq 1$$

And

$$x - 10 \leq 1$$

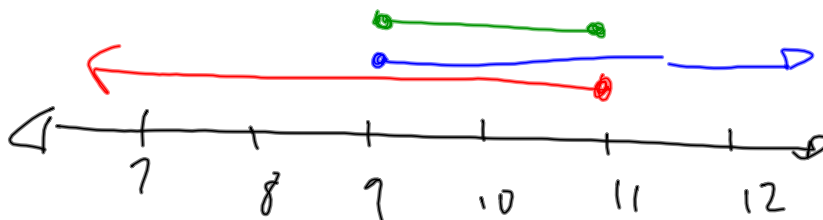
$$x \leq 11$$

overlap

$$x - 10 \geq -1$$

$$x \geq 9$$

$$[9, 11]$$



EX #5:

$$|2x-3|+1 \geq 7$$

$$|2x-3| \geq 6$$

OR

$$2x-3 \geq 6$$

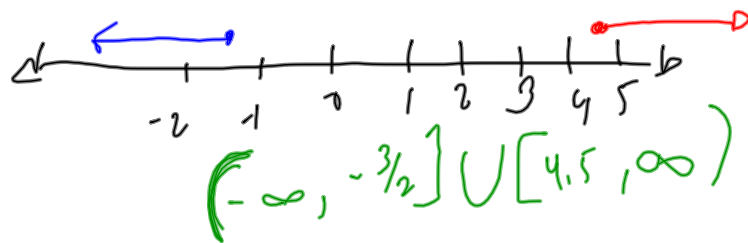
$$2x \geq 9$$

$$x \geq 9/2$$

$$2x-3 \leq -6$$

$$2x \leq -3$$

$$x \leq -3/2$$



EX #6:

$$|x-8|+4 \leq 3$$

$$|x-8| \leq -1$$

$$x-8 \leq -1$$

$$x \leq 7$$

And

$$x-8 \geq 1$$

$$x \geq 9$$



No Solution