

## Today's Plan:

**Learning Target (standard):** I will solve absolute value inequalities and write their solutions using set builder notation and interval notation.

**Students will:** Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, take notes over new material and complete practice problems over new concepts.

**Teacher will:** Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide examples of new concepts and assign students assessment problems over new concepts.

**Assessment:** Board work, homework check and homework assignment

**Differentiation:** Students will work at the board, go over and correct homework at their seats, actively engage in lecture over new concepts, practice new concepts with the aid of other students and the teacher and complete homework assignment.

p.89 #56 - 76 even

66)  $\emptyset$

68)  $\mathbb{R}$

56)  $\{x \mid x < 1, x > 3\}; (-\infty, 1) \cup (3, \infty)$

70)  $\{x \mid x < -1, x > 8\}; (-\infty, -1) \cup (8, \infty)$

58)  $\{x \mid 1 \leq x \leq 7\}; [1, 7]$

72)  $\left\{x \mid -2 < x < \frac{20}{7}\right\}; \left(-2, \frac{20}{7}\right)$

60)  $\{x \mid x \leq 1, x \geq 5\}; (-\infty, 1] \cup [5, \infty)$

74)  $\mathbb{R}$

62)  $\left\{x \mid -\frac{2}{3} < x < 2\right\}; \left(-\frac{2}{3}, 2\right)$

76)  $\left\{x \mid -3 < x < \frac{17}{5}\right\}; \left(-3, \frac{17}{5}\right)$

64)  $\left\{x \mid x < -\frac{12}{7}, x > 2\right\}; \left(-\infty, -\frac{12}{7}\right) \cup (2, \infty)$

Solve:

$$|7 + 3n| - 5 = -1$$

$$|7 + 3n| = 4$$

distance  
-4.4

$$7 + 3n = -4$$

$$3n = -11$$

$$n = -\frac{11}{3}$$

$$7 + 3n = 4$$

$$3n = -3$$

$$n = -1$$

$$n = -\frac{11}{3}, -1$$

Absolute Value Inequalities:

$$|x| \geq -4$$

\* what numbers have a distance from 0 that is bigger than -4?

$\mathbb{R}$

Solve:

$$|3x - 4| + 10 = 23$$

$$|3x - 4| = 13$$

distance  
-13, 13

$$3x - 4 = 13$$

$$3x = 17$$

$$x = \frac{17}{3}$$

$$3x - 4 = -13$$

$$3x = -9$$

$$x = -3$$

$$x = -3, \frac{17}{3}$$

Solve:

$$3 + |10x + 3| = 90$$

$$|10x + 3| = 87$$

distance  
-87, 87

$$10x + 3 = -87$$

$$10x = -90$$

$$x = -9$$

$$10x + 3 = 87$$

$$10x = 84$$

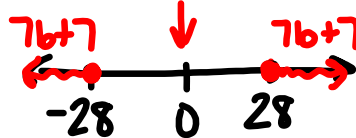
$$x = \frac{42}{5}$$

$$x = -9, \frac{42}{5}$$

Solve. Write the solution in set and interval form.

$$|7b + 7| + 10 \geq 38$$

$$|7b + 7| \geq 28$$



$$7b + 7 \leq -28$$

$$7b \leq -35$$

$$b \leq -5$$

$$7b + 7 \geq 28$$

$$7b \geq 21$$

$$b \geq 3$$

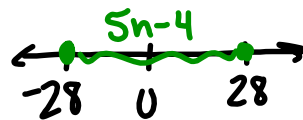
$$\{b \mid b \leq -5, b \geq 3\}$$

$$(-\infty, -5] \cup [3, \infty)$$

Solve. Write the solution in set and interval form.

$$7 \left[ \frac{|5n - 4|}{7} \leq 4 \right]$$

$$|5n - 4| \leq 28$$



$$-28 \leq 5n - 4 \leq 28$$

$$-28 \leq 5n - 4 \quad 5n - 4 \leq 28$$

$$-24 \leq 5n$$

$$5n \leq 32$$

$$-\frac{24}{5} \leq n$$

$$n \leq \frac{32}{5}$$

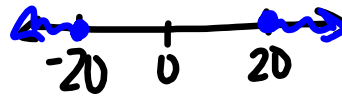
$$\{n \mid -\frac{24}{5} \leq n \leq \frac{32}{5}\}$$

$$\left[-\frac{24}{5}, \frac{32}{5}\right]$$

Solve. Write the solution in set and interval form.

$$5 \left[ \frac{|3x-8|}{5} \geq 4 \right]$$

$$|3x-8| \geq 20$$



$$3x-8 \leq -20$$

$$3x-8 \geq 20$$

$$3x \leq -12$$

$$3x \geq 28$$

$$x \leq -4$$

$$x \geq \frac{28}{3}$$

$$\{x \mid x \leq -4, x \geq \frac{28}{3}\}$$

$$(-\infty, -4] \cup \left[\frac{28}{3}, \infty\right)$$

Solve. Write the solution in set and interval form.

$$|4-7x|+1 > -2$$

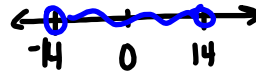
$$|4-7x| > -3$$

$$\mathbb{R}$$

$$(-\infty, \infty)$$

Solve. Write the solution in set and interval form.

$$-9 + |-10 - 4n| < 5$$



$$|-10 - 4n| < 14$$

$$-14 < -10 - 4n < 14$$

$$\begin{array}{ll} -14 < -10 - 4n & -10 - 4n < 14 \\ -4 < -4n & -4n < 24 \\ | > n & n > -6 \end{array}$$

$$| > n > -6$$

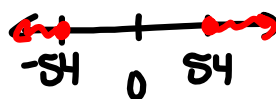
$$-6 < n < |$$

$$\{n \mid -6 < n < | \}$$

$$(-6, |)$$

Solve. Write the solution in set and interval form.

$$|7x - 9| - 4 \geq 50$$



$$|7x - 9| \geq 54$$

$$7x - 9 \leq -54 \quad 7x - 9 \geq 54$$

$$7x \leq -45 \quad 7x \geq 63$$

$$x \leq -\frac{45}{7} \quad x \geq 9$$

$$\{x \mid x \leq -\frac{45}{7}, x \geq 9 \}$$

$$(-\infty, -\frac{45}{7}] \cup [9, \infty)$$

Assignment:

Absolute Value Inequalities Practice

#1-10