

## Today's Plan:

**Learning Target (standard):** I will solve compound 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.74 #4 - 40 (by 4)

$$4) \{x \mid x > 2\}; (2, \infty)$$

$$8) \{x \mid x \geq -3\}; [-3, \infty)$$

$$12) \{x \mid x \leq -1\}; (-\infty, -1]$$

$$16) \{x \mid x < 3\}; (-\infty, 3)$$

$$20) \{x \mid x \geq -3\}; [-3, \infty)$$

$$24) \{x \mid x \geq -3\}; [-3, \infty)$$

$$28) \left\{ x \mid x > \frac{14}{11} \right\}; \left( \frac{14}{11}, \infty \right)$$

$$32) \left\{ x \mid x \leq \frac{3}{8} \right\}; \left( -\infty, \frac{3}{8} \right]$$

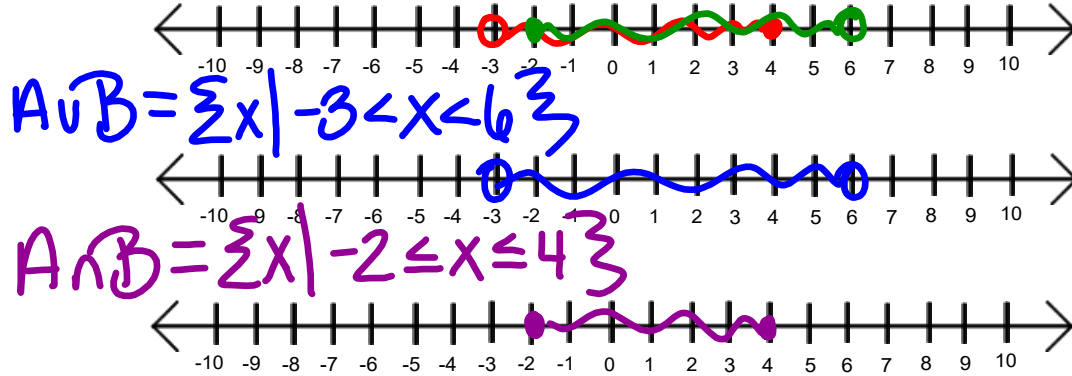
$$36) \{x \mid x > -28\}; (-28, \infty)$$

$$40) \left\{ x \mid x \leq \frac{7}{4} \right\}; \left( -\infty, \frac{7}{4} \right]$$

Graph the union and the intersection. Find the solution set of each.

$$A = \{x \mid -3 < x \leq 4\} \bullet$$

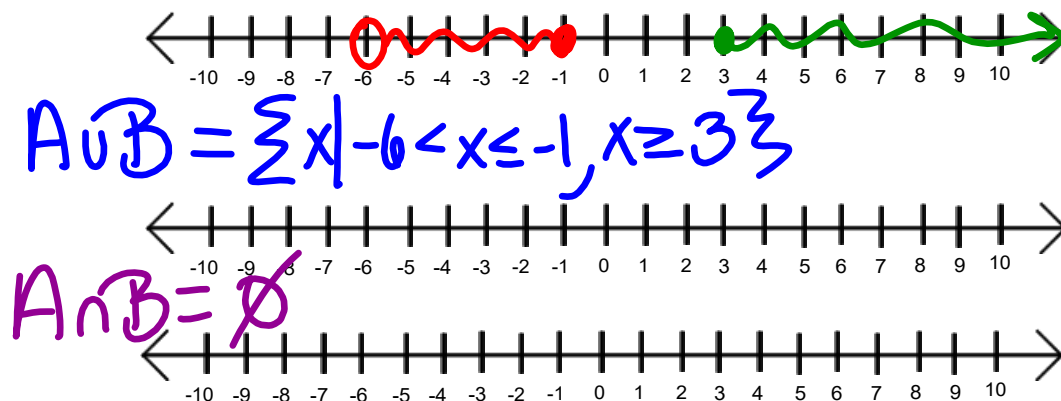
$$B = \{x \mid -2 \leq x < 6\} \bullet$$



Graph the union and the intersection. Find the solution set of each.

$$A = \{x \mid -6 < x \leq -1\} \bullet$$

$$B = \{x \mid x \geq 3\} \bullet$$



Solve. Write the solution as a set and an interval.

$$2 - 5(x + 1) \geq 3(x - 1) - 8$$

$$2 - 5x - 5 \geq 3x - 3 - 8$$

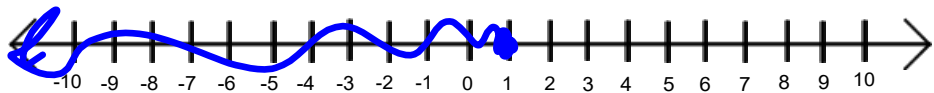
$$-5x - 3 \geq 3x - 11$$

$$-8x \geq -8$$

$$x \leq 1$$

$$\{x \mid x \leq 1\}$$

$$(-\infty, 1]$$



Solve. Write the solution as a set and an interval.

$$24 \left[ \frac{2-x}{4} - \frac{3}{8} \geq \frac{2}{3}x \right]$$

$$6(2-x) - 9 \geq 16x$$

$$12 - 6x - 9 \geq 16x$$

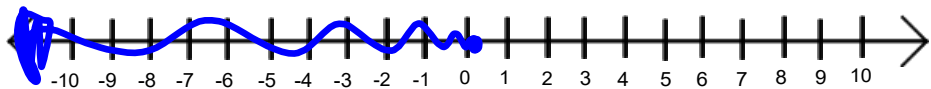
$$-6x + 3 \geq 16x$$

$$-22x \geq -3$$

$$x \leq \frac{3}{22}$$

$$\{x \mid x \leq \frac{3}{22}\}$$

$$(-\infty, \frac{3}{22}]$$



Solve. Write the solution as a set and an interval.

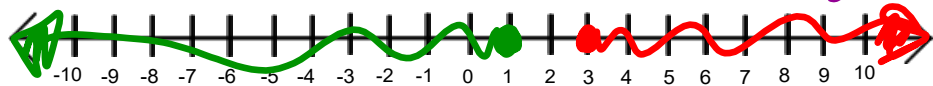
$$x + 2 \geq 5 \quad \downarrow \text{or} \quad 3x \leq 3$$

$$x \geq 3 \quad \quad \quad x \leq 1$$

"union"  
→ together

$$\{x \mid x \leq 1, x \geq 3\}$$

$$(-\infty, 1] \cup [3, \infty)$$



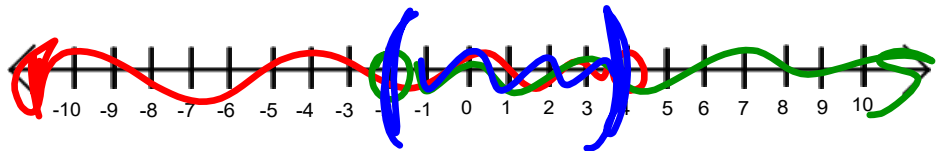
Solve. Write the solution as a set and an interval.

$$-2x > -8 \quad \downarrow \text{and} \quad -3x < 6$$

$$x < 4 \quad \quad \quad x > -2$$

"intersection"  
- overlap

$$\{x \mid -2 < x < 4\} \quad (-2, 4)$$



Solve. Write the solution as a set and an interval.

$$-2x + 11 < 4x - 7 \leq -x + 18$$

\*Keep "x" in the middle

$$-2x + 11 < 4x - 7$$

$$4x - 7 \leq -x + 18$$

$$11 < 6x - 7$$

$$5x \leq 25$$

$$18 < 6x$$

$$x \leq 5$$

$$3 < x$$

$$3 < x \leq 5 \quad (3, 5]$$

$$\{x \mid 3 < x \leq 5\}$$

Assignment:

p.78 #44 - 80 (by 4)