

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.

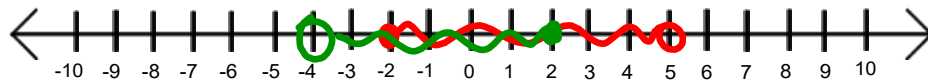
p.78 #44 - 80 (by 4)

- | | |
|--|--|
| 44) $\{x \mid -2 \leq x \leq 4\}; [-2, 4]$ | 68) \emptyset |
| 48) $\{x \mid -4 < x < 2\}; (-4, 2)$ | 72) $\left\{x \mid \frac{17}{7} \leq x \leq \frac{45}{7}\right\}; \left[\frac{17}{7}, \frac{45}{7}\right]$ |
| 52) $\{x \mid x < -3\}; (-\infty, -3)$ | 76) \mathbb{R} |
| 56) $\{x \mid -2 < x < 1\}; (-2, 1)$ | 80) $\{x \mid x < -8, x > 15\}; (-\infty, -8) \cup (15, \infty)$ |
| 60) $\{x \mid 2 < x < 6\}; (2, 6)$ | |
| 64) $\left\{x \mid x < -\frac{5}{3}, x > 5\right\}; \left(-\infty, -\frac{5}{3}\right) \cup (5, \infty)$ | |

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

$$A = \{x \mid -2 \leq x < 5\}$$

$$B = \{x \mid -4 < x \leq 2\}$$



$$A \cup B = \{x \mid -4 < x < 5\}$$



$$A \cap B = \{x \mid -2 \leq x \leq 2\}$$



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

$$3 \left[-2 \leq \frac{2}{3}x - 1 \leq 3 \right]$$

$$-6 \leq 2x - 3 \leq 9$$

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

$$2x - 3 \leq 9$$

$$-3 \leq 2x$$

$$2x \leq 12$$

$$\left[-\frac{3}{2}, 6 \right]$$

$$-\frac{3}{2} \leq x$$

$$x \leq 6$$

$$-\frac{3}{2} \leq x \leq 6$$

$$\{x \mid -\frac{3}{2} \leq x \leq 6\}$$

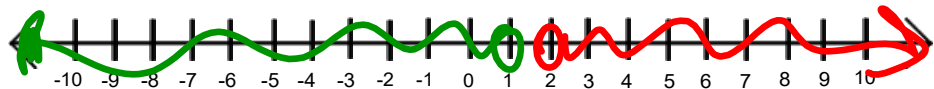


Solve. Write the solution as a set and an interval.

$$2x - 3 > 1 \quad \text{and} \quad 3x - 1 < 2$$

$$2x > 4 \quad \text{"overlap"} \quad 3x < 3$$

$$x > 2 \quad \emptyset \quad x < 1$$



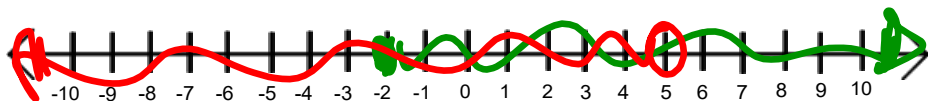
Solve. Write the solution as a set and an interval.

$$3x - 11 < 4 \quad \text{or} \quad 4x + 9 \geq 1$$

$$3x < 15 \quad \text{"together"} \quad 4x \geq -8$$

$$x < 5 \quad \mathbb{R} \quad x \geq -2$$

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



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

$$3 - 2x > 7 \quad \text{and} \quad 5x + 2 > -18$$

$$-2x > 4 \quad \text{"overlap"} \quad 5x > -20$$

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

$$\{x \mid -4 < x < -2\}$$

$$(-4, -2)$$



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

$$-6 \leq 5x + 14 \leq 24$$

$$-6 \leq 5x + 14 \quad 5x + 14 \leq 24$$

$$-20 \leq 5x \quad 5x \leq 10$$

$$-4 \leq x \quad x \leq 2$$

$$\{x \mid -4 \leq x \leq 2\}$$

$$[-4, 2]$$

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

$$8 + 6r < 2r - 8$$

$$4r < -16$$

$$r < -4$$

and

"overlap"

$$4r - 7 \leq 5r + 4$$

$$-r \leq 11$$

$$r \geq -11$$

$$\{r \mid -11 \leq r < -4\}$$

$$[-11, -4)$$



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

$$-8 - 3a \leq 2a - 8 < 6 + a$$

$$-8 - 3a \leq 2a - 8 \quad 2a - 8 < 6 + a$$

$$-8 \leq 5a - 8 \quad a < 14$$

$$0 \leq a$$

$$\{a \mid 0 \leq a < 14\}$$

$$[0, 14)$$

Assignment:

Inequalities Practice

#1-10