Algebra 1   5.3   *7th grade standard
Solve multi-step linear inequalities*
Use the distributive property to solve linear inequalities*

order of operations
distributive property
inequality
empty set
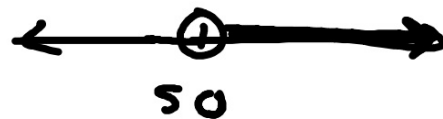all real numbers   X ⌒‿‿‿‿‿
Whiteboards
Triangle puzzle

                              Quiz 5.1-5.2

3. *Two more than half of a number is greater than twenty-seven.*

$$\frac{1}{2}n \quad \begin{array}{c} +2 \\ -2 \end{array} > \begin{array}{c} 27 \\ -2 \end{array}$$

$$\frac{2}{1} \cdot \frac{1}{2}n > 25 \cdot \frac{2}{1}$$

$$n > 50$$

50

Example 4 Distributive Property

Solve $4(3t - 5) + 7 \geq 8t + 3$. Graph the solution on a number line.

$$12t - 20 + 7 \geq 8t + 3$$
$$-8t \quad +13 \qquad -8t + 13$$
$$\overline{}$$
$$\frac{4t}{4} \geq \frac{16}{4}$$
$$t \geq 4$$

4A. $6(5z - 3) \le 36z$

4B. $2(h + 6) > -3(8 - h)$

What does it look like when there is no solution to an equation?

What does it look like when the solution is all real numbers?

Example 5 Empty Set and All Reals

Solve each inequality. Check your solution.

a. $9t - 5(t - 5) \leq 4(t - 3)$

$$9t - 5t + 25 \leq 4t - 12 \qquad NS$$

$$14t + 25 \leq 4t - 12$$
$$-4t - 25 \quad -4t - 25$$
$$\overline{ 0 \leq -37}$$

b. $3(4m + 6) \leq 42 + 6(2m - 4)$

$$12m + 18 \leq 42 + 12m - 24$$
$$\underline{-12m - 18 \qquad -18 - 12m}$$
$$0 \leq 0$$

all numbers

P. 301

19-34 all

Solve each inequality. Check your solution.

5A. $18 - 3(8c + 4) \geq -6(4c - 1)$

5B. $46 \leq 8m - 4(2m + 5)$

Triangle puzzles