

$\leq < > \geq$

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

Whiteboards

Triangle puzzle

$$a + 2 > -2$$

$$a = -2$$

$$4A. 6(5z + 3) \leq 36z$$

$$\begin{array}{rcl} 30z + -18 & \leq & 36z \\ -30z & & -30z \\ \hline -18 & \leq & 6z \\ \frac{-18}{6} & & \frac{6z}{6} \end{array}$$

$$-3 \leq z$$

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

$$\begin{array}{r} 2h + 12 > -24 + 3h \\ -2h \quad \quad -2h \\ \hline 12 > -24 + h \\ +24 \quad +24 \\ \hline 36 > h \\ h < 36 \end{array}$$

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

Solve each inequality. Check your solution.

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

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

$$2(x-3) \geq 2x + -6$$

$$\begin{array}{r} 2x - 6 \geq 2x + -6 \\ -2x \quad \quad -2x \end{array}$$

$$-6 \geq -6$$

all numbers

$$3(x-5) < 12 + 3x$$

$$\begin{array}{r} 3x + -15 < 12 + 3x \\ -3x \quad \quad \quad -3x \end{array}$$

$$-15 < 12$$

all numbers

$$2(x+6) < 2x-12$$

$$\begin{array}{rcl} 2x + -12 & < & 2x - 12 \\ -2x & & -2x \end{array}$$

$$-12 < -12$$

NS

$$3(x+5) > 3x+22$$

$$\begin{array}{rcl} 3x + 15 & > & 3x + 22 \\ -3x & & -3x \end{array}$$

$$15 > 22$$

NS

$N=0$ ~~NS~~