

3.1 – Solving Simple Linear Inequalities

The method of solving linear inequalities is similar to the one used for solving linear equations. Most inequalities have many solutions, which are graphed on a number line. ***Remember when multiplying or dividing by a negative number, you must reverse the inequality.***

Examples:

Always move x to the left side!

1. $3x - 2 \leq 5x - 3$

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

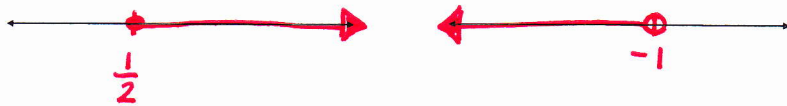
$$\frac{-2x}{-2} \leq \frac{-1}{-2}$$

$$x \geq \frac{1}{2}$$

2. $4 - 2x > 6$

$$\frac{-2x}{-2} > \frac{2}{-2}$$

$$x < -1$$



** With x on the left, shade the direction of the arrow!*

3. $8(2x - 1) > 11x - 17$

$$16x - 8 > 11x - 17$$

$$5x - 8 > -17$$

$$5x > -9$$

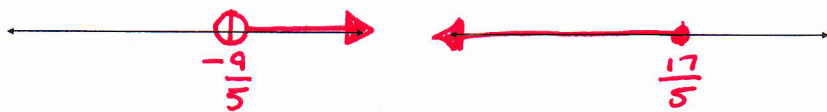
$$x > \frac{-9}{5}$$

4. $5(x - 2) \leq 7$

$$5x - 10 \leq 7$$

$$5x \leq 17$$

$$x \leq \frac{17}{5}$$



** Use an open circle for $<$ or $>$.*

** Use a closed circle for \leq or \geq .*