

Name: \_\_\_\_\_

Math 7.2, Period \_\_\_\_\_

Mr. Rogove

Date: \_\_\_\_\_

**LEARNING OBJECTIVE:** We will solve and graph solutions to inequalities in 1 variable. (Alg1M1L7)

**CONCEPT DEVELOPMENT:**

**SOLVING INEQUALITIES V. SOLVING EQUATIONS**

$$3x - 3 > 12$$

$$\begin{array}{r} +3 \\ +3 \end{array}$$

$$\frac{3x}{3} > \frac{15}{3}$$

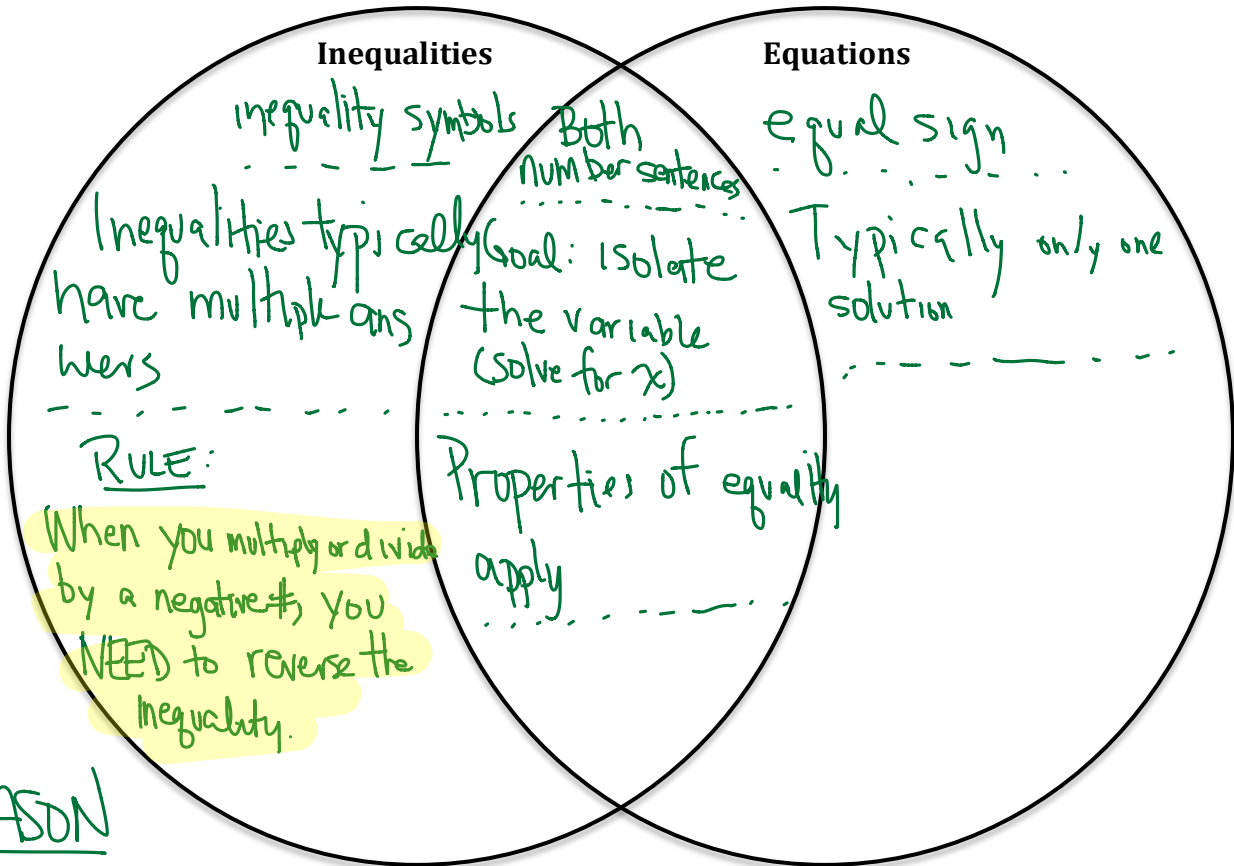
$$x > 5$$

$$3x - 3 = 12$$

$$\begin{array}{r} +3 \\ +3 \end{array}$$

$$\frac{3x}{3} = \frac{15}{3}$$

$$x = 5$$



REASON

$$-3x > 12$$

$$\begin{array}{r} +3x \\ +3x \end{array}$$

$$0 > 3x + 12$$

$$\begin{array}{r} -12 \\ -12 \end{array}$$

$$-12 > 3x$$

$$\frac{-12}{3} > \frac{3x}{3}$$

$$-4 > x$$

$$x < -4$$

**GUIDED PRACTICE:****Steps for Solving Inequalities in One Variable**

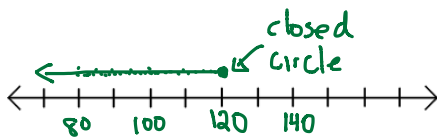
1. Use Properties of Inequality to isolate your variable.
2. Reverse the inequality symbol if multiplying or dividing by a **NEGATIVE** number.
3. Graph your inequality on a number line.

$$\frac{240}{3} + \frac{3d}{3} \leq \frac{600}{3}$$

$$80 + d = 200$$

$$\begin{array}{r} -80 \\ -80 \end{array}$$

$$d \leq 120$$



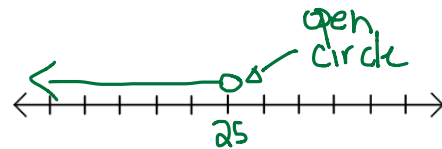
If a part of the solution  
the circle is closed

$$100 + 4f < 200$$

$$\begin{array}{r} -100 \\ -100 \end{array}$$

$$\frac{4f}{4} < \frac{100}{4}$$

$$f < 25$$



If not a part of the solution,  
circle is open

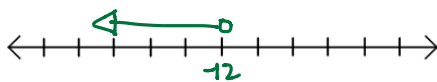
$$12 - 5k > 72$$

$$\begin{array}{r} -12 \\ -12 \end{array}$$

$$\begin{array}{r} -5k > 60 \\ -5 & -5 \end{array}$$

$$k < -12$$

When you multiply/divide by  
a negative#, SWITCH the  
inequality..

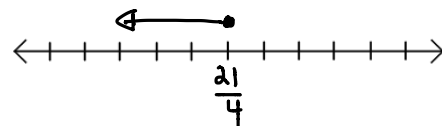


$$-\frac{2}{3}x + 3 \geq -\frac{1}{2}$$

$$\begin{array}{r} -3 \\ -3 \end{array}$$

$$-\frac{3}{2} \left( -\frac{2}{3}x \right) \geq \left( -\frac{7}{2} \right) - \frac{3}{2}$$

$$x \leq \frac{21}{4}$$



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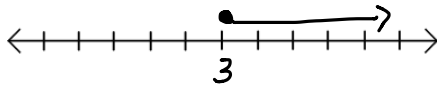
$$24 - 6y \leq 5y - 9$$
$$+6y \quad +6y$$

$$24 \leq 11y - 9$$
$$+9 \quad +9$$

$$\frac{33}{11} \leq \frac{11y}{11}$$

$$3 \leq y$$

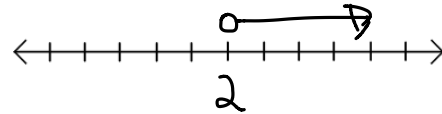
$$y \geq 3$$



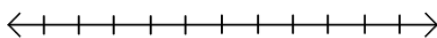
$$17 - 5m < 8m - 9$$

$$2 < m$$

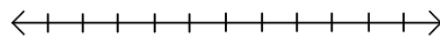
$$m > 2$$



$$6(z - 5) \geq -5(7 - 2z)$$



$$-2(m + 1) > 3(m + 1)$$

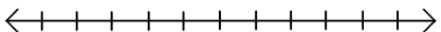
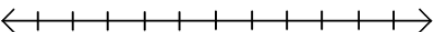
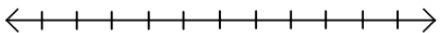
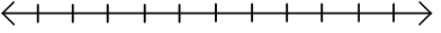


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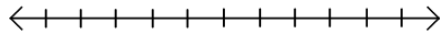
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$2x - 7 + x < 3x + 10$  	$2x + 4 > 4x - 7 - 2x$  
$2(x + 4) < 6x - 2 - 4x$  	$5(x + 4) \geq 8x + 25 - 3x$  

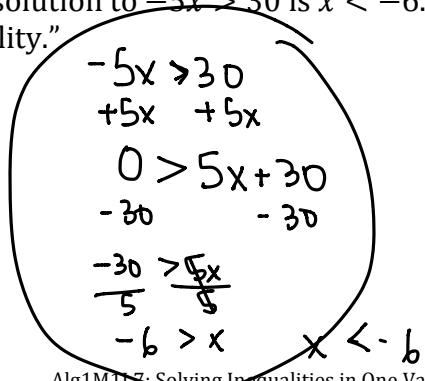
**CLOSURE:**

1. Find the solution set to the following and graph:

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



2. Josh was absent today and asked Neil why the solution to  $-5x > 30$  is  $x < -6$ . Provide a better answer than "you flip the inequality."



$-5x > 30$   
 $+5x \quad +5x$   
 $0 > 5x + 30$   
 $-30 \quad -30$   
 $\frac{-30}{5} > \frac{5x}{5}$   
 $-6 > x \quad x < -6$

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**INDEPENDENT PRACTICE:**

Personal Math Trainer! Homework from Go Math.

**ACTIVATING PRIOR KNOWLEDGE:**

**NOTES:**

Maps to lesson 4-2 of Algebra 1 (GO MATH)

Homework: Khan Academy, Multi-step linear inequalities.