Name: _____ Math 7.2, Period _____

Mr. Rogove Date: _____

Learning Objective: We will solve and graph solutions to inequalities in 1 variable. (Lesson 87)

Concept Development:

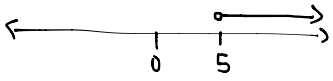
Solving Inequalities v. Solving Equations

$3x - 3 > 12$

$+3 \quad +3$

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

$x > 5$



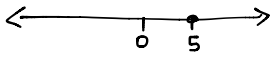
$3x - 3 = 12$

$+3 \quad +3$

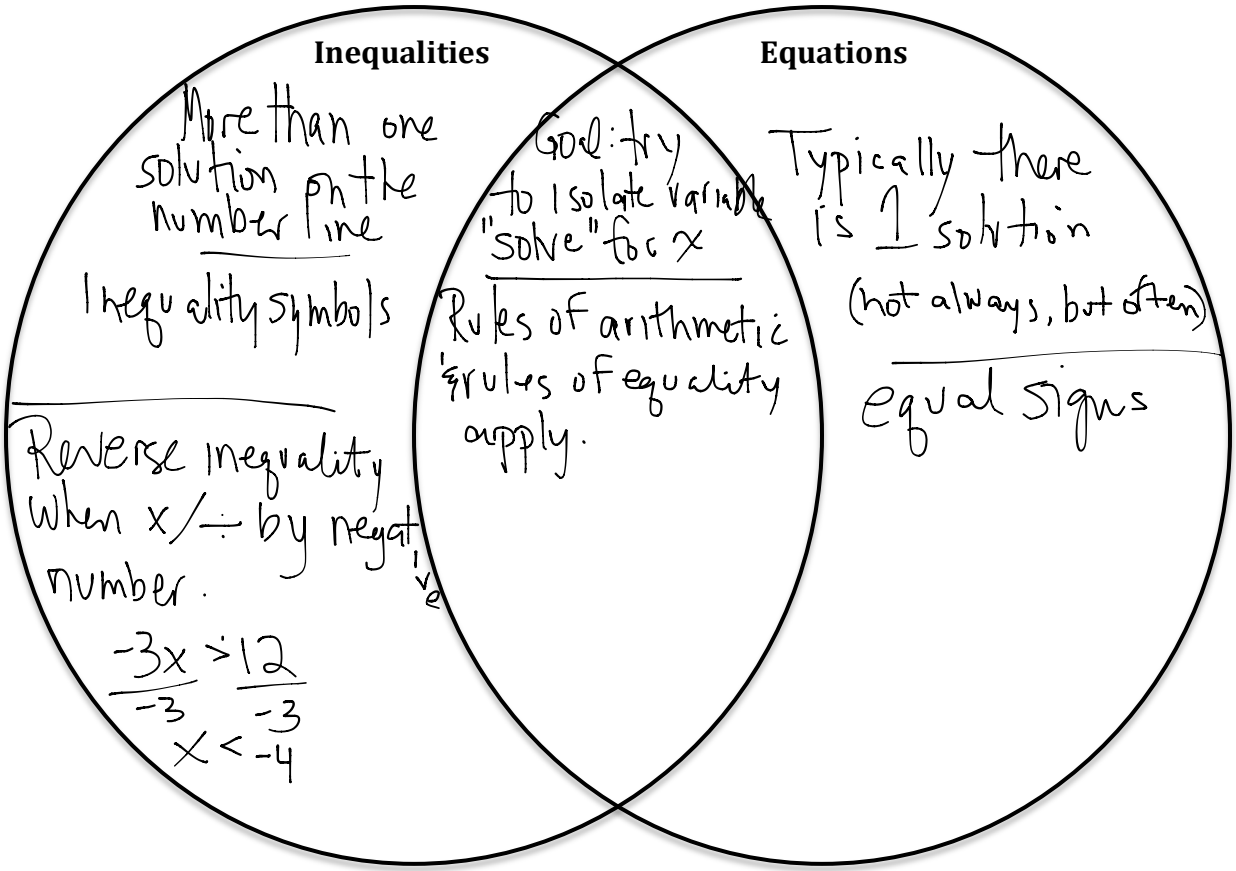
$\frac{3x}{3} = \frac{15}{3}$

$\boxed{x = 5}$

The equation is true when $x = 5$.



$\frac{x}{x} = 1$



Name: _____ Math 7.2, Period _____

Mr. Rogove Date: _____

Guided Practice:

Steps for Solving Inequalities in One Variable

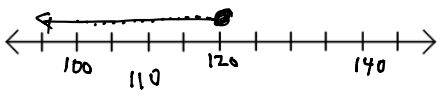
1. Use Properties of Inequality to isolate your variable.
2. Reverse the inequality symbol if multiplying or dividing by a NEGATIVE number.
3. Graph your inequality on a number line.

$240 + 3d \leq 600$

$-240 \quad -240$

$\frac{3d}{3} \leq \frac{360}{3}$

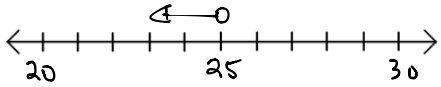
$d \leq 120$



$100 + 4f < 200$

$25 > f$

$f < 25$

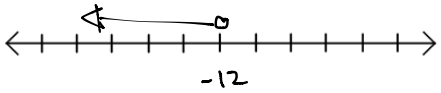


$12 - 5k > 72$

$-12 \quad -12$

$\frac{-5k}{-5} > \frac{60}{-5}$

$k < -12$

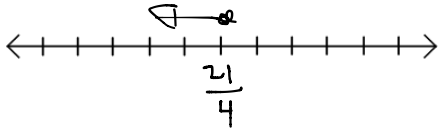


$-\frac{2}{3}x + 3 \geq -\frac{1}{2}$

$-3 \quad -3$

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

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



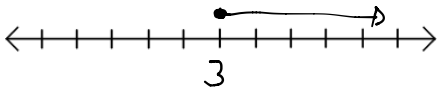
Name: _____ Math 7.2, Period _____

Mr. Rogove Date: _____

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

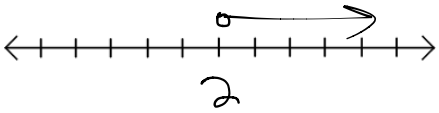
$y \geq 3$

$3 \leq y$



$17 - 5m < 8m - 9$

$m > 2$



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

$6z - 30 \geq -35 + 10z$

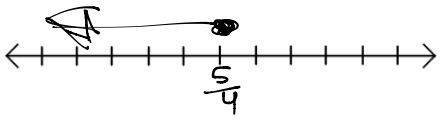
$-6z \quad -6z$

$-30 \geq -35 + 4z$

$+35 \quad +35$

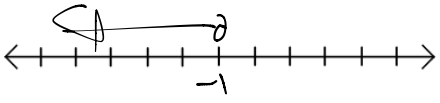
$\frac{5}{4} \geq \frac{4z}{4}$

$\frac{5}{4} \geq z$



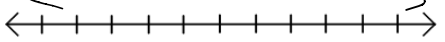
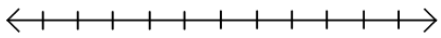
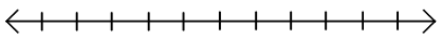
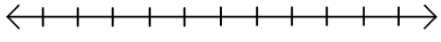
$-2(m + 1) > 3(m + 1)$

$m < -1$



Name: _____ Math 7.2, Period _____

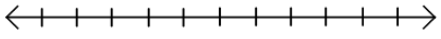
Mr. Rogove Date: _____

$2x - 7 + x < 3x + 10$ $3x - 7 < 3x + 10$ $-3x \quad -3x$ $-7 < 10$ $\{\mathbb{R}\}$ All real #'s 	$2x + 4 > 4x - 7 - 2x$ $2x + 4 > 2x - 7$ $\mathbb{R}$ 
$2(x + 4) < 6x - 2 - 4x$ $2x + 8 < 2x - 2$ $8 < -2$ $\emptyset \quad \{\}$ No soln 	$5(x + 4) \geq 8x + 25 - 3x$ $5x + 20 \geq 5x + 25$ $\emptyset \quad \{\}$ No soln 

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."

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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.