1-2-18

Aim: SWBAT solve and graph inequalities.

HW: Finish WS

Pg. 157 # 30 – 36 & Pg. 320 # 1 – 17 (due Thursday)

Inequalities Test Friday

Do Now: Graph the solutions to rows I, J, and K.

Name _____ Date_____

Solving Inequalities

Period ___

Solve and graph.

$-x < 6$ $x > -6$ 	$-2x \leq 4$ $x \geq -2$ 	$\frac{5}{1} \cdot \frac{x}{5} \geq -3 \cdot \frac{5}{1}$ $x \geq -15$ 	$-8 \cdot -\frac{x}{8} > -2 \cdot -8$ $x < 16$
$-x < -6$ $x > 6$ 	$\frac{2x}{2} \leq \frac{4}{2}$ $x \leq 2$ 	$\frac{-5}{1} \cdot \frac{x}{-5} \geq -3 \cdot \frac{-5}{1}$ $x \leq 15$ 	$\frac{8}{1} \cdot \frac{x}{8} > -2 \cdot \frac{8}{1}$ $x > -16$
$1 < -x$ $-1 > x$ 	$\frac{2x}{2} \leq \frac{-4}{2}$ $x \leq -2$ 	$\frac{-5}{1} \cdot \frac{-x}{5} \geq 3 \cdot \frac{-5}{1}$ $x \leq -15$ 	$8 \cdot \frac{x}{8} > 2 \cdot 8$ $x > 16$

I

J

K

Distributive Property Inequalities

- Simplify before you solve!!!!

Solve and graph.

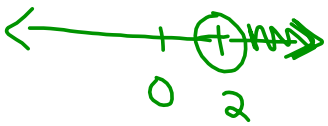
$3(x + 2) > 12$

$3x + 6 > 12$

$-6 \quad -6$

$\frac{3x}{3} > \frac{6}{3}$

$x > 2$



$-5(-2x + 6) \leq -10$

$10x - 30 \leq -10$

$+30 \quad +30$

$\frac{10x}{10} \leq \frac{20}{10}$

$x \leq 2$

$3(x+2) > 12$

$3(10+2) \stackrel{?}{>} 12$

$3(12) \stackrel{?}{>} 12$

$36 > 12$ True

$3(x+2) \stackrel{?}{\geq} 12$

$3(0+2) \stackrel{?}{>} 12$

$3(2) \stackrel{?}{>} 12$

$6 \not> 12$ false

Combining Like Terms Inequalities

- Simplify before you solve!!!!

Solve and graph.

$2x - 6x + 3 \leq 11$

$-4x + 3 \leq 11$

$-3 \quad -3$

$-4x \leq 8$

$\frac{-4x}{-4} \leq \frac{8}{-4}$

$x \geq -2$

$-5x + 3 - 13 > 10$

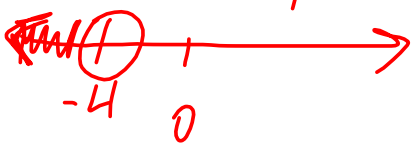
$-5x - 10 > 10$

$+10 \quad +10$

$-5x > 20$

$\frac{-5x}{-5} > \frac{20}{-5}$

$x < -4$



Variables on Both Sides Inequalities

- **Eliminate a variable term to get a positive coefficient.**

Solve and graph.

$2x + 3 < 6x - 9$

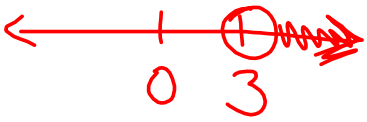
$-2x \quad -2x$

$3 < 4x - 9$

$+9 \quad +9$

$\frac{12}{4} < \frac{4x}{4}$

$3 < x$



$-5x + 30 \geq -x + 8$

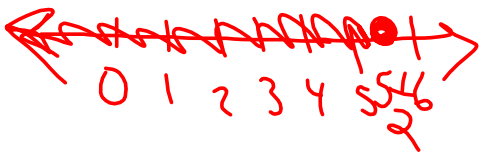
$+5x \quad +5x$

$30 \geq 4x + 8$

$-8 \quad -8$

$\frac{22}{4} \geq \frac{4x}{4}$

$5\frac{1}{2} \geq x$



Name _____ Date_____

Solving Inequalities

Period ___

$-1 < -x$	$-2x \leq -4$	$\frac{-x}{5} \geq -3$	$\frac{x}{-8} > 2$

Solve and graph.

$x + 1 < -6$	$-2x + 1 \leq -4$	$\frac{x}{5} + 1 \geq -3$	$2x + 3x - 1 \leq -4$	$2(x - 1) \leq -4$
$x - 1 < -6$	$2x - 1 \leq -4$	$\frac{-x}{5} - 1 \geq -3$	$2x - 3x - 1 \leq -4$	$-2(x - 1) \leq -4$