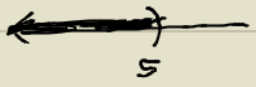
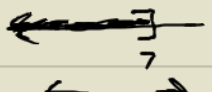
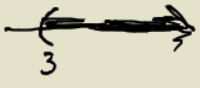
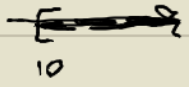
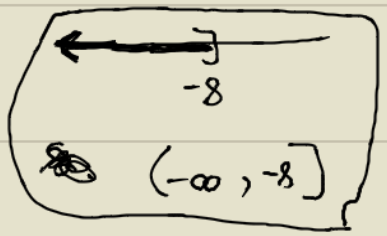
Form	Set Builder Notation	Interval Notation	Graph
1. $x<5$	$\{x \mid x<5\}$	$(-\infty, 5)$	
2. $x \leq 7$	$\{x \mid x \leq 7\}$	$(-\infty, 7]$	
3. $x>3$	$\{x \mid x>3\}$	$(3, \infty)$	
4. $x \geq 10$	$\{x \mid x \geq 10\}$	$[10, \infty)$	

1. $x \leq -8$



2. $[2, \infty)$

Solving Linear Inequalities

NOTE: AT ANY STEP COMBINE LIKE TERMS AND COMBINE NUMBERS

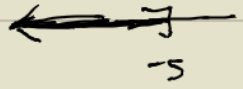
1. GET RID OF PARENTHESIS
2. GET RID OF FRACTIONS
3. GET EVERYTHING WITH AN X ON LEFT SIDE, NUMBERS ON RIGHT SIDE
4. DIVIDE BOTH SIDES BY THE NUMBER IN FRONT OF THE X

NOTE: IF YOU MULTIPLY OR DIVIDE BOTH SIDES BY A NEGATIVE NUMBER, FLIP THE INEQUALITY SYMBOL

3. $x+7 \leq 2$ $\{x \mid x \leq -5\}$

$x \leq 2-7$ $(-\infty, -5]$

$x \leq -5$



4. $-8x \geq -24$

$\frac{-8x}{-8} \leq \frac{-24}{-8}$

$x \leq 3$

5. $3x-5>7$

$3x>7+5$

$3x>12$

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

$x>4$

6. $-5(2-3x) > x+4$

$-10+15x > x+4$

$15x-x > 4+10$

$14x > 14$

$\frac{14x}{14} > \frac{14}{14}$

$x>1$

7. $7x-2 > \frac{1}{4}(x-3)$

$7x-2 > \frac{1}{4}x - \frac{3}{4}$

$4(7x)+4(-2) > 4(\frac{1}{4}x)+4(-\frac{3}{4})$

$28x-8 > x-3$

$28x-x > -3+8$

$27x > 5$

$\frac{27x}{27} > \frac{5}{27}$

$x > \frac{5}{27}$

8. $7x-3(x-2) \leq x+4$

$7x-3x+6 \leq x+4$

$4x+6 \leq x+4$

$4x-x \leq 4-6$

$3x \leq -2$

$\frac{3x}{3} \leq \frac{-2}{3}$

$x \leq \frac{-2}{3}$