Name _____

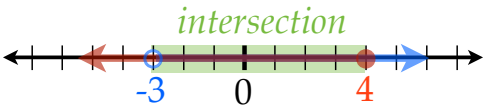
Solving Compound Inequalities Involving "And"

Date _____ Period _____

Compound Inequality

a pair of inequalities joined by an *and* or *or*.

$x \leq 4$ *and* $x > -3$



To solve an inequality with *and*, find the values that satisfy *both* inequalities

The *intersection* is the solution to a compound inequality with *and*.

Compound Inequality

a pair of inequalities joined by an *and* or *or*.

$x \leq 4$ *and* $x > -3$

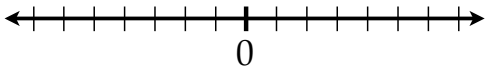
intersection
-3
0
4

Set Notation: $\{x \mid -3 < x \leq 4\}$

Interval Notation: $(-3,4]$

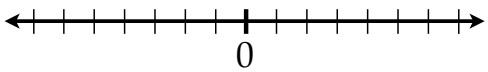
Solve and graph the following Compound Inequalities.

$$3x + 4 \geq -11 \quad \textit{and} \quad 2x - 6 < 6$$



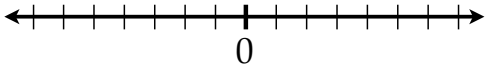
Solve and graph the following Compound Inequalities.

$$4x - 6 < 18 \quad \textit{and} \quad -4x + 6 \geq 10$$

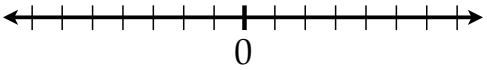


Solve and graph the following Compound Inequalities.

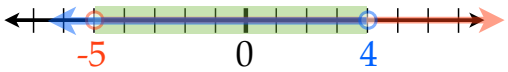
$-9 \leq 2x - 5 \leq 5$

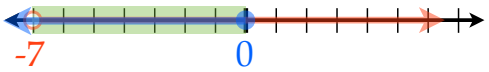


$-12 < -2x - 4 < 10$



Determine the Compound Inequality for each graph.



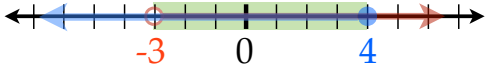


Compound Inequality

a pair of inequalities joined by an *and* or *or*.

$x > -3$ *and* $x \leq 4$

intersection



$-3 < x \leq 4$

To solve an inequality with *and*, find the values that satisfy *both* inequalities
The *intersection* is the solution to a compound inequality with *and*.