

5-4 Solving Compound Inequalities

using "and" & "or"

When considered together, two inequalities form a **compound** inequality.

The solution to a compound inequality containing **AND** can be found by graphing both inequalities and determining the **intersection** of the graphs.

EX: $x \geq 3$ and $x < 7$

$x \geq 3$ 

$x < 7$ 

$x \geq 3$ and $x < 7$ 

Example 2: Solve and Graph:

$$y - 3 \geq -11 \text{ AND } y - 3 \leq -8$$

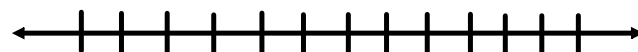


Example 4: Solve and Graph

$$6 \leq p + 7 \leq 10$$

$$6 < p + 7 < 10$$

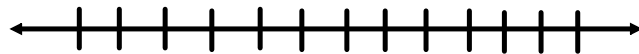
$$6 < x + 7 < 10$$



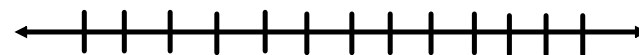
The solution to a compound inequality containing **OR** can be found by graphing both inequalities and determining the **union** of the graphs.

EX: $x \geq 3$ OR $x < 7$

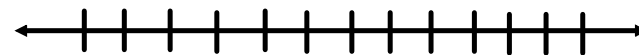
$$x \geq 3$$



$$x < 7$$

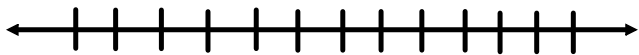


$$x \geq 3 \text{ or } x < 7$$



Example 5: Solve and Graph:

$$4k - 7 \leq 25 \text{ OR } 12 - 9k \geq 30$$



Example 6: Solve and Graph

$$x < 9 \text{ OR } 2 + 4x < 10$$

