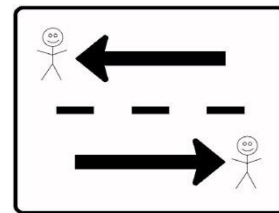


Name Key

Date \_\_\_\_\_

# 1.6 – Compound Inequalities

## Alg 2 Trig G Notes



Solving and graphing compound inequalities

To solve an “AND” compound inequality:

$$10 \leq 3y - 2 < 19$$

STEP 1: rewrite the compound inequality into 2 separate parts

$$10 < 3y - 2$$

$$3y - 2 < 19$$

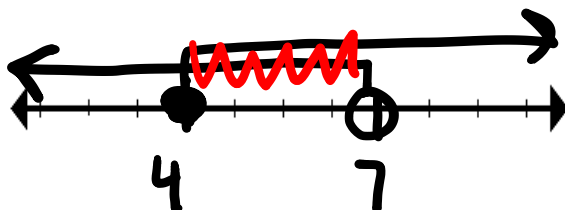
STEP 2: solve each inequality

$$12 \leq 3y$$
$$4 \leq y$$

$$3y < 21$$
$$y < 7$$

STEP 3: Graph each inequality

$$y \geq 4$$



To solve an “OR” compound inequality:

$$x + 3 < 2 \quad \text{or} \quad -x \leq -4$$

STEP 1: solve each inequality

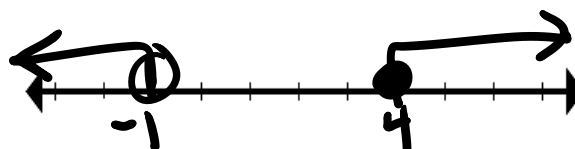
$$x < -1$$

open, left

$$x \geq 4$$

closed, right

STEP 2: Graph each inequality

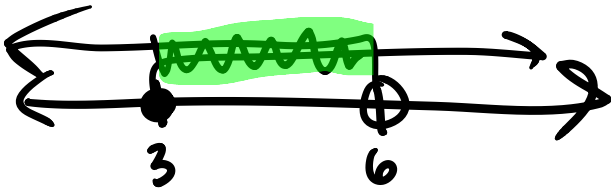


PRACTICE!

1.  $11 \leq 2x + 5 < 17$

$$\begin{array}{l} 11 \leq 2x + 5 \\ 6 \leq 2x \\ 3 < x \end{array} \quad \begin{array}{l} 2x + 5 < 17 \\ 2x < 12 \\ x < 6 \end{array}$$

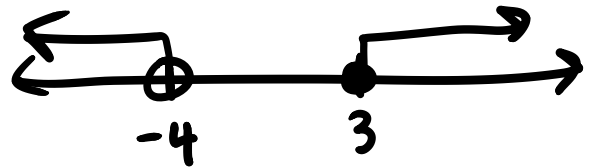
$$x \geq 3$$



2.  $x + 5 < 1$  or  $-2x \leq -6$

$$x < -4$$

$$x \geq 3$$

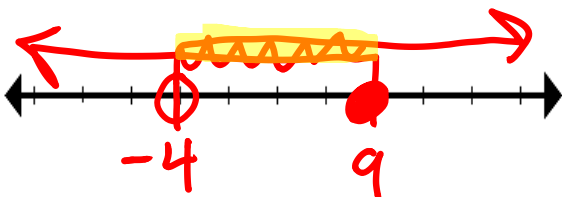


3.  $-14 < 3x - 2 \leq 25$

$$\begin{array}{l} -14 < 3x - 2 \\ -12 < 3x \\ -4 < x \end{array} \quad \begin{array}{l} 3x - 2 \leq 25 \\ 3x \leq 27 \\ x \leq 9 \end{array}$$

$$x > -4$$

$$x \leq 9$$



4.  $x - 7 > -2$  or  $-3x \geq -6$

$$x > 5$$

$$x \leq 2$$

