

Alg 1

Chapter 3
Section 3-6

Vocabulary

Compound
Inequality

Two distinct inequalities separated by the word "and" or the word "or"

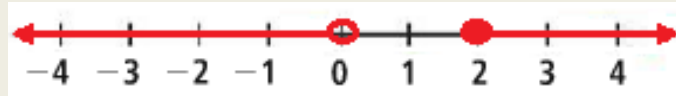
Interval
Notation

Shorthand way of writing an interval

Compound Inequalities

$$7x - 6 > -27 \text{ and } 6x < 12$$
$$x < 2$$

$$7x > -21$$
$$x > -3$$



$$8x - 2 \geq 14 \text{ or } 3(x + 2) < 6$$

$$8x \geq 16$$
$$3x + 6 < 6$$

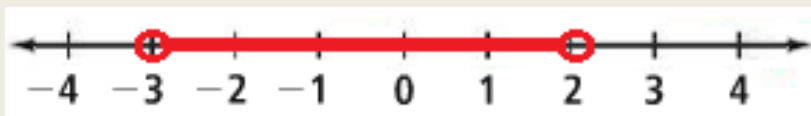
$$x \geq 2$$
$$3x < 0$$
$$x < 0$$

One Line Compound Inequalities

$$4 < 2x + 10 < 14$$

$$-6 < 2x < 4$$

$$-3 < x < 2$$



One Line Compound Inequalities

$$-7 < 3 - 5x < 28$$

$$-10 < -5x < 25$$

$$2 > x > -5$$

$$-5 < x < 2$$

$$-7 < -7 - x \leq 0$$

$$0 < -x \leq 7$$

$$0 > x \geq -7$$

$$-7 \leq x < 0$$

Interval Notation

[] - includes endpoints, goes with \leq and \geq

() - excludes endpoints, goes with $<$ and $>$

, - separates two endpoints

$$x < 7$$

$$4 \leq x < 13$$

$$x \leq 3$$

$$(-\infty, 7)$$

$$[4, 13)$$

$$(-\infty, 3]$$

$$(-11, 300]$$

$$(4, 13)$$

$$[0, \infty)$$

$$-11 < x \leq 300$$

$$4 < x < 13$$

$$x \geq 0$$