

JANUARY 7, 2015 ^{4TH}

STARTER

Solve each inequality for the given variable.

1. $b + 4 > -3$
 $-4 \quad -4$
 $b > -7$

2. $-5 + c \leq -10$
 $+5 \quad +5$
 $c \leq -5$

3. $8 < d + (+12)$
 $-12 \quad -12$
 $-4 < d$
 $d > -4$

1/7 - Solving One-Step Multiply/Divide Inequalities

Sometimes the inequality needs to switch...

$$5 < n \text{ becomes } n > 5$$

*Variable
must be First*

There are 2 other times...

When you **multiply** both sides by a negative number,
switch the inequality sign!

$$2 < 3 \quad \textit{right?}$$

$$-1 \cdot 2 < 3 \cdot -1 \quad \textit{times both sides by } -1$$

$$-2 < -3 \quad \textit{WRONG!}$$

$$-2 > -3 \quad \textit{Switch the inequality sign}$$

Examples of the first kind:
Switch the symbol since
the TWO is negative

$$-2 \cdot \frac{n}{-2} < 4 \cdot -2$$
$$n > -8$$

Do NOT switch since
the 4 is positive.

$$4 \cdot \frac{d}{4} \leq -10 \cdot 4$$
$$d \leq -40$$

$$-5 \cdot \frac{c}{-5} \geq -8 \cdot -5$$
$$c \leq 40$$

$$-3 \cdot 6 > \frac{x}{-3} \cdot -3$$
$$-18 < x$$
$$x > -18$$

Here is the second time:

When you **divide** both sides by a negative number,
switch the inequality sign!

$$4 < 6 \quad \textit{right?}$$

$$\frac{4}{-2} < \frac{6}{-2} \quad \textit{divide both sides by } -2$$

$$-2 < -3 \quad \textit{WRONG!}$$

$$-2 > -3 \quad \textit{Switch the inequality sign}$$

More examples:
Switch the sign since
the 2 is negative.

$$\frac{-2n}{-2} > \frac{6}{-2}$$
$$n < -3$$

Do NOT change since
the 6 is positive

$$\frac{6x}{6} \geq \frac{-24}{6}$$
$$x \geq -4$$

$$\frac{18}{-3} \leq \frac{-3c}{-3}$$

$$-6 \geq c$$

$$c \leq -6$$

$$\frac{-20}{4} < \frac{4d}{4}$$

$$-5 < d$$

$$d > -5$$

Change the inequality sign when:

1. you exchange sides
2. you multiply both sides by a negative number
3. you divide both sides by a negative number

HOMEWORK

Pink WS3

DUE Friday