JANUARY 7, 2015 1ST 2ND

STARTER

Scrat gathered a total of 100 acorns in 5 days. Each day he gathered 6 more acorns than the day before. How many did he gather on the first day?

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

Sometimes the inequality needs to switch...

$$5 < n \quad becomes \quad n > 5$$

There are 2 other times...

$$\begin{aligned} 2 &< 3 && right? \\ -1 \cdot 2 &< 3 \cdot -1 && times\ both\ sides\ by\ -1 \\ -2 &< -3 && WRONG! \\ -2 &> -3 && Switch\ the\ inequality\ sign \end{aligned}$$

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

Examples of the first kind:

Because 2 is negative

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

$$n > -8$$

Do NOT flip since 4 is positi

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

$$d \leq -40$$

Change the inequality

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

$$c \leq 40$$

Change the inequality

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

$$-18 < x$$

$$x > -18$$

Flip it again since x should go first.

Here is the second time:

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

$4 < 6$ *right?*

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

$-2 < -3$ *WRONG!*

$-2 > -3$ *Switch the inequality sign*

More examples:

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

$n < -3$

Switch since you ÷ by a negative

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

$x \geq -4$

Leave the sign since the 6 is positive

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

$-6 \geq c$

$c \leq -6$

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

$-5 < d$

$d > -5$

Change the inequality sign when:

1. you exchange sides $3 < x \rightarrow x > 3$
2. you multiply both sides by a negative number
3. you divide both sides by a negative number

$$-2 \cdot \frac{x}{-2} < 4 \cdot -2$$

$$x > -8$$

$$\frac{-3x}{-3} \geq \frac{15}{-3}$$

$$x \leq -5$$

HOMEWORK

Green WS3

DUE Thursday