Lesson 17 - Solving Inequalities

- Just like solving equations except:

* If you multiply or divide by a negative, you must flip your sign

Why:

We know if $x = 2$ then $-x = -2$ right?

Look at how that translates to inequalities

If $x > 2$ then $-x$ "should be" > -2 right?

If $x > 2$ then x could be 3 because $3 > 2$.

So plug in 3 for x:

$-x > -2$ $\quad -3 > -2$

is this true?

No -3 is not greater than -2. So it's not true, $-x \not> -2$. This is because we didn't flip the sign.

If $x > 2$ then $-x < -2$ because when you divide by a negative you must flip the sign.

* Remember

$>$ and $<$ use open dots ○

$\geq$ and $\leq$ use closed dots ●

Ex 1

$$-2x + 10 > 20$$

Ex 2

$$\frac{x}{3} - 11 \leq -5$$