Warm Up!

In your own words, define an inequality.

a math sentence that compares two or more values to show which is greater.

Name each of the following symbols:

then

<	>	≥	≤
less than	greater than	greater than or = to	less than or = to

Solving Algebraic Inequalities Using Addition and Subtraction

Clear Learning Target

You will be able to solve algebraic inequalities using addition and subtraction properties.

Example #1: Solve the following inequality for the variable. **x - 12 ≥ 8**

+12 +12

$x \geq 20$

You Try! Solve the following inequality for the variable. **22 > m - 8**

$+8 \quad +8$

$30 > m$

$m > 30$

$m < 30$

$m = 8$

$8 = m$

Example #2: Solve and graph the inequality for the variable. **m + 19 > 56**

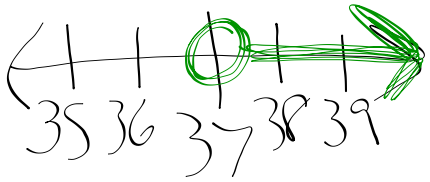
(1) (2)

$m + 19 > 56$

$-19 \quad -19$

$37 < m$ $\quad m > 37$

line + open $>$ $<$ closed $\geq$ $\leq$ + greater $\rightarrow$ less $\leftarrow$

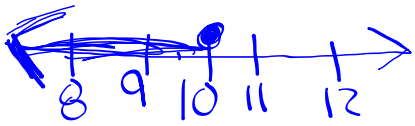


You Try! Solve and graph the inequality for the variable. **p + 8 ≤ 18**

$p + 8 \leq 18$

$-8 \quad -8$

$p \leq 10$



Example #3: Solve the inequality for the variable. **3a + 6 ≤ 4a**

* add/subtract the variable term with the smaller coefficient from both sides!

$3a + 6 \leq 4a$

$-3a \quad -3a$

$6 \leq a$

$a \geq 6$

You Try! Solve the following inequality for the variable. **9n - 1 < 10n**