# Warm Up!

*In your own words, define an inequality.*

a comparison between 2 values showing 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 +8

30 > m
m < 30

★ order matters!

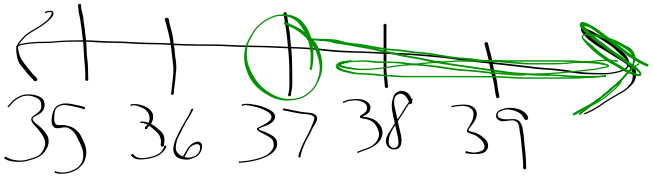
m = 8 , 8 = m

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

-19 -19

m > 37

{ # line + open ○ <, > closed ● ≤, ≥ + → greater ← less }

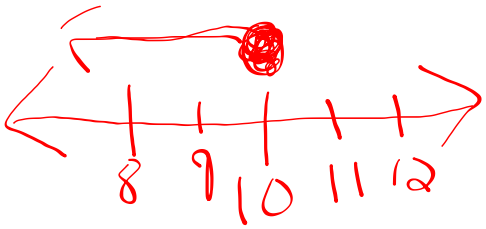


***You Try!*** Solve and graph the inequality for the variable. **p + 8 ≤ 18**

$p + 8 \leq 18$

$-8 \quad -8$

$p \leq 10$




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

★ move the term with the smaller coefficient

$3a + 6 \leq 4a$

$-3a \quad -3a$

$6 \leq a$

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

$-9n \quad -9n$

$-1 < n$