

7.5 Writing and Graphing Inequalities

EQ: How can you use a number line to represent solutions to an inequality?

Inequality - a mathematical sentence that not equal compares expressions

* a range of solutions, rather than one.

EX: $x \geq 4$, solutions: 4, 5, 6, 7, 8, 9...

$x = 4$, solutions: 4

$>$
greater than

$<$
less than

\geq
greater than or equal to

\leq
less than or equal to

- open circle \circ
- number NOT included

- closed circle \bullet
- Number included

Example 1: The product of a number x and 4 is at least 12.

multiply

$$4x \geq 12$$

don't be tricked!
At least means \geq

Example 2: * Is x a solution?

$$x + 1 > 7 ; x = 8$$

$$8 + 1 > 7$$

$$9 > 7 \quad \text{yes!}$$

8 is a solution