

11.1 Writing and Graphing Inequalities p.466

Inequality: a mathematical sentence that compares expressions.

It contains one of the following symbols: $<$, $>$, \leq , \geq

\neq means not equal to

$<$	$>$	\leq	\geq
<ul style="list-style-type: none">• is less than• is fewer than	<ul style="list-style-type: none">• is greater than• is more than	<ul style="list-style-type: none">• is less than or equal to• is at most• is no more than	<ul style="list-style-type: none">• is greater than or equal to• is at least• is no less than

need 3 things (at least)

A) Writing Inequalities variable, symbol, number

1. A package must weigh under 80 pounds.

$$x < 80$$

$$80 > x$$

2. You must be 55 or over to live in Leisure Village.

$$x \geq 55$$

3. A number x is at most -10.

$$x \leq -10$$

- ★ 4. Twice a number y is more than $-\frac{5}{2}$.

$$2y > -\frac{5}{2}$$

5. You must be at least 18 years old to vote.

$$x \geq 18$$

6. The speed limit is 65 mph.

$$x \leq 65$$

- ★ 7. A number q plus 5 is greater than or equal to -7.9.

$$q + 5 \geq -7.9$$

B) Checking Solutions

Tell whether -2 is a solution of each inequality.

Write yes or no.

a) $y - 5 \geq -6$
 $-2 - 5 \geq -6$
 $-7 \geq -6$
NO

b) $-5.5y < 14$
 $-5.5(-2) < 14$
 $11 < 14$
yes



b) Is 8 a solution of:

$3p > 24$
 $3(8) > 24$
 $24 > 24$
NO

d) Is 18 a solution of:

$n - 6 < 15$
 $18 - 6 < 15$
 $12 < 15$
yes

C) Graphing Inequalities

<p>$< >$</p> <p>means the number IS NOT included, and there will be an open circle on the number line</p> 	<p>$\leq \geq$</p> <p>Means the number IS included, and there will be a closed circle on the number line</p> 
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Graph the following inequalities:

1) $w \geq 7$



2) $14 > b$



3) $x < -3$



