

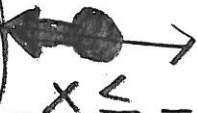
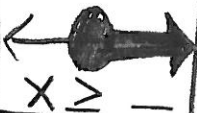


Writing Inequalities

Symbol	meaning	phrases	graph
$<$	Less than	<ul style="list-style-type: none"> Fewer than Below 	 $x < -$
$>$	greater than	<ul style="list-style-type: none"> more than above 	 $x > -$
\leq	Less than OR Equal to	<ul style="list-style-type: none"> AT MOST NO more than 	 $x \leq -$
\geq	greater than OR Equal to	<ul style="list-style-type: none"> AT Least NO Less than 	 $x \geq -$

Graphing the solutions of an inequality

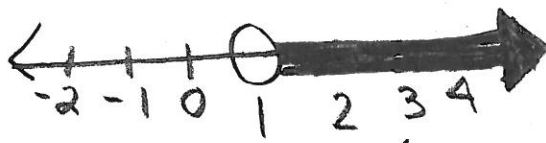
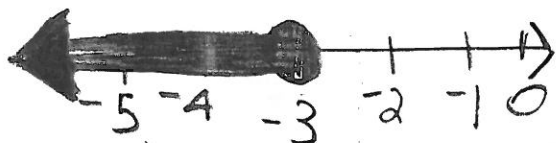
a solution of an inequality that contains a variable is any value that makes the inequality true

Example: $x > -2 \dots 7$ is a solution because
 $7 > -2$ is a true statement

Examples of graphing solutions

① $y \leq -3$ closed circle

② $1 < m$ open circle



CHECK! $\rightarrow -4 \leq -3 \checkmark$

$1 < 4 \checkmark$

Examples continued...

③ $t \leq -4$



CHECK

$-6 \leq -4$ ✓ yes

④ $5 > m$



can you write

$m < 5$? yes

they mean the same thing!



Writing inequalities

"The sum of y and 2 is greater than 5"

↓
Addition

↓
>

$$\begin{array}{r} y + 2 > 5 \\ -2 \quad -2 \\ \hline y > 3 \end{array} \longrightarrow \text{solve...}$$

$y > 3 \longrightarrow \text{graph}$

CHECK

$y + 2 > 5$

$5 + 2 > 5$

$7 > 5$ ✓

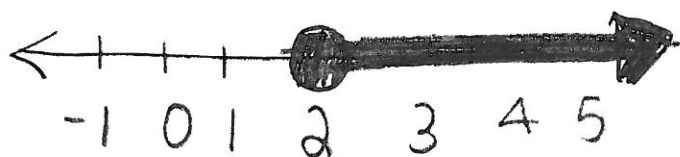


Example:

The sum of 1 and y is greater than OR Equal to 3.

$$\begin{array}{r} \hookrightarrow \\ 1 + y \geq 3 \\ -1 \quad -1 \\ \hline y \geq 2 \end{array}$$

graph



check in original

$$1 + y \geq 3$$

$$1 + 5 \geq 3$$

$$\checkmark \quad 4 \geq 3 \quad \checkmark$$

Example:

Graph the temperature in February was AT MOST 6°F .

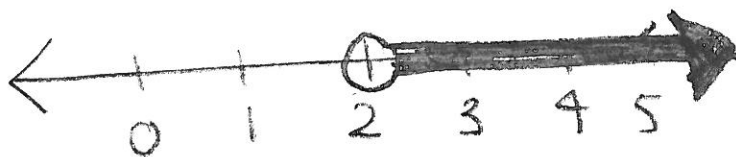
$$\hookrightarrow \leq \rightarrow t \leq 6$$



Example:

Each package must weigh
MORE than 2 ounces.

$\hookrightarrow > \rightarrow p > 2$



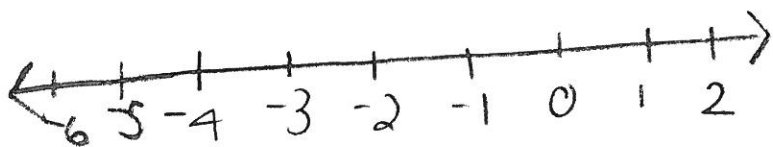
1) graph $1 \leq x$. IS $-1, 3, 0, 1$ a solution



	<u>Yes/No</u>
is -1 a sol?	_____
is 3 a sol?	_____
is 0 a sol?	_____
is 1 a sol?	_____

2) graph and check:

$$-3 > z$$

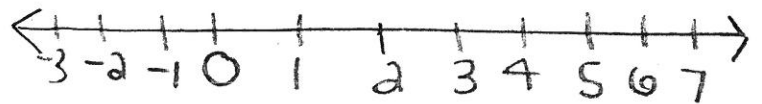


CHECK
 $-3 > z$
 $-3 >$

③ Write an inequality that represents the phrase "The sum of 4 and x is greater than 6." Then solve, graph and check your solution

solve

graph



check

④ write and graph an inequality that represents "a snake's body temperature never goes below 4°C ."



