

INEQUALITIES



AN INEQUALITY IS A MATHEMATICAL SENTENCE THAT COMPARES TWO QUANTITIES.

<u>SYMBOL</u>	<u>MEANING</u>	<u>EXAMPLES</u>
$<$	IS LESS THAN IS FEWER THAN IS BELOW	$3 < 5$
$>$	IS GREATER THAN IS MORE THAN IS ABOVE	$8 > 4$
\leq	IS LESS THAN <u>OR</u> EQUAL TO AT MOST NO MORE THAN	$x \leq 2$ $7 \leq 10$ $10 \leq 10$
\geq	IS GREATER THAN <u>OR</u> EQUAL TO AT LEAST NO LESS THAN	$x \geq 3$ $12 \geq 9$ $12 \geq 12$
\neq	IS NOT EQUAL TO	$2 \neq 3$ $0 \neq 7$

EXAMPLE: $x < 5$

\$2	\$5	\$4.50	\$5.25
$2 < 5$ ✓	$5 < 5$ NO	$4.50 < 5$	$5.25 < 5$
yes	NO	YES	NO

IN AN EQUATION THERE IS ONLY 1 SOLUTION

$$x - 2 = 3$$

$$+2 \quad +2$$

$$\boxed{x = 5}$$

$$5 - 2 = 3$$

$$3 = 3 \checkmark$$

AN INEQUALITY HAS AN INFINITE # OF SOLUTIONS. IT HAS A SOLUTION SET.

$$x > 5 \quad \left\{ \begin{array}{l} 7, 15, 10, 20, 16, 12 \\ 22, 50, 100 \end{array} \right.$$

1) $y > 8$	6	8	9	15
2) $m \leq 525$	525	510	500	650
3) $c < 22$	12	25	30	22
4) $f \geq 80$	81	0	75	80
5) $g \geq 27$	27	26	25	20
6) $n < 16$	15	10	0	16

WRITING INEQUALITIES

EXAMPLES:

1) THERE ARE AT LEAST 25 STUDENTS

$$x \geq 25$$

2) NO MORE THAN 150 PEOPLE

$$x \leq 150$$

3) THERE ARE LESS THAN 10 TEACHERS
ABSENT TODAY

$$x < 10$$

4) NO MORE THAN 2 JOLLY RANCHERS.

$$x \leq 2$$

5) THE PIG WEIGHS AT MOST 220 POUNDS.

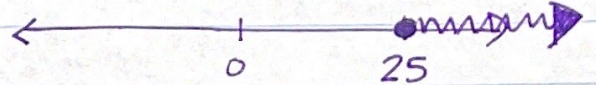
$$x \leq 220$$

6) YOU HAVE MORE THAN 3 PENCILS.

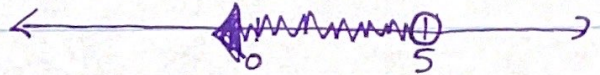
$$x > 3$$

GRAPHING INEQUALITIES

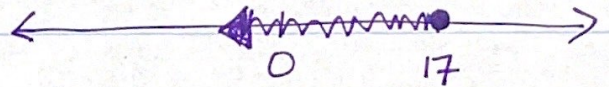
1) $x \geq 25$



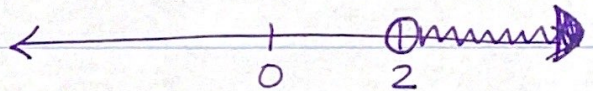
2) $x < 5$



3) $x \leq 17$

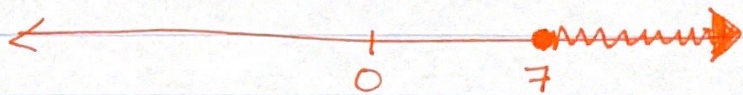


4) $x > 2$



$$2 < x = x > 2$$

$x \geq 7$

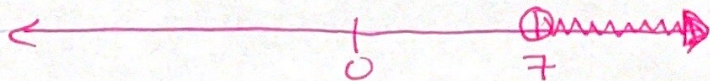


●
(CLOSED)

$\leq \geq$

THE NUMBER IS INCLUDED
IN THE SOLUTION SET

$x > 7$



○
(OPEN)

$< >$

THE NUMBER IS NOT
INCLUDED IN THE SOLUTION
SET