

Inequalities

Be able to interpret and write an inequality

The equations you were solving were called **equations** because they each had the "=" sign in them.

There are 4 other mathematical signs, called **inequalities** and they are :-

> is greater than

≥ is greater than or equal to

< is less than

≤ is less than or equal to

Examples :-

$5 > 3$ "five **is greater** than three"

$-7 < -6$ "negative seven **is less** than negative six"

$x \geq 2$ "x **is greater than or equal to** two" (x can be 2 or any number **above** 2)

$y \leq -5$ "y **is less than or equal to** negative five" (y can be **-5** or any number **below** -5).

Have you noticed ?? - The arrow (<), (>) always points to the **smaller number**.

$7 > 3$


$-6 < -4$


Exercise 4

1. **COPY** the following as shown and place a "<" sign or a ">" sign between the numbers :-

a $8 \dots 1$

b $2 \dots 5$

c $0 \dots -5$

d $-4 \dots -3$

e $6 \dots -3$

f $-8 \dots -17$

g $-117 \dots -116$

h $-141 \dots -140$

i $12 \dots 11\frac{1}{2}$

2. Rewrite the following pairs of numbers to suit the given sign :-

Example :- write 5 and 4 using a "<" sign. \Rightarrow answer is :- $4 < 5$.

a 8 and 3, using "<"

b 8 and 3, using ">"

c 17 and 11, using "<"

d -8 and -5, using ">"

e -2 and 2, using ">"

f 5 and -1 using "<"

g -15 and -14, using "<"

h -77 and -79, using ">"

i 9 and -10 using "<"

3. In this question you must choose **x** only from the numbers 0, 1, 2, 3, or 4.

Examples :- (i) $x \geq 1$ gives $x = 1, 2, 3, 4$. (ii) $x < 3$ gives $x = 0, 1, 2$.

a $x > 2$

b $x < 4$

c $x \geq 3$

d $x \leq 1$

e $x > 0$

f $x \leq 4$

g $x > 4$

h $x \geq 0$

i $x \leq 0$.