

An **inequality** is a mathematical comparison of **two expressions**

4 inequality signs

 $>$ \geq $<$ \leq

$$x + 7 > 12$$

An **inequality** is a mathematical comparison of **two expressions**

4 inequality signs

 $>$ \geq $<$ \leq

$$x + 7 < 12$$

The solution of an **inequality** is any number that makes the inequality a true statement

$$2x + 5 > 10$$

Is 1 a solution?

Is 6 a solution?

The solution of an **inequality** is any number that makes the inequality a true statement

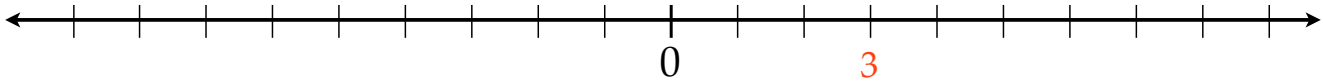
$$x - 8 \leq 3$$

Is 3 a solution?

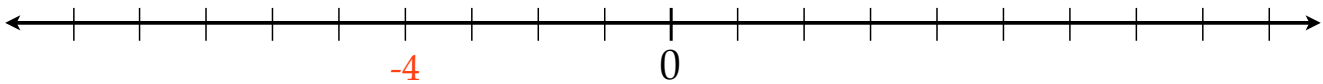
Is 15 a solution?

The solution of an **inequality** is often expressed graphically on a number line.

$$x > 3$$



$$x \leq -4$$



To graph an inequality...

for **shading**...

$x >$ or $x \geq \Rightarrow$ shade to the **right**

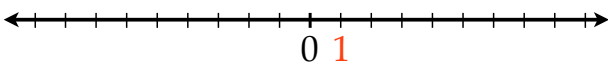
$x <$ or $x \leq \Rightarrow$ shade to the **left**

for the **coordinate**...

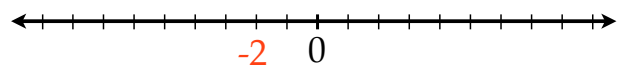
$x >$ or $x < \Rightarrow$ **open circle**

$x \geq$ or $x \leq \Rightarrow$ **closed circle**

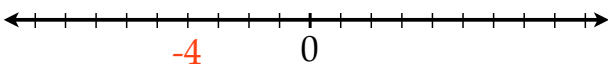
$$x \leq 1$$



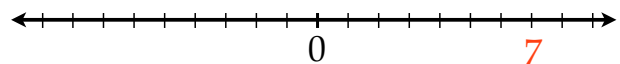
$$x > -2$$



$$x < -4$$



$$x \geq 7$$



To graph an inequality...

for shading...

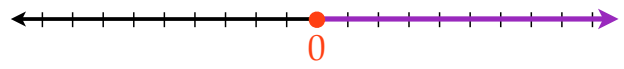
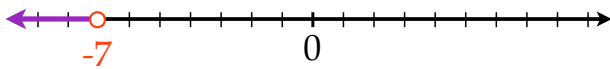
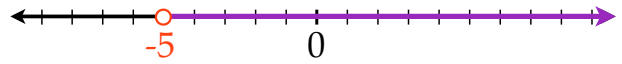
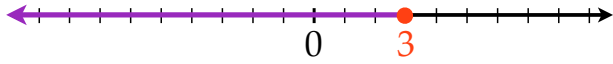
$x >$ or $x \geq \Rightarrow$ shade to the right

$x <$ or $x \leq \Rightarrow$ shade to the left

for the coordinate...

$x >$ or $x < \Rightarrow$ open circle

$x \geq$ or $x \leq \Rightarrow$ closed circle



To graph an inequality...

x on left side of inequality

for shading...

$x >$ or $x \geq \Rightarrow$ shade to the right

$x <$ or $x \leq \Rightarrow$ shade to the left

for the coordinate...

$x >$ or $x < \Rightarrow$ open circle

$x \geq$ or $x \leq \Rightarrow$ closed circle