

Inequalities: Symbols and Vocabulary

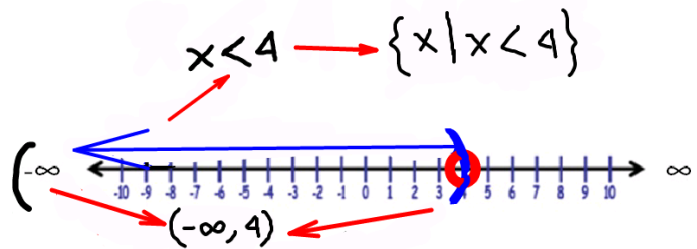
Algebra rules / General Rules:

- Isolate a positive x on the left side using algebra
- Reverse the inequality sign when mult/divide by a negative

< Less than: The symbol that:

$< \circ)$
 $\leq \bullet]$

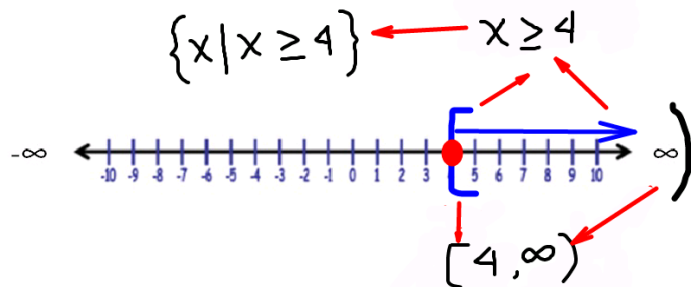
- ① Looks like an **L** ($<$) for **L**ess than
- ② Points to the **L**eft
- ③ Caps the arrow pointing towards smaller numbers on the number line
- ④ Points towards the smaller of two numbers ($4 < 7$)



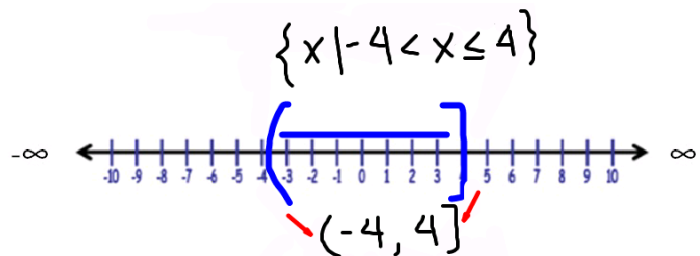
> Greater than: The symbol that:

$> \circ ($
 $\geq \bullet [$

- ① Looks like the top of an **R** ($>$) for **G**reater than
- ② Points to the **R**ight
- ③ Caps the arrow pointing towards larger numbers on the number line
- ④ Open end is by the larger number ($7 > 4$)



Compound inequalities: usually in the form $-4 < x < 4$
 but can also be $x > -4$ and $x < 4$



Union / Intersection Guidelines

- \cup **Union** The symbol that:
 - ① Looks like a U for \cup ion (not intersection)
 - ② Resembles a smile ☺
 - ③ Smiles because if you get a **greater** amount
 - ④ Corresponds to the **greater than** ($>$) inequality
“GreatOR”

- \cap **Intersection** The symbol that:
 - ① Looks like an **A** for \cap nd (not or)
 - ② Resembles a frown ☹
 - ③ Frowns because if you get **less**
 - ④ Corresponds to the **less than** ($<$) inequality
“Less thAND”

Inequality Vocabulary

Phrases that can mean:

$<$ (less than)	$=$ (equal)	$>$ (greater than)
is less than	is / are / will be /only	more than
is under	is the same as	above
is below	that is equal to	over
shorter / smaller than	exactly	greater / larger than
fewer than	half (= .5* or ½ *)	exceeds / increased
is lower than		longer than
beneath		is higher than
a better deal		

\leq (less than or equal to)	\neq (not equal to)	\geq (greater than or equal to)
at most	is not equal to	at least
maximum	is not the same as	minimum
bottom	is different / differs from	top
is no more than		is no less than

Compound inequality phrases:

- | | |
|---------|-------------------------------|
| between | above phrases joined by “and” |
| within | above phrases joined by “or” |