10 minutes to finish grading Joe's quiz!

$>$ $<$ $\geq$ $\leq$ $=$ $\neq$

Two times a number increased by six is no more than ten

$2x+6 \leq 10$

Three less than a number is at least three

$x-3 \geq 3$

Three less than the product of four and a number is no less than five

$4x-3 \geq 5$

Ten is at most six times the difference of a number and one

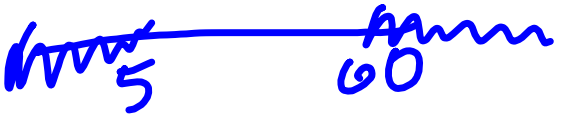
$10 \leq 6(x-1)$

To ride on a roller coaster you must be between the ages of 6 and 65

$x>6$ $x<65$ $6<x<65$

To get a discount at a movie theater you must be no more than 5 years old or at least 60 years old


$x \leq 5$ or $x \geq 60$

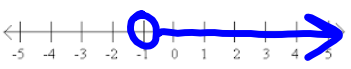


## Graphing on a Number Line

Shows that the number is NOT part of the solution ○

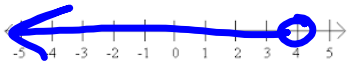
Shows that the number IS part of the solution ●

$x \leq 3$



$x > -1$

$x < -2$



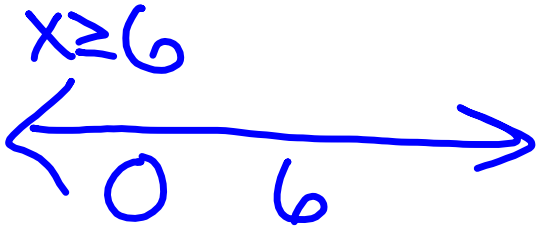
$4 > x$

$x < 4$

$6 \leq x$

$x \geq 6$

$x \neq 1$

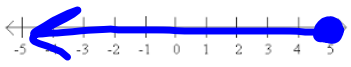


**Interval Notation -** shows the minimum and maximum value of the solutions.

Shows that the number is NOT part of the solution ( )

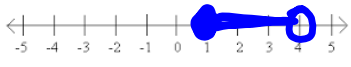
Shows that the number IS part of the solution [ ]

If there is an arrow we use ∞ or −∞ . ∞ will always get ( ) and never [ ]



$x \leq 5$ $(-\infty, 5]$

$x > 0$ $(0, \infty)$



$1 \leq x < 4$ $[1, 4)$

$3 > x$

$(-\infty, 3)$

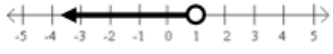
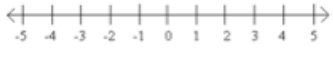
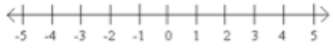
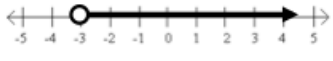
$-2 \leq x \leq 3$

$[-2, 3]$

$x > 3$

$(3, \infty)$

**September 17, 2019**

| Words | Algebraic | Interval Notation | Graphic |
|---|---|---|---|
| "x is greater than or equal to 3" | $x \geq 3$ | $[3,\infty)$ |  |
| "x is less than 1" | | |  |
| "x is greater than -2 and at most 4" | $-2 < x \leq 4$ | |  |
| | | $(-4,\infty)$ |  |
| | | |  |
| | $-5 < x$<br>*Hint: our brain works better with x on the left, so flip it around first* | |  |
| "Kerrigan has no less than 2 cars" | | |  |
| "Sam has at least $1, but no more than $5" | | |  |
| | | $(-\infty,-2)$ |  |
| | $x \geq -4$ | |  |
| "x is at most 3" | | $(-\infty,3]$ |  |

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