M10 - 6.4 - Domain Range Notes

Domain: All possible x values. $\mathcal{X}$	**Range**: All possible y values. y

$x \geq 2$

$\leq, \geq$ ● $\quad$ [ ] ───
Equal to $\quad$ (closed, square, solid)

-5 -4 -3 -2 -1 0 1 2 3 4 5
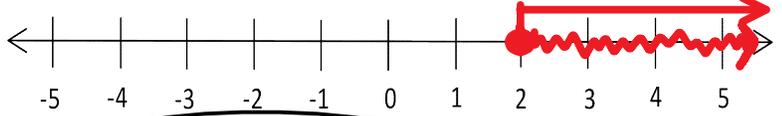
Words: x is Greater than Equal to 2

Set Notation: Domain: $\{ x | x \geq 2, x \in \mathbb{R} \}$

Interval Notation $[2, \infty)$

$x \in \mathbb{R}:$
x can be all Real Numbers

$x \geq 2$

-5 -4 -3 -2 -1 0 1 2 3 4 5

Left Hand
Thumb Points Greater Than

(∞, ∞) Infinity Not Included

$x < 3$

$<, >$ ● $\quad$ ( ) $(-\infty, \infty)$ ─ ─ ─ ─
Not Equal to $\quad$ (open, round, dotted)

-5 -4 -3 -2 -1 0 1 2 3 4 5

Words: x is Less than 3

Set Notation: Domain: $\{ x | x < 3, x \in \mathbb{R} \}$

Interval Notation $(\infty, 3)$

$x < 3$

-5 -4 -3 -2 -1 0 1 2 3 4 5
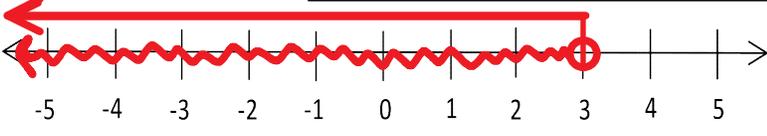
Right Hand
Thumb Points Less Than

$2 \leq x < 3$

Smaller #, Less Than*, Variable, Less Than, Bigger #

1 2 3 4 5
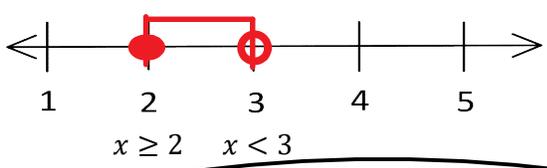
$x \geq 2$ $\quad$ $x < 3$

Words: x is Greater than or Equal to 2 and Less Less than 3

Set Notation: Domain: $\{ x | 2 \leq x < 3, x \in \mathbb{R} \}$

Interval Notation $[2,3)$

Line Between

-1 0 1 2 3

Shade Between

$-1 \leq x < 3$

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1 2 3 4 5

Words: $x = 2, 4, 5$ $\quad$ **A List**

$\mathbb{Z} \in \mathbb{R}$
x can be all Real Integers

Domain: $\{ x | x = 2, 4, 5, \mathbb{Z} \in \mathbb{R} \}$