

## Function Notation:

$$y = 3x^2 + 4x - 7$$

↓ Function  $f$ , variable of a function

$$F(x) = 3x^2 + 4x - 7$$

↑ Name of the function  
Function "F"

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**ex1** Evaluate

$$\begin{aligned} F(2) &= 3(2)^2 + 4(2) - 7 \\ &= 3(4) + 8 - 7 \\ &= 12 + 1 \end{aligned}$$

$$F(2) = 13$$

**Ex2**  $g(x) = 3x - 7$

Evaluate

$$g(2a) = 3(2a) - 7$$

$$g(2a) = 6a - 7$$

## Interval Notation: smallest $\rightarrow$ biggest

**ex1**  $x \geq 4$   
↑ equal

$$[4, \infty)$$

**ex2**  $x < 3$  and  $x \geq 2$   
↓

$$(-\infty, 3) \cup [2, \infty)$$

## \* Determining the domain

Domain of a function is all the values of  $x$  that can be plugged into the function.

$$\boxed{\text{ex}} \quad f(x) = \frac{1}{x-2}$$

$$x-2 \neq 0$$

$$x \neq 2 \leftarrow \text{not } 2$$

What could I  
not plug in for  
x?

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$$\boxed{D: (-\infty, 2) \cup (2, \infty)}$$

$$\boxed{\text{ex2}} \quad g(x) = \sqrt{2x-3}$$

\*  $\sqrt{\quad}$  - has a restriction

$$2x-3 \geq 0$$

$$(\quad) \geq 0$$

$$2x \geq 3$$

$$x \geq 3/2$$

$$\boxed{D: [3/2, \infty)}$$

$$\boxed{\text{ex3:}} \quad h(x) = \frac{\sqrt{x+5}}{x-3}$$

$$x+5 \geq 0$$

$$x-3 \neq 0$$

$$x \geq -5$$

$$x \neq 3$$

$$\boxed{D: [-5, 3) \cup (3, \infty)}$$