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2.2 Function Notation

Given :

a) $y = 3x + 2$

$f(x) = 3x + 2$ "f" at "x"
of

b) $y = -2x^2 + 3x$

$g(x) = -2x^2 + 3x$

Advantage of function notation

1) identify each equation

2) shortens words for substitution

ex: Determine the value of the "f" function
when $x = 5 \Rightarrow f(5)$ is y when $x = 5$

if $h = -4.9t^2 - 32t$

$h(t) = -4.9t^2 - 32t$

Ex: Find $f(5)$

$f(x) = 3x + 2$

$f(5) = 3(5) + 2$

$f(5) = 17$

$\therefore (5, 17)$ is an ordered pair.

Given $f(x) = 2x + 3$ & $g(x) = -3x^2 + 2$
find.

$$\begin{aligned} \text{a) } f(1) &= 2(1) + 3 \\ &= 5 \end{aligned}$$

$$\begin{aligned} \text{b) } g(-4) &= -3(-4)^2 + 2 \\ &= -3(16) + 2 \\ &= -48 + 2 \\ &= -46 \end{aligned}$$

$$\begin{aligned} \text{c) } g(-2) &= -3(-2)^2 + 2 \\ &= -3(4) + 2 \\ &= -12 + 2 \\ &= -10 \end{aligned}$$

$$\begin{aligned} \text{d) } f(a) &= 2a + 3 \\ &= 2a + 3 \end{aligned}$$

$$\begin{aligned} \text{e) } g(x+2) &= -3(x+2)^2 + 2 \\ &= -3(x^2 + 4x + 4) + 2 \\ &= -3x^2 - 12x - 10 \end{aligned}$$

Given $D = \{0, 1, 2\}$ determine the range for the function $f(x) = -5x + 2$

$$\begin{aligned} f(x) &= -5x + 2 \\ f(0) &= -5(0) + 2 \\ &= 2 \end{aligned}$$

$$\begin{aligned} f(1) &= -5(1) + 2 \\ &= -3 \end{aligned}$$

$$\begin{aligned} f(2) &= -5(2) + 2 \\ &= -8 \end{aligned}$$

$$\therefore R = \{-8, -3, 2\}$$