Mathematics 11U

1.2 –Function Notation

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The key word in “function notation” is notation. Today we are looking at a different way of doing what we have already done in the past, but with different notation.

$y = 3x - 2$

$f(x) = 3x - 2$

“f of x”

“f at x”

old way

$y = 3x - 2$

$y = 3(5) - 2$

$y = 13$

$f(x) = 3x - 2$

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

$f(5) = 13$

$(5, 13)$

$h(t) = t^2 + 2t$; Find $h(-8)$

$h(-8) = (-8)^2 + 2(-8)$

$h(-8) = 64 - 16$

$h(-8) = 48$

$(-8, 48)$

$w(t) = 3t^3 + 3$; Find $w(2)$

$w(2) = 3(2)^3 + 3$

$w(2) = 24 + 3$

$\boxed{w(2) = 27}$

$w = \frac{27}{2}$

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

$h(x) = 3x$

Find $g(-3) - h(-3)$

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

$= 9 - 6 - (-9)$

$= 9 - 6 + 9$

$= 12$

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

$g(-3) = 3$

$h(-3) = 3(-3)$

$h(-3) = -9$

$3 - (-9)$

$= 12$

$g(t) = -t - 3$

$f(t) = 2t + 4$

Find $(g + f)(7) = g(7) + f(7)$

$(g+f)(7) = -7 - 3 + 2(7) + 4$

$(g+f)(7) = -10 + 14 + 4$

$(g+f)(7) = 8$

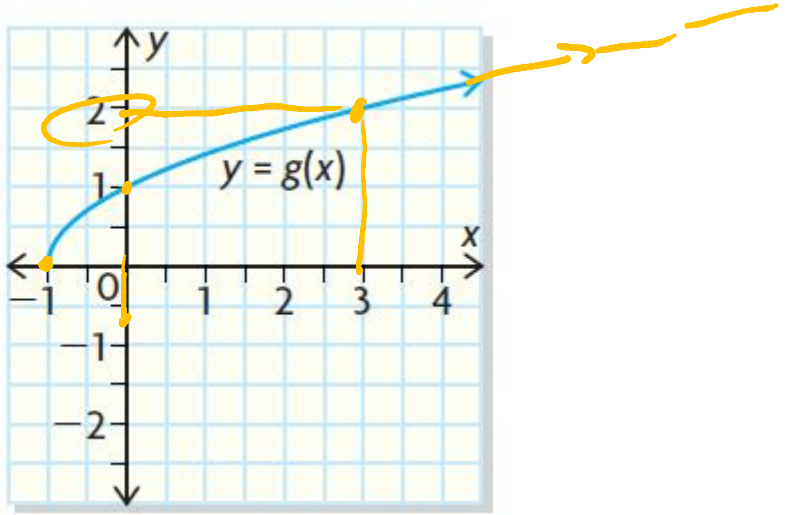
For the function shown in the graph, determine each value.

a) $g(3)$ $x=3,\ y=?$

b) $g(-1)$

c) x if $g(x) = 1$, $y=1,\ x=?$

d) the domain and range of $g(x)$



a) $g(3)=2$

b) $g(-1)=0$

c) $x=0,\ g(0)=1$

d) Domain:
- all x's greater than -1
- $x \geq -1$

Range:

$y \geq 0$

$g(x) \geq 0$

$f(x) = 2x - 3$. If $f(x) = 19$, find x.

"what x-value give 19"

$$19 = 2x - 3$$
$$+3 \qquad +3$$

$$22 = 2x$$

$$11 = x$$

$\therefore f(11) = 19$