





$$h(x) = 12$$

$$h(12)$$

$$f(x) = 7x - 1 \quad g(x) = 3(x - 1)$$

$$y = 7x - 1$$

$$h(x) = 2x^2 - 1$$

a) $f(x) = 7x - 1$
 $f(\underline{20}) = 7(\underline{20}) - 1$

$$f(20) = 140 - 1$$

$$f(20) = 139$$

↑ ↑
x = 20 y = 139

$$(\underline{20}, \underline{139})$$

b) $f(x) = \underline{20}$

$$\underline{f(x)} = 7x - 1$$

$$\underline{20} = 7x - 1$$

$$\cdot \quad \underline{20 + 1} = 7x$$

$$\frac{\underline{21}}{7} = \frac{7x}{7}$$

$$\underline{3} = x$$

$$(\underline{3}, \underline{20})$$

$$a = b$$

$$b = c$$

$$a = c$$

$$f(x) = 7x - 1 \quad g(x) = 3(x - 1)$$

$$h(x) = 2x^2 - 1$$

$$g(x) = 3(x - 1)$$

c) $g(3) = 3(3 - 1)$

$$g(3) = 3(2)$$

$$g(3) = 6$$

↑ ↑
x = 3 y = 6

$$(3, 6)$$

d) $h(f(1))$

(i) $f(1)$

$$f(x) = 7x - 1$$

$$f(1) = 7(1) - 1$$

$$f(1) = 7 - 1$$

$$f(1) = 6$$

(ii) $h(f(1))$

$$h(6)$$

$$h(x) = 2x^2 - 1$$

$$h(6) = 2(6)^2 - 1$$

$$h(6) = 2(36) - 1$$

$$h(6) = 72 - 1$$

$$h(6) = 71$$

$$f(x) = 7x - 1 \quad g(x) = 3(x - 1)$$

$$h(x) = 2x^2 - 1$$

e) $h(2) - f(3)$

(i) $h(x) = 2x^2 - 1$

$$h(2) = 2(2)^2 - 1$$

$$h(2) = 2(4) - 1$$

$$h(2) = 8 - 1$$

$$\underline{h(2) = 7}$$

(ii) $f(x) = 7x - 1$

$$f(3) = 7(3) - 1$$

$$f(3) = 21 - 1$$

$$\underline{f(3) = 20}$$

(iii) $h(2) - f(3)$

$$\underline{7} - \underline{20}$$

$$\textcircled{-13}$$

$$f(x) = 7x - 1 \quad g(x) = 3(x - 1)$$

$$h(x) = 2x^2 - 1$$

f) $g(-3)$

$$g(x) = 3(x - 1)$$

$$g(\underline{-3}) = 3(\underline{-3} - 1)$$

$$g(-3) = 3(-4)$$

$$g(-3) = -12$$

g) $f(g(-2))$

h) $h(-3) - f(2)$

i) $g(x) = \underline{27}$

$$\underline{g(x)} = 3(x - 1)$$

$$\frac{\underline{27}}{3} = \frac{\cancel{3}(x - 1)}{\cancel{3}}$$

$$9 = x - 1$$

$$9 + \underline{1} = x$$

$$10 = x$$

$$f(x) = 7x - 1 \quad g(x) = 3(x - 1)$$

$$h(x) = 2x^2 - 1$$

f) $g(-3)$

$$g(x) = 3(x - 1)$$

$$g(-3) = 3(-3 - 1)$$

$$g(-3) = 3(-4)$$

$$g(-3) = -12$$

g) $f(g(-2))$

$$g(x) = 3(x - 1)$$

$$g(-2) = 3(-2 - 1)$$

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

$$g(-2) = -9$$

$f(g(-2))$

$f(-9)$

$$f(x) = 7x - 1$$

$$f(-9) = 7(-9) - 1$$

$$f(-9) = -63 - 1$$

$$f(-9) = -64$$

h) $h(-3) - f(2)$

$$h(x) = 2x^2 - 1$$

$$f(x) = 7x - 1$$

$$h(-3) = 2(-3)^2 - 1$$

$$f(2) = 7(2) - 1$$

$$h(-3) = 2(9) - 1$$

$$f(2) = 14 - 1$$

$$h(-3) = 18 - 1$$

$$f(2) = 13$$

$$h(-3) = 17$$

$h(-3) - f(2)$

$$17 - 13$$

$$4$$

i) $g(x) = 27$

$$g(x) = 3(x - 1)$$

$$27 = 3(x - 1)$$

$$27 = 3x - 3$$

$$27 + 3 = 3x$$

$$30 = 3x$$

$$10 = x$$

Function Notation...

$$c(x) = 5x - 2$$

$$a(x) = 20 - x$$

$$t(x) = 3x + x$$

Evaluate:

$$t(7)$$

$$c(x) = 153$$

$$c(11)$$