



Function Operations

$$f(x) = 3x - 4$$

$$g(x) = x^2 + 8x - 3$$

$$h(x) = \frac{x}{3-2x}$$

$$f(x) + g(x) \text{ or } (f+g)(x)$$

$$(3x-4) + (x^2 + 8x - 3)$$
$$x^2 + 11x - 7$$

Domain
 $(-\infty, \infty)$

$$f(x) - g(x) \text{ or } (f-g)(x)$$

$$(3x-4) + (-x^2 - 8x + 3)$$
$$-x^2 - 5x - 1$$

Domain
 $(-\infty, \infty)$

$$f(x) \cdot g(x) \text{ or } (f \cdot g)(x)$$

$$(3x-4)(x^2 + 8x - 3)$$

$$\underline{3x^3 + 24x^2 - 9x - 4x^2 - 32x + 12}$$

$$3x^3 + 20x^2 - 41x + 12$$

Domain
 $(-\infty, \infty)$

$$\frac{f(x)}{g(x)} \text{ or } \left(\frac{f}{g}\right)(x)$$

$$\frac{3x-4}{x^2+8x-3}$$

Domain
 $x^2+8x-3 \neq 0$

Evaluating Functions

$$f(2) + g(2) \text{ or } (f+g)(2)$$

$$(2)^2 + 11(2) - 7 = 19$$

$$f(-1) - g(-1) \text{ or } (f-g)(-1)$$

$$-(-1)^2 - 5(-1) - 1 = 3$$

$$h(6) + g(6)$$

$$\frac{6}{3-2(6)} + 6^2 + 8(6) - 3$$
$$80 \frac{1}{3} = \frac{241}{3}$$

$$f\left(\frac{1}{2}\right) \cdot g\left(\frac{1}{2}\right) \text{ or } (f \cdot g)\left(\frac{1}{2}\right)$$

$$3\left(\frac{1}{2}\right)^3 + 20\left(\frac{1}{2}\right)^2 - 41\left(\frac{1}{2}\right) + 12$$
$$-\frac{25}{8} = -3\frac{1}{8}$$

$$\frac{f(0)}{g(0)} \text{ or } \left(\frac{f}{g}\right)(0)$$

$$\frac{3(0) - 4}{0^2 + 8(0) - 3} = \frac{4}{3} \text{ or } 1\frac{1}{3}$$