

Addition

Given $f(x)$ and $g(x)$,

$$(f + g)(x) = f(x) + g(x)$$

$$f(x) = 2x + 3 \quad g(x) = 4x - 5$$

$$f(x) + g(x)$$

$$f(x) = 4x^2 + 3x \quad g(x) = -2x^2 + 8x + 7$$

$$f(x) + g(x)$$

Subtraction

Given $f(x)$ and $g(x)$,

$$(f - g)(x) = f(x) - g(x)$$

$$f(x) = 4x + 1 \quad g(x) = x - 5$$

$$f(x) - g(x)$$

$$f(x) = x^2 - 6 \quad g(x) = -x^2 + 3x + 10$$

$$f(x) - g(x)$$

Multiplication

Given $f(x)$ and $g(x)$,

$$(f \cdot g)(x) = f(x) \cdot g(x)$$

$$f(x) = x + 6 \quad g(x) = 2x - 8$$

$$f(x) \cdot g(x)$$

$$f(x) = 2x^2 + x \quad g(x) = x^2 + 3x + 1$$

$$f(x) \cdot g(x)$$

Division

Given $f(x)$ and $g(x)$,

$$\left(\frac{f}{g}\right)(x) = \frac{f(x)}{g(x)}, \quad g(x) \neq 0$$

$$f(x) = 2x + 6 \quad g(x) = 4x - 10$$

$$\frac{f(x)}{g(x)}$$

$$f(x) = x^2 + 5x + 6 \quad g(x) = x^2 - x - 6$$

$$\frac{f(x)}{g(x)}$$

Given $f(x)$ and $g(x)$,

Addition

$$(f + g)(x) = f(x) + g(x)$$

Subtraction

$$(f - g)(x) = f(x) - g(x)$$

Multiplication

$$(f \cdot g)(x) = f(x) \cdot g(x)$$

Division

$$\left(\frac{f}{g}\right)(x) = \frac{f(x)}{g(x)}, \quad g(x) \neq 0$$