

## Operations on Two Functions

Just like numbers, functions can be **added**, **subtracted**, **multiplied**, and **divided**.

$$f(x) = 5x + 6$$

$$g(x) = x^2 + 2x - 15$$

The **sum**  $f + g$

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

The **product**  $f \cdot g$

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

The **difference**  $f - g$

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

The **quotient**  $\frac{f}{g}$

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

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The difference  $f - g$

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

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The sum  $f + g$

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

The product  $f \cdot g$

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

The difference  $f - g$

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

The quotient  $\frac{f}{g}$

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