

17.1 – Adding & Subtracting Functions

Function Operations	
Addition	$(f + g)(x) = f(x) + g(x)$
Subtraction	$(f - g)(x) = f(x) - g(x)$

Examples:

1. Let $f(x) = 3x + 8$ and $g(x) = 2x - 12$.

$$(f + g)(x) = \underline{5x - 4}$$

$$f(x) + g(x) = \underline{3x + 8} + \underline{2x - 12} \quad \text{Combine Like Terms!}$$

$$(f - g)(x) = \underline{x + 20}$$

$$f(x) - g(x) = 3x + 8 - (2x - 12) \quad \text{Distribute the Negative!}$$

$$= \underline{3x + 8} - \underline{2x} + \underline{12} \quad \text{Combine Like Terms!}$$

2. Let $f(x) = 2x - 5$ and $g(x) = x^2$.

$$(g + f)(x) = \underline{x^2 + 2x - 5}$$

$$g(x) + f(x) = x^2 + 2x - 5 \quad \text{No Like Terms!}$$

$$(g - f)(x) = \underline{x^2 - 2x + 5}$$

$$g(x) - f(x) = x^2 - (2x - 5) \quad \text{Distribute the Negative!}$$

$$= x^2 - 2x + 5 \quad \text{No Like Terms!}$$