Operations of Functions

Given two functions f and g, then for all values of x for which both $f(x)$ and $g(x)$ are defined, the functions $f + g$, $f - g$, fg, and f/g are defined as follows.

$$(f+g)(x) = f(x) + g(x) \quad \text{Sum}$$

$$(f-g)(x) = f(x) - g(x) \quad \text{Difference}$$

$$(fg)(x) = f(x) \cdot g(x) \quad \text{Product}$$

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