3.2 Operations with Functions

Function Notation: looks like $f(x)$
                        read like "f of x"

Ex1: Find specified function value

a) $f(x) = 3x + 5$ for $x = 6$

$$f(6) = 3(6) + 5$$
$$= 18 + 5$$
$$\boxed{f(6) = 23}$$

b) $h(x) = \sqrt{2x} - 7$ for $x = 3$

$$h(3) = \sqrt{2(3)} - 7$$
$$= \sqrt{6} - 7$$
$$\boxed{h(3) = -4.6}$$

Ex2 Use $f(x) = 2x^2 + 5x$ and $g(x) = -x - 9$

a) Find $(f + g)(x)$

$\rightarrow \boxed{f(x)} + \boxed{g(x)}$

$$2x^2 + 5x + (-x - 9)$$
$$2x^2 + 5x - x - 9$$
$$2x^2 + 4x - 9$$
$$\boxed{(f+g)(x) = 2x^2 + 4x - 9}$$

b) Find $(f - g)(x)$

$$f(x) - g(x)$$
$$2x^2 + 5x - (-x - 9)$$
$$2x^2 + 5x + x + 9$$
$$2x^2 + 6x + 9$$
$$\boxed{(f-g)(x) = 2x^2 + 6x + 9}$$

Try... Use $f(x) = 2x - 1$ and $g(x) = x - 3$

a) Find $(f + g)(x)$

b) Find $(f - g)(x)$