Exercises

(1) If $f(x) = 3x + 1$, then find the following

    (a) $f(1)$ (b) $f(-2)$ (c) $f(x + \psi)$ (d) $f(x^3)$

(2) If $f(x) = 3x^2 + x - 2$, then find the following

    (a) $f(-1)$ (b) $f(x^2)$ (c) $\dfrac{f(x + h) - f(x)}{h}$

(3) Find $f(g(x))$, $g(f(x))$, $f(f(x))$ and $g(g(x))$ for the following.

    (a) $f(x) = \dfrac{1}{x}, \quad g(x) = x + 3$

    (b) $f(x) = \dfrac{x}{2}, \quad g(x) = 2x$

    (c) $f(x) = x^2, \quad g(x) = \sqrt{x} \quad (x \geq 0)$

Answers to Exercises

(1)   (a) 4   (b) -5 (c) $3(x + h\psi\psi\psi f\psi\psi\psi\psi\psi f\psi\psi\psi g\psi$