

1. Let $f(x) = 5 + 3x - x^2$ and $g(x) = \frac{x - 4}{3x - 1}$.

(a) Evaluate $f(-2)$, $g(4)$, $f\left(\frac{5}{7}\right)$ and $g\left(\frac{3}{4}\right)$.

(b) Find and simplify $f(x + 5)$.

(c) Find and simplify $f\left(\frac{3}{x - 2}\right)$.

(d) Find and simplify the difference quotient of f .

(e) Find and simplify $g\left(\frac{2}{x+5}\right)$.

2. (a) Find the domain of $f(x) = \frac{x^2 - 9}{x^2 + 4x - 12}$.

(b) Find the domain of $g(x) = 3x^3 - 5x^2 - 7x + 12$.

(c) Find the domain of $h(x) = \sqrt{x^2 - 16}$.