

Calculus 12
5-1 Questions

1. Find the domains of the following functions.

a) $f(x) = 1 - 18x$

b) $h(x) = \sqrt{x - 5}$

c) $G(x) = \sqrt{1 - x^2}$

d) $y = \frac{3 + x}{3 - x}$

e) $y = \frac{1}{\sqrt{t^2 + 5}}$

f) $f(x) = \sqrt{x} + \sqrt{4 - x}$

2. Find $f \circ g$, $g \circ f$, $f \circ f$, and $g \circ g$.

a) $f(x) = 2x - 1$, $g(x) = 4 - 3x$

b) $f(x) = 1 - x^2$, $g(x) = 5$

c) $f(x) = \sqrt{x}$, $g(x) = x^2 - 4$

d) $f(x) = \frac{1}{1-x}$, $g(x) = \frac{x-2}{x+2}$

3. Find functions f and g such that $h(x) = f(g(x))$.

a) $h(x) = (2x + 1)^9$

b) $h(x) = 1 + 2x^2 + 3x^4$

c) $h(x) = \frac{1}{x^2 - 7}$

d) $h(x) = \sqrt{6 + x}$