1.8 Combinations of Functions: Composite Functions

Name: Date: June 24, 2013

P 13. Find (a) $(f+g)(x)$, (b) $(f-g)(x)$, (c) $(fg)(x)$, and (d) $(f/g)(x)$. What is the domain of f/g?

$$f(x) = x^2 + 6, \quad g(x) = \sqrt{1-x}$$

P 15. Find (a) $(f+g)(x)$, (b) $(f-g)(x)$, (c) $(fg)(x)$, and (d) $(f/g)(x)$. What is the domain of f/g?

$$f(x) = \frac{1}{x}, \quad g(x) = \frac{1}{x^2}$$

P 18. Evaluate the indicated function for $f(x) = x^2 + 1$ and $g(x) = x - 4$.

$$(f - g)(-1)$$

P 28. Evaluate the indicated function for $f(x) = x^2 + 1$ and $g(x) = x - 4$.

$$(fg)(5) + f(4)$$

P 41. Find (a) $f \circ g$ and (b) $g \circ f$. Find the domain of each function and each composite function.

$$f(x) = \sqrt{x+4}, \quad g(x) = x^2$$

P 48. Find (a) $f \circ g$ and (b) $g \circ f$. Find the domain of each function and each composite function.

$$f(x) = \frac{3}{x^2 - 1}, \quad g(x) = x + 1$$

P 57. Find two functions f and g such that $(f \circ g)(x) = h(x)$.

$$h(x) = \frac{1}{x+2}$$

P 59. Find two functions f and g such that $(f \circ g)(x) = h(x)$.

$$h(x) = \frac{-x^2+3}{4-x^2}$$