Pg. 84 1.8 – Combinations of Functions: Composite Functions

Sum: $(f+g)(x) = f(x) + g(x)$

Difference: $(f-g)(x) = f(x) - g(x)$

Product: $(fg)(x) = f(x) \cdot g(x)$

Quotient: $\left(\frac{f}{g}\right)(x) = \frac{f(x)}{g(x)}$

Composition: $(f \circ g)(x) = f(g(x))$

Ex 1:

$f(x) = 2x - 5$ $\quad$ $g(x) = 2 - x$

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

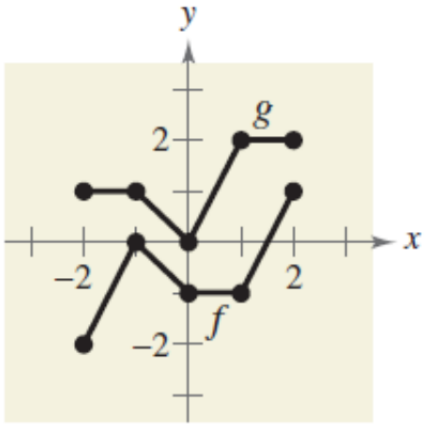
b) $(f-g)(x) =$

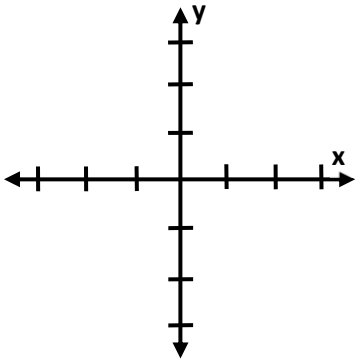
c) $(fg)(x) =$

d) $\left(\frac{f}{g}\right)(x) =$

Ex 2:

Use the graphs of f and g to graph h(x) = (f + g)(x).





Ex 3:

$$f(x) = x^2 + 1 \qquad g(x) = x - 4$$

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

b) $(f + g)(t - 2)$

Ex 3:

$$f(x) = 3x + 5 \qquad g(x) = 5 - x$$

a) $f \circ g$

b) $g \circ f$

c) $f \circ f$

Ex 4:

Find the domain of each function and each composite function.

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

Note: The domain of the composite function is the combined domain of the function being inputed along with the new function.

a) f

b) g

c) $f \circ g$

d) $g \circ f$

Assignment 1.8

Pg. 89 Vocab #'s 1-4 ALL Problem Set #'s 1-27 ODD, 31-53 ODD, 57, 63