Pg. 56, #13 $f(x) = 3x^2$, $g(x) = 6-5x$

a) $(f+g)(x) = f(x) + g(x) = \boxed{3x^2 + 6 - 5x}$

b) $(f-g)(x) = f(x) - g(x) = 3x^2 - (6-5x) = \boxed{3x^2 - 6 + 5x}$

c) $(fg)(x) = f(x) \cdot g(x) = 3x^2(6-5x) = \boxed{18x^2 - 15x^3}$

d) $(f/g)(x) = \dfrac{f(x)}{g(x)} = \boxed{\dfrac{3x^2}{6-5x}}$

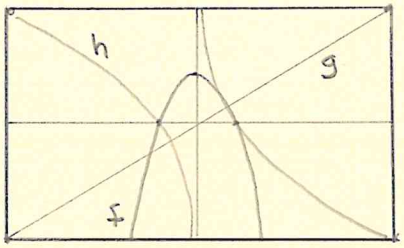
e) Since $6-5x = 0 \Rightarrow x = 6/5$, Domain of (f/g) is all real numbers except $6/5$.

Pg. 56, #36

$f(x) = 4 - x^2$

$g(x) = x$

$h(x) = f(x) / g(x)$



Pg. 57, #42 $f(x) = \sqrt[3]{x-1}$, $g(x) = x^3 + 1$

a) $(f \circ g)(x) = f(g(x)) = f(x^3+1) = \sqrt[3]{(x^3+1)-1} = \sqrt[3]{x^3} = \boxed{x}$

b) $(g \circ f)(x) = g(f(x)) = g(\sqrt[3]{x-1}) = (\sqrt[3]{x-1})^3 + 1 = x - 1 + 1 = \boxed{x}$

c) $(f \circ g)(0) = f(g(0)) = f(0^3+1) = f(1) = \sqrt[3]{1-1} = \boxed{0}$

Pg. 57, #71 $h(x) = (2x+1)^2$

One possibility: $f(x) = x^2$, $g(x) = 2x+1$

Then $h(x) = (f \circ g)(x)$.