ECO137 HW Questions for Chapter 5 "Properties of Functions"

1. If f(x) = 3x - x3, and g(x) = x3, compute (f + g)(x), (f-g)(x), (fg)(x), (f/g)(x), f(g(1)) and g(f(1)).

2. Let f(x) = 3x + 7. Compute f(f(x)). Find the value x* when f(f(x)) = 100.

3. Demand D as a function of price P is given by D = 32/5 - 3/10 P. Solve the equation for P and find the inverse function.

4. Find the domains, ranges and inverses of the functions given by the following formula.
(a) y = 1/x (b) $y = x^3$

5. Find the inverse of the following functions.
(a) $y = e^{x+4}$ (b) y = lnx - 4, x>0.

6. Determine the distance between the two points, (1, 3) and (2,4).