Calculus 12
8-3 Increasing and Decreasing Functions

1. Find the intervals on which the following functions are increasing.

a) $f(x) = 12 + x - x^2$

b) $f(x) = x^4$

c) $g(x) = x^3 - 3x + 2$

d) $y = 2x^3 - 3x^2$

2. Find the intervals on which the following functions are decreasing.

a) $f(x) = x^2 + x^3$

b) $g(x) = 2x^3 - 3x^2 - 36x + 62$

c) $h(x) = \left(1 - x^2\right)^2$

d) $F(x) = 4x + x^4$

3. Find the intervals of increase and decrease for the following functions.

a) $f(x) = 3x^2 - 18x + 1$

b) $f(x) = 2x^3 - 9x^2 - 60x + 82$

c) $g(x) = x^3(x-1)^4$

d) $h(x) = \dfrac{x-1}{x+1}$