W3 – Newton Quotient
MHF4U

1) Find the equation of the derivative for each of the following functions. Also, find the instantaneous rate of change for the function when $x = 4$ and $x = -1$.

a) $f(x) = 3x - 8$

b) $y = 20x + x^2$

c) $y = 2x^3 + 4$

d) $f(x) = x^2 - 9x + 17$

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

f) $f(x) = \frac{1}{x}$

2) State whether the functions are increasing, decreasing, or neither when $x = 4$ for each function in #1. How do you know?

3)a) State the derivative of $f(x) = x^3$

b) Evaluate $f'(-6)$

c) Determine the equation of the tangent line at $x = 6$