Student Name:_____ Student Number: _____ Serial No.:_____

Instructor: M. Z. Abu-Sbeih Math - 132.1 Quiz No. 2 Date: 16-2-2016.

Problem 1: (20 points)

(a) Use the definition of the derivative to find $f'(3)$ where $f(x) = \dfrac{1}{x-2}$

(b) Find the equation of the line tangent to the curve $y = 3x^2 - 4$ at the point (1, -1).

(c) A circular disk is being heated. Find the rate of change in the area of the disk with respect to the radius when the radius is $r = 2\ ft$. Also find the percentage rate of change at $r = 2\ ft$.

Problem 2: (20 points) Find the derivative of each of the following functions

(a) $f(x) = \sqrt{x} + \frac{1}{\sqrt{x}}$

(b) $f(x) = \frac{(1+x)^3}{x^2+4}$

(c) $f(m) = \frac{m^2}{\sqrt{m^3+1}}$