Math 1110-102

Homework #1

Name: ____

Be sure to show your work!



- (a) Draw the secant line through the point located at x = -1 and x = 1. Also, draw the secant line through the points at x = 1 and x = 2.
- (b) Find the average rate of change of f(x) as x changes from x = -1 to x = 1. Then find the equation of the corresponding secant line.

(c) Find the average rate of change of f(x) as x changes from x = 1 to x = 2. Then find the equation of the corresponding secant line.

#2.	Consider the following table of information about the function $g(x)$ and its derivative $g'(x)$:	<i>g</i> (
(a) F	Find the equation of the line tangent to $y = q(x)$ based at $x = -2$.	g'(

x =	-2	0	3	6
g(x) =	1	4	-2	0
g'(x) =	5	-1	0	2

- (b) Find the equation of the line tangent to y = g(x) based at x = 3.

#3. For each of the following functions, (i) Find the derivative using rules/short cuts (like the power rule, etc.) and then (ii) Find the derivative using the limit definition: $f'(x) = \lim_{h \to 0} \frac{f(x+h) - f(x)}{h}$.

(a) $f(x) = 2x^3 - x + 5$ (i) f'(x) =_____

(ii) f'(x) by limit definition...

(b) $f(x) = \frac{1}{x}$ (i) f'(x) =_____

(ii) f'(x) by limit definition...