Dawson College: Functions and Trigonometry: 201-009-50-C2: Fall 2008

Name: Yann Lamontagne
Student ID: _____

Quiz 5

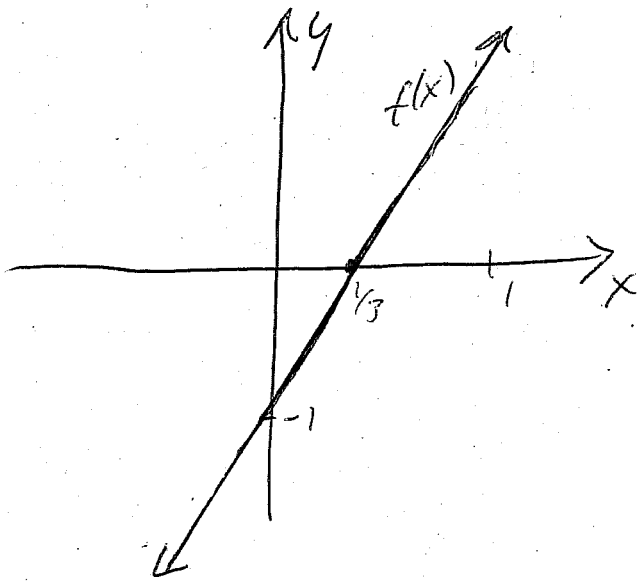
This quiz is graded out of 10 marks. No books, calculators, notes or cell phones are allowed. You must show all your work, the correct answer is worth 1 mark the remaining marks are given for the work. If you need more space for your answer use the back of the page.

Question 1. pg.81#2c *(3 marks)* Use the intercepts to graph the linear function:

$f(x) = 3x - 1$

X-int:
let $y = 0$
$0 = 3x - 1$
$\frac{1}{3} = x$
$\therefore (\frac{1}{3}, 0)$

y-int:
$\therefore (0, -1)$



Question 2. pg.88#2k *(4 marks)* Find the equation of the line through $(4, -5)$ and $(8, 13)$.

$m = \frac{\Delta y}{\Delta x}$
$= \frac{13 - (-5)}{8 - 4}$
$= \frac{18}{4}$
$= \frac{9}{2}$

$y = \frac{9}{2}x + b$
$13 = \frac{9}{2}(8) + b$
$b = 13 - 36$
$b = -23$

$\therefore y = \frac{9}{2}x - 23$

Question 3. pg.75#52 *(3 marks)* Find $\frac{f(x+h)-f(x)}{h}$ and simplify completely:

$f(x) = 2x^2 - 5x - 3$

$\frac{f(x+h) - f(x)}{h}$
$= \frac{2(x+h)^2 - 5(x+h) - 3 - [2x^2 - 5x - 3]}{h}$
$= \frac{2x^2 + 4xh + 2h^2 - 5x - 5h - 3 - 2x^2 + 5x + 3}{h}$
$= \frac{4xh + 2h^2 - 5h}{h}$
$= \frac{h(4x + 2h - 5)}{h}$
$= 4x + 2h - 5$