Math 1210: Quiz #1 — Winter 2017

Name: ANS C/D	A#:	Section:

[4] 1. If $f(x) = \dfrac{3x}{x^2 - 5x + 3}$ and $g(x) = x^2 - 1$ then (do not simplify)

$f(g(x)) =$ $\dfrac{3(x^2-1)}{(x^2-1)^2+5(x^2-1)+3}$

$g(f(x)) =$ $\left(\dfrac{3x}{x^2+5x+3}\right)^2-1$

[4] 2. Circle equations of lines. (negative points for all wrong circles)

$3x + 2y + 7 = 0$	$y = 4x + \cos 4$	$y = 3x + \cos(y)$	$x = \ln(7)$
$5x + (\sin 1)y = 8$	$(y - e^3) = -5(x - \tan 3)$	$y - 1 = e^y(x^2 - 3)$	$x + y = 0$

[4] 3. State the slope of the line, the x-intercept, the y-intercept, and the slope of any perpendicular line to the line L given by the equation $2x + y + 3 = 0$.

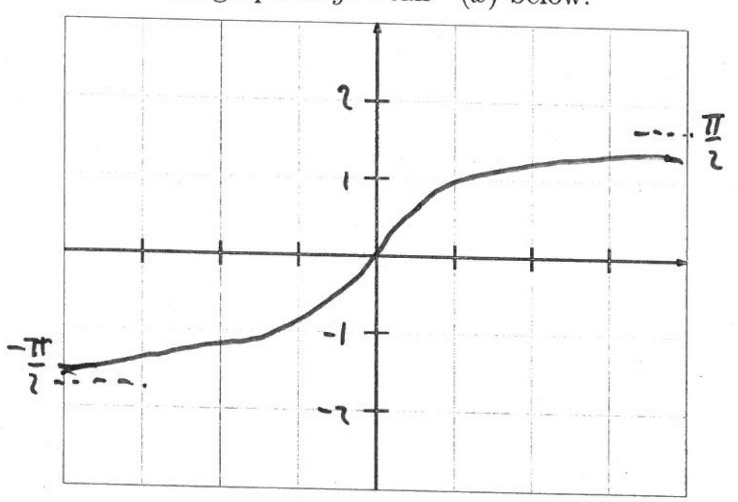
The slope of L is -2

The $x -$ intercept of L is $1\frac{1}{2}$

The $y -$ intercept of L is 3

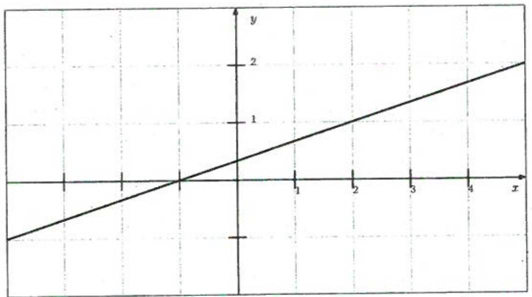
The slope of any line perpendicular to L is $\frac{1}{2}$

[2] 4. Sketch the graph of $y = \tan^{-1}(x)$ below.



v1.AB

[2] 5. Find the equation of the line L shown on the graph below.



equation of L : $y = \frac{1}{3}x + \frac{1}{3}$

[4] 6. Find the equation of the secant line L of the curve $y = x^3 - 2x + 4$ above the interval $[-1, 2]$. *(Recall that a secant line to the curve $y = f(x)$ above the interval $[a, b]$ is the line passing through points $(a, f(a)), (b, f(b))$ and usually has no relationship to the* $\sec x$ *function.)*

$y(-1) = 5 \quad y(2) = 8$

$m = \frac{y(2) - y(-1)}{2 - -1} = \frac{3}{3} = 1$

$b = f(-1) + (0 - -1)m = 6$

$L(x) = 6x + 1$

v1.AB