Math 1210: Quiz #1 **Winter 2017**

Name: SOLUTION	A#:	Section: A,B

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

$f(g(x)) = \dfrac{2(x^2+1)}{(x^2+1)^2 - 2(x^2+1) + 4}$

$g(f(x)) = \left(\dfrac{2x}{x^2 - 2x + 4}\right)^2 + 1$

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

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

[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 $2x + 5y + 3 = 0$.

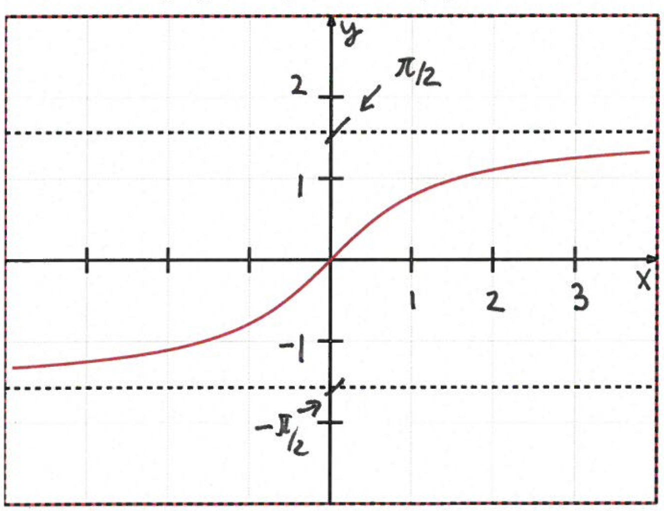
The slope of L is $-\frac{2}{5}$

The x − intercept of L is $-\frac{3}{2}$

The y − intercept of L is $-\frac{3}{5}$

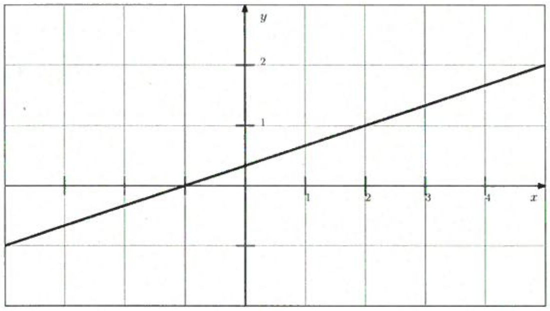
The slope of any line perpendicular to L is $\frac{5}{2}$

[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 : $\boxed{y-1=\frac{1}{3}(x-2)}$ or $\boxed{y=\frac{1}{3}x+\frac{1}{3}}$

[4] 6. Find the equation of the secant line L to the curve $y = x^3 - 2x - 1$ on the interval $[0, 2]$. *(Recall that a secant line to the curve $y = f(x)$ on 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.)*

Points : $(0,-1)$, $(2,3)$

slope $= \frac{3-(-1)}{2-0} = \frac{4}{2} = 2$

L: $\boxed{y+1 = 2(x-0)}$ or $\boxed{y = 2x - 1}$