MA181 Katiraie Professor Katiraie Calculus I; Spring 08 Quiz Four Form C
Tuesday Thursday Class

Name:_____

1) Differentiate the following functions: (2 Points)

A) $f(x)=\dfrac{x^3+4\sqrt{x}+3}{\sqrt{x}}$

B) $y=\dfrac{1-\sin x}{-2\cos x}$

2) If $f(x)=-2e^x g(x)-7x$
And $g(0)=4$ and $f'(0)=-6$, find $g'(0)$.

(2 Points)

3) Prove that $\dfrac{d}{dx}(10\sec x)=10\sec x\tan x$

(2 Points)

4) Find **all values of** x so that the graph of $f(x)=\sqrt{3}\,x+2\cos x$ will have a horizontal tangent?

(2 Points)

5) Find th**e equation of the tangent line** to the curve $y=-2\cos x$ at the point $\left(\frac{5\pi}{6},\ \sqrt{3}\right)$

(2 Points)

6) Find the equation of the tangent line to the curve $y=-2e^{x}\cos x$, at the point $(0,\ 2)$

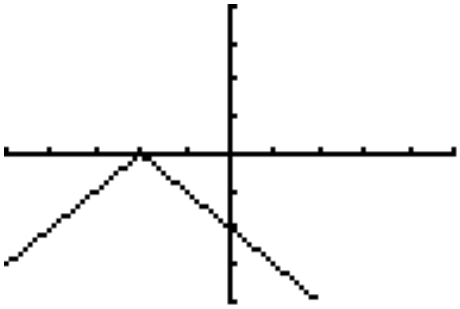
(2 Points)

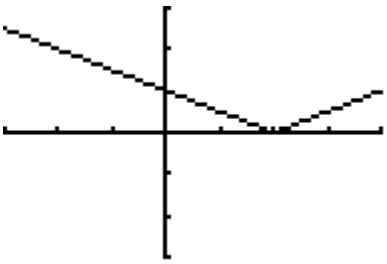
7) Find the equation of the tangent line to the curve $y=x\sin x$, at the point $(\frac{\pi}{2},\frac{\pi}{2})$

(2 Points)

7) Given that $v(x)=\frac{f(x)}{g(x)}$, and $w(x)=f(x)g(x)$ (3 Points)

And graphs of f(x) and g(x)





Find the following:

$v'(1)$

$w'(-1)$

$w'(-2)$

(3 Points)

8) The position of a particle is given by the equation $S(t)=\frac{t^3}{3}-3t^2+8t$

where "t" is measured in seconds and "S" is in meters.

a) When is the particle at rest?

b) When is the particle speeding up?