MATH 151 **QUIZ 3A** NAME _____

Mrs. Bonny Tighe 3.3-3.5

25 points SECTION _____ Fri 2/24/06

1. Find dy/dx or f '(x).

a) $f(x) = 2x^3 - 4x + \frac{1}{x^3} + 4$

b) $f(x) = 3x\sqrt{x} - \frac{1}{x^2\sqrt{x}}$

c) $y = \frac{3\sec x - \sin x}{\sin x - x^3}$

f) $f(x) = (3x^4 - \csc x)(\frac{3}{x^2} + 2x^3)$

2. If f(x) = $\sin x + \cot x$, find the following:

a) f($\pi/3$) = _____ b) f($-\pi/6$)=_____ c) f'($\pi/4$)= _____ d) f'($\frac{\pi}{2}$)= _____

3. Find the limit.

a) $\lim_{x\to 0^+}(\cot x)$ = _____ *b)* $\lim_{x\to 0}\frac{\sin 4x}{x}$ = _____ *c)* $\lim_{\alpha\to 0}\frac{1-\cos\alpha}{\sin 3\alpha}$ = _____

4. Find an equation of the tangent to the curve y= $x(\sqrt{x}-1)$ at the point (4,4).

5. *If* $f(3)=2$, $g(3)=-1$, $f'(3)=1$ *and* $g'(3)=3$, *find the following* :

a) $(f+g)'(3)$ = _____ *b)* $(fg)'(3)$ = _____ *c)* $\left(\frac{g-f}{g}\right)'(3)$ = _____