MATH 151   QUIZ 9   NAME _____
Mrs. Bonny Tighe   25 points
                           5.3,5.4,5.5   SECTION _____ Fri 4/28/06

1.   Use the Fundamental Theorem of Calculus Part I to find the derivative of each of
     the following:

a) $\int_{x}^{2} \cos m\sqrt{1+\sin m}\ dm =$ _____

b) $\int^{\cos x} (t^3 - 2t + 1)dt =$ _____

2.   Use Part 2 of the Fundamental Theorem of Calculus to evaluate the integral, or
     explain why it doesn't exist.

a) $\int_{1}^{3} \sqrt{x}(2x-1)dx =$ _____

b) $\int_{0}^{\pi/4} \sec^2 x\ dx =$ _____

3.   Find the general indefinite integral.

a) $\int (x^2\sqrt{x} + \frac{2}{x^3})\ dx =$ _____

b) $\int (x^2 + x)^2 dx =$ _____

c) $\int \frac{\sin 2\phi}{\sin \phi}\ d\phi =$ _____

d) $\int \sec A \tan A\ dA =$ _____

4.   The velocity function, in meters per second, is given for a particle moving along a line. Find the a) displacement and   b) the total distance traveled by the particle during the given time interval. $v(t) = t^2 + 5t - 6$, $0 \le t \le 4$

4. Evaluate the integral, if it exists, using substitution.

a) $\int \dfrac{x^2}{(4-x)^3} dx = $ _____

b) $\int \sec^6 \alpha \, \tan \alpha \, d\alpha = $ _____

c) $\int_0^{\pi/6} \cos 3x \, dx = $ _____

d) $\int x \sin(x^2 + 3) dx = $ _____

e) $\int \csc^2 (\sin x) \cos x \, dx = $ _____

f) $\int \cos x \, \sin^5 x \, dx = $ _____