Math 125

Show Your Work! October 6, 2008 Name _____
Good Luck! Quiz #2 A (please print)

1. State (carefully and completely) **Part 1** of the Fundamental Theorem of Calculus:

If

(2)

then

2. Use calculus to evaluate these integrals. **Show your work** (no work = no points)

(a) $\int_0^3 x^2 - 2x \ dx =$ _____ (b) $\int_1^4 9x^2 + \sqrt{x} \ dx =$ _____

(6)

3. (a) An antiderivative of $f(x) = e^{3x} + \frac{2}{x} + 12x^2$ is $F(x) =$ _____

(b) An antiderivative of $f(x) = 6\cos(2x) - \frac{3}{x^2}$ is $F(x) =$ _____

(4)

4. (a) $\frac{d}{dx}\left(\int_2^x \sqrt{t^2 + \tan(t)} \ dt \right) =$ _____

(6) (b) $\frac{d}{dx}\left(\int_2^{\sin(x)} t + e^{5t} \ dt \right) =$ _____

(c) $\frac{d}{dx}\left(\int_3^7 t^5 + \cos(t^2) + \pi \ dt \right) =$ _____

5. What are the units of $\int f(x)dx$ if

(1) (a) the units of x are "students" and the units of f(x) are "days"? _____

(1) (b) the units of x are "dollars" and the units of f(x) are "miles per dollar"? _____

6. (a) Name the Englishman credited with inventing/discovering calculus: _____ (1)

(b) What is one of the calculus notations invented by Leibniz that we still use? _____ (1)