Math 152

Show Your Work! October 20, 2008 Name _____

  Good Luck! Quiz #3 A (please print)

1. Use the FTC (antiderivs) to evaluate $\int_{0}^{2} \dfrac{6x^2}{\sqrt{1+x^3}}\, dx = $ _____ (number 2 decimal places)

(4)

2. Find the AREA between the curves $f(x) = 4 - x$ and $g(x) = x^2 - 6x + 8$ for $0 \le x \le 4$.

   Area = _____ (number 2 decimal places)

(4)

3. Calculate the Average Value of $g(x) = x^2 - 6x + 9$ on the interval $[0, 4]$.

   Average Value = _____ (number 2 decimal places)

(4)

3. You are the top of a 12 foot tall dock lifting a 20 pound fish using a cable that weighs 3 pounds per foot. How much work do you do lifting the fish to the top of the dock?

   Work = _____ (number and UNITS)

(4)

4. Use your calculator (fnInt command) to evaluate

(2) $\int_{0}^{2} \sqrt{2 + \sin(3x)}\; dx = $ _____ (number 4 decimal places)

5. What are the units of $\int f^2(x)\,dx$ if the units of x are "days" and the units of f(x) are

(2) "meters/day"? _____

6. The Average Value of $f(x) = \sqrt{9 - x^2}$ on the interval $[-3,\ 3]$ is _____ (exact number)

(2)