Math 152

Show your work January 25, 2011 Name _____
Good Luck! Quiz #3 A please print

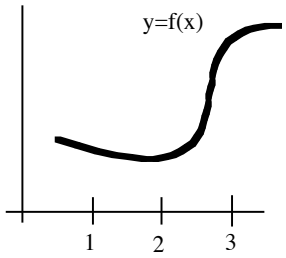
1. (a)Give the antiderivative of $\sin^2(x)$: $\int \sin^2(x)\ dx$ = _____

(2)

(b) The Average Value of $f(x) = \sin^2(x)$ for $0 \le x \le \pi$ is _____ (decimal to 2 places)

(2)

2. The figure shows a function y=f(x).
Mark and label (with an A) on the y-axis the location of
the average value of this function on the interval $1 \le x \le 3$.



(2)

3. (a) Represent the area between $f(x) = 3x^2$ and $g(x) = 4 - x^2$ for $-1 \le x \le 2$ as definite integral(s).

area = $\int$

(4)

(b) Evaluate the integral(s) in part (a). area = _____ (decimal to 2 places)

(4)

4. Use your calculator to evaluate $\int_1^3 \sqrt{\sin(x) + x^2}\ dx$ = _____ (decimal to 2 places)

(2)

5. $\int \frac{6x}{1+x^2}\ dx$ = _____

(2)

$\int \cos(x)\left(3+\sin(x)\right)^4\ dx$ = _____

(2)

6. If the units of x are "hours", the units of f(x) are "meters/hours" and the units of g(x) are "dollars"

(1) then the units of $\int \frac{f(x)}{g(x)}\ dx$ are _____