Pledge:

| 4/14/2009 | MATH261 Calculus I | Name: |
|--------------|--------------------|-------------------|
| Dr. Lunsford | Quiz 12 | (40 Points Total) |

I. Below you are given the graph of $y = 4 - x^2$. Please answer the following questions. (7 points total)

(a) Compute the left endpoint sum from x = 0 to x = 2 with n = 4 equal length sub-intervals. You DO NOT need to simplify your answer (i.e. once you have all numbers - STOP! Represent this sum graphically using the graph to your right. (5 points)



more than the integral $\int_{0}^{2} 4 - x^{2} dx$. (2 points)

II. Below you are given the graph of the cosine function. Please answer the following questions. (6 points total) Graph for Problem II

less than

equal to

(a) Find
$$\int_{0}^{3\pi/2} \cos(x) dx$$
. (4 points)



Graph for Problem I

4

3.

2

1

0

0.5

1 X 1.5 2

(b) Explain using the graph of the cosine function why your answer in part (a) is a negative number. (2 points)

III. Suppose
$$g(x) = \int_{0}^{x^{2}} 1 + t^{3} dt$$
. Find $g'(x)$. (5 points)

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IV. Find the indicated integrals. You should show at least one intermediate step. (4 points each -12 points total)

1.
$$\int_{0}^{1} \frac{4}{t^2 + 1} dt$$

$$2. \int_{1}^{9} \frac{1}{2w} dw$$

$$3. \int_{1}^{8} \sqrt[3]{x} \, dx$$

V. Find the indicated integrals. You must clearly show any substitutions necessary to find these integrals. (5 points each, 10 total)

1.
$$\int x^2 e^{x^3} dx$$

2.
$$\int x^3 5 - x^4 dx$$