QUIZ 8 - MATH 112 Friday, April 8

YOUR NAME:_____ George Voutsadakis

Read each problem **very carefully** before starting to solve it. Each problem is worth around 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. [6 points] Compute the following integrals:

$$\int (x^5 + 4x^3 - 1)dx =$$

$$\int \left(\sqrt{x} - \frac{3}{\sqrt[3]{x}}\right) dx =$$

$$\int \frac{x^5 - x^3 + x}{x^3} dx =$$

2. [4 points] Recall that the velocity $v(t)$ of a moving object is the derivative of its distance function $s(t)$. Suppose that a moving object has velocity

$$v(t) = t^2 + \frac{2}{\sqrt[5]{t^3}} \text{ m/sec}$$

and that its initial (time $t = 0$) distance from the origin is $\frac{31}{3}$ meters. Find an equation for the distance $s(t)$ of the object from the origin at time t.