

NAME:

SECTION: (circle one) 11:00-11:55 12:05-1:00

Math 105 - Quiz 4 - October 3, 2005

Instructions: Show all of your work and circle your final answers. Calculators are allowed, but notes and books are not.

1. Is $y = x^2 + 3x$ a solution of the differential equation $y'' - 4xy' + 4y = 0$? Justify your answer.

2. The position of a particle on the x -axis at time $t > 0$ seconds is $x(t) = \ln t$ meters.

(a) Find the average velocity of the particle over the interval $1 \leq t \leq e$.

(b) Find the instantaneous velocity of the particle at time $t = e$.

3. Find a function F such that $F' = x^2 - \sin x$ and $F(0) = 1$.