Quiz no. 5 (1100-1 Quantitative Analysis, Spring 2008)
March 7, 2008

25 min. No symbolic calculators allowed (TI-89 and similar)! (TI-86 or lower are allowed.) Show all work.

1. (14 points) Compute the derivatives $f'(x)$ for the following functions:

   $f(x) = 2 \ln 4x$ \hspace{1cm} (1a)

   $f(x) = x^4 \cdot \ln x$ \hspace{1cm} (1b)

   $f(x) = e^{x^2-1}$ \hspace{1cm} (1c)

   $f(x) = \frac{x}{e^x}$ \hspace{1cm} (1d)
2. (5 points) Find an expression for \( \frac{dy}{dx} \) if \( x^3 + y^2 = 3 \)

3. (6 points) Find the slope of the tangent to the curve given by \( x^2 - xy - y^2 = 3 \) at \( (2, -1) \).