Quiz no. 6 (1100-2 Quantitative Analysis, Spring 2008)
March 28, 2008

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

1. (12 points) Compute the following anti-derivatives:

\[ \int (x^3 + \sqrt{x} - \frac{1}{x^3}) \, dx = \]

(1a)

\[ \int (x^2 + 2)^4 \, 2x \, dx = \]

(1b)

\[ \int xe^{x^2} \, dx = \]

(1c)
2. (5 points) Approximate the area between the graph of $y = x^3$ and the $x$-axis for $0 \leq x \leq 3$ using 3 rectangles.

3. (8 points) Compute the following definite integrals:

\[
\int_1^2 (x^3 - \frac{1}{x}) \, dx = \quad (2a)
\]

\[
\int_0^1 \frac{x^3}{x^4 + 1} \, dx = \quad (2b)
\]