DEPARTMENT OF MATHEMATICS AND STATISTICS
UNIVERSITY OF MASSACHUSETTS
MATH 131 Fall 2003
DERIVATIVE TEST

Your Section Number: _____

Your Instructor's Name: _____

Print Your Name: _____

Sign Your Name: _____

This exam consists of 7 questions. It has 2 numbered pages, where the last is a blank page for scratch-work.

On this exam, NO CALCULATORS OR NOTES may be used. Do NOT simplify results.

Leave the space below empty!

        1. (10) _____

        2. (15) _____

        3. (15) _____

        4. (15) _____

        5. (15) _____

        6. (15) _____

        7. (15) _____

        TOTAL (100)

Compute dy/dx for each function $y = f(x)$ below, but do NOT simplify. Write your answers clearly: use parentheses or brackets to separate factors in a product and place terms clearly in numerators or denominators of fractions.

(1) $2x^5 - 4x^{5/3} + \dfrac{3}{\sqrt{x}}$

(2) $\sin\left(\dfrac{1}{x^2}\right)$

(3) $\dfrac{1}{\sqrt{x^2 + 3}}$

(4) $x^3\, e^{x^2}$

(5) $\cos(e^{3x} + 1)$

(6) $e^{5x}\, \sqrt{x^2 + 3}$

(7) $\dfrac{\tan x}{5 + x^3}$