

Section 003 of Calculus Lab 2,
Quiz of January 28, 2003
10:00-10:15 a.m.

Name (clearly printed): _____

ID #: _____

1. Carefully print MATHEMATICA input commands (one or two in number) for the evaluation of

$$\lim_{x \rightarrow 0} \frac{e^{(x^5)} + e^{(x^7)} - 2 - x^5 - x^7}{x^{10}}.$$

(In particular, since palettes are not available, write x^5 for x^5 etc.)

2. For the function $f(x)$ defined by

$$f(x) = \frac{x^{17} e^x \sin x}{x^2 + 1}, \quad \text{for any real number } x,$$

(a) print a suitable MATHEMATICA Input statement whose evaluation defines this function for the MATHEMATICA kernel;

(b) carefully print a MATHEMATICA Input statement for the direct evaluation of

$$\lim_{h \rightarrow 0} \frac{f(a+h) - f(a)}{h};$$

(c) carefully print a MATHEMATICA Input statement whose evaluation yields the seventeenth derivative $f^{(17)}(x)$ of $f(x)$.

(End of Quiz)