Warm-up Problems - March 29, 2006

Extra Credit?
(If my signature is here write down your name turn it in for extra credit. No signature? Arrive earlier!)

1. Find the Taylor series for the functions below

   (a) $f(x) = \dfrac{1}{1+x^4}$ at $x = 0$

   (b) $f(x) = \dfrac{x}{1+x^4}$ at $x = 0$

Lecture Problems

2. Using Problem 1a, approximate the integral below to within .00001

   $$\int_0^{0.5} \frac{1}{1+x^4}\, dx$$

   How many terms of the series do you need?

3. Using Problem 1b, approximate the integral below to within .00001

   $$\int_0^{0.5} \frac{x}{1+x^4}\, dx$$

   How many terms of the series do you need?