Warm-up Problems - March 24, 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 polynomials of degree 4 for each of the functions at the point requested.

   (a) $f(x) = \frac{1}{5-x}$ at $x = 2$.

   (b) $f(x) = \frac{1}{5-x}$ at $x = -2$.

   (c) $f(x) = \sqrt{1-x}$ at $x = 0$.

   (d) $f(x) = \sqrt{1-x}$ at $x = -3$.

Lecture Problems

2. Find the general form for the Taylor series for Problem 1.
   (You will probably need another sheet of paper!)

3. Find the Taylor series for the functions below.

   (a)

   $$\frac{1}{1+x} =$$

   (b)

   $$\frac{1}{1+x^3} =$$

   (c)

   $$\frac{x^2}{1+x^3} =$$

   (d)

   $$x(e^x - 1) =$$