Name:_____   Score:_____

Instructions: You must show supporting work to receive full and partial credits. No text book, notes, formula sheets allowed.

1(4pts) Find the Taylor polynomials of degree 0,1,2,3 for the function $f(x) = \sqrt{x}$ at $x = 4$.

2(3pts) Find a polynomial to approximate the function $F(x) = \int_0^x t^2 \cos t^2 \, dt$ in the interval $[0, 1]$ so that error in magnitude is no greater than 10^{-3}.

3(3pts) For approximately what values of x can you replace $\sin x$ by $x - x^3/6$ with an error of magnitude no greater that 10^{-4}? Give reasons for your answer.

(... The End)