Math 1552, Integral Calculus
Sections 10.8-10.9: Taylor Polynomials

1. Use a Taylor polynomial to estimate the value of $\sqrt{e}$ with an error of at most 0.01. HINT: Choose $a = 0$ and use the fact that $e < 3$.

2. For what values of x can we replace $\cos x$ with $1 - \frac{x^2}{2!} + \frac{x^4}{4!}$ within an error range of no more that 0.001?

3. Find $f^{(7)}(0)$ for the function $f(x) = x\sin(x^2)$.