Quiz 8

Spring 2016

MATH 222-004

Name: _____

For full credit please explain all of your answers. **No calculators** are allowed.

Problem 1. Find the second degree Taylor Polynomial $T_2\{\cos(2x)\}$ and bound the error $|\cos(2x) - T_2\{\cos(2x)\}| = |R_2\{\cos(2x)\}|$ for $|x| < 1$.

Problem 2. Now find the Taylor series $T_\infty \cos(2x)$ by substituting, adding, multiplying or applying long division and/or differentiating the known Taylor series: $\cos(x) = \sum_{n=0}^{\infty} \frac{(-1)^n}{(2n)!} x^{2n}$. (Memorize/write this down for the exam).