Homework 0 – Due Friday, January 12

Homework is due at the beginning of class. You may work in groups of up to 5 students, and submit a single copy of the homework. Please be neat.

1. Find all closed intervals of length 1 in which the function has a unique zero.
2. Consider the function  Find an interval of length 1 in which has a zero. Prove that has ***exactly*** 1 zero in this interval.
3. Find the sixth degree Taylor polynomial for each of the following functions expanded about the indicated point.
4. 
5. 
6. 
7. 
8. Find the fifth degree Taylor polynomial for the function expanded about the point  Use this polynomial to approximate  Use the remainder  to find a bound for the error of this approximation. Finally, calculate the absolute and relative errors of this approximation.