

MA113 Homework #10
Due Friday, October 26, 2001

1. Exercises 2.10, #4, 14, 24, 25, 31.
2. Exercises 3.1, #8, 16, 28, 34, 36, 38, 46, 47, 48, 52, 64, 68.
3. Exercises 3.2, #2, 8, 18, 19, 23, 26, 31, 34.
4. Suppose you have a function $f(x)$ such that $f(0) = 1$ and also $f^{(n)}(0) = 1$ (the n th derivative at $x = 0$ equals 1) for all positive integers n .
 - (a) What is the best linear approximation at the point $(0, 1)$?
 - (b) What is the best quadratic approximation at the point $(0, 1)$?
 - (c) What is the best approximation by a third degree polynomial at the point $(0, 1)$?
 - (d) What is the best approximation by a fourth degree polynomial at the point $(0, 1)$?
 - (e) What is the best approximation by an n th degree polynomial at the point $(0, 1)$?