

Math 166: Honors Calculus II

Name: _____

Quiz 5 *Feb. 25, 1999*

1. a) State Taylor's formula with remainder (explain all symbols used).

b) Explain the Lagrange form of the remainder in Taylor's Formula.

2. a) Prove that $T_{2n+1}(\arctan(x)) = \sum_{k=0}^n \frac{(-1)^k}{2k+1} x^{2k+1}$.

b) Find a positive integer n such that $T_{2n+1}(\arctan(x))$ approximates $\arctan(x)$ on the interval $[-1, 1]$ with an error no greater than 10^{-5} .