

**Math 166: Honors Calculus II**  
**Quiz 5** Feb. 22, 1996

Name: \_\_\_\_\_

1. Use an appropriate substitution to transform the integral

$$\int \frac{1}{\cos^2(\theta) + \sin(\theta) + 1} d\theta$$

into an integral of a rational function. (Do not evaluate the integral.)

2. a) Define the Taylor polynomial  $T_n(f; a)$

b) State the following properties of  $T_n(f)$ : the Linearity Property, the Differentiation Property, the Integration Property, and the Substitution Property.

c) Calculate  $T_{3n} \left( \frac{1}{8 + x^3} \right)$ .