

Math 166: Honors Calculus II

Name: _____

Quiz 4 *Feb. 16, 1995*

1. a) Give the general form of the partial fraction decomposition of

$$\frac{x + d}{(x - a)(x^2 + b)^2(x + c)^3} \quad (b > 0)$$

(Do not solve for the constants).

- b) Integrate $\int \frac{1}{x(x^2 + 1)(x - 1)} dx$.

2. a) Use an appropriate substitution to transform the integral

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

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

b) Evaluate $\int \frac{x}{\sqrt{x^2 + 2x + 5}} dx$.