

January 31, 2003

Show all work for credit.

Leave all answers as exact answers unless otherwise stated.

1. Evaluate the following integrals:

(a)
$$\int \frac{\sin^2 x}{\cos^4 x} dx$$

(b)
$$\int_1^4 \sqrt{x} \ln x dx$$

(c)
$$\int_{\pi/4}^{\pi/2} \cot^3 x dx$$

(d)
$$\int \frac{dx}{\sqrt{x^2 - 6x + 13}}$$

(e)
$$\int \sqrt{e^{2x} - 9} dx$$