

MATH 241, Section 2101

Quiz 24

November 6, 2002

Name: _____

(3 pts) Let R be the region bounded by the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$. Find a transformation $x = g_1(u, v), y = g_2(u, v)$ that changes the region R into a rectangle with sides of length 1 and 2π .

(1 pt) What is the Jacobian factor for the transformation above.

(1 pt) Evaluate the integral $\iint_R 1 dx dy$ using the change of variables you found above.