MATH 201 QUIZ 4

SECTION:

ID:

NAME:

1. Let $f(x, y) = x^2 + y^2 - xy + 2x + 2y$. Find all cricical point(s) of f. Determine whether the points are local maxima, local minima or saddles.

2. Find the maximum volume of the can of cylindrical shape with lids when the surface area is 24π.

3. Let $R = [0, \pi] \times [0, 2\pi/3]$. Use the mid-point rule to appoximate

$$\iint_R (\sin^2 x + \cos^2 y)\, dA$$

when $n = m = 2$. (That is, approximate the integral by the Riemann sum S_{22} with the sample point located at the center of each subrectangle.)

4. Compute the following iterated integral.

$$\int_0^1 \int_{\sqrt{x}}^1 e^{y^3}\, dy\, dx.$$