Student ID: 201051040

Math 201
Fall 2014, Term 141

Quiz 5 Section 14
Version A

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Instructions: Show Your Work!

1. (4 pts) Find the absolute maximum and minimum values of f on the region R.

$$f(x, y) = x^2 + xy + y^2 - 3x + 3y$$

R: The triangular region cut from the first quadrant by the line $x + y = 4$.

2. (3 pts) Find the volume of solid in the first octant bounded by the coordinate planes, the plane $x = 3$, and the parabolic cylinder $z = 4 - y^2$.

3. (3 pts) Evaluate the improper integral

$$\int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \frac{2}{(x^2+1)(y^2+1)} dxdy.$$