Student ID: 201051040

Math 201
Fall 2014, Term 141

Quiz 6 Section 14
Version A

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Instructions: Show Your Work!

1. (4 pts) Sketch the region bounded by the parabolas $x = y^2$ and $x = 2y - y^2$. Then evaluate the area of the region as an iterated double integral and evaluate the integral.

2. (3 pts) Set up (BUT DO NOT EVALUATE) a double integral in polar coordinates giving volume of the solid lying below the sphere $x^2 + y^2 + z^2 = 1$ and above the cone $z = \sqrt{x^2 + y^2}$.

3. (3 pts) Change the integral into cylindrical coordinates (DO NOT EVALUATE)

$$\int_0^2 \int_0^{\sqrt{4-y^2}} \int_{x^2+y^2}^{\sqrt{x^2+y^2}} xyz\,dz\,dx\,dy.$$