

MATH 201 QUIZ 5

SECTION:

ID:

NAME:

1. Find the volume of the region enclosed by the cylinder $y = x^2$ and the planes $z = 0$ and $y + z = 1$.
2. Let E be the region enclosed by the cone $z = \sqrt{x^2 + y^2}$ and the paraboloid $z = x^2 + y^2$.
 - (1) Sketch E and express E with both the cylindrical coordinates and the spherical coordinates.
 - (2) Express $\iiint_E z \, dV$ as an iterated integral in spherical coordinate system.
 - (3) Use the cylindrical coordinates to compute $\iiint_E z \, dV$.