King Fahd University of Petroleum and Minerals

MATH 201 Section 13 QUIZ #3 Term 131 *Dr. A. Khalfallah*

Name:	ID:

Q1. Evaluate the iterated integral

$$\int_0^4 \int_{\sqrt{x}}^2 \frac{1}{y^3+1}\, dydx$$

Q2 Integrate the function $f(x, y, z) = 2xy$ over the solid E that lies under the plane $z = 1 + x + y$ and above the region in the xy-plane bounded by the curves $y = \sqrt{x}$, y = 0 and x = 1.

Q3 Evaluate $\iiint_E (x^2 + y^2)dV$ where E is the region bounded above by the sphere $x^2 + y^2 + z^2 = 1$ and below by the cone $z = \frac{1}{\sqrt{3}}\sqrt{x^2 + y^2}$

Q4 Find the volume, in the first octant, of the solid inside both the hemisphere $z = \sqrt{16 - x^2 - y^2}$ and the cylinder $x^2 + y^2 - 4x = 0$.