MATH 251: Quiz 6

November 19, 2015

Name: _____ Sec: _____

1. Integrate the function $f(x, y, z) = x^2 + 3yz$ over the rectangular prism $0 \leq x \leq 3$, $1 \leq y \leq 4$, $1 \leq z \leq 3$.

2. Find the volume of the region inside the cylinder $x^2 + y^2 = 9$ between the xy-plane and the plane $x + y + z = 5$. [Use cylindrical coordinates]

3. Integrate the function $g(x, y, z) = z$ over the upper hemisphere $x^2 + y^2 + z^2 = 16$, $z \geq 0$. [Use spherical coordinates]