MA 261 Quiz 8
March 18, 2019

If you do not know how to do any one of these problems, circle **"(E) I don't know"** as your answer choice. You will receive **two points** for doing that. **Each problem** is worth **five points**. You get **two points** for writing your **full name** and **three points** for writing your **section number** and, just today, **five points** on top of that for writing both your name and section number.

Problem 8.1. Evaluate the triple integral $\iiint_E 8xyz\,dV$, where

$$E = \{2 \le x \le 3, 1 \le y \le 2, 0 \le z \le 1\}.$$

(A) 2
(B) 4
(C) 10
(D) 15
(E) I don't know how to do this

Problem 8.2. Let E be the region bounded by two surfaces whose equations in cylindrical coordinates are $z = 10 - r^2$ and $z = 2 + r^2$. Find the volume of E.
Hint: Sketch the region.
(A) 8π
(B) 12π
(C) 16π
(D) 18π
(E) I don't know how to do this

Problem 8.3. Rewrite the iterated integral

$$\int_0^1 \int_0^{1-x} \int_0^{2-2y} f(x,y,z)\,dzdydx$$

by changing the order of integration to $dxdydz$.
(A) $\int_0^2 \int_0^{1-z/2} \int_0^{y-1} f(x,y,z)\,dxdydz$
(B) $\int_0^2 \int_0^{1-x} \int_0^{1-y} f(x,y,z)\,dxdydz$
(C) $\int_0^2 \int_0^{2-2x} \int_0^{1-y} f(x,y,z)\,dxdydz$
(D) $\int_0^2 \int_0^{1-z/2} \int_0^{1-y} f(x,y,z)\,dxdydz$
(E) I don't know how to do this