

Math 2513 – Summer 2024

Quiz 5

Name:

Student ID:

1 – (3) Evaluate the triple integral

$$\iiint e^{xz} + 3y \, dV$$

Where the domain is $\{(x,y,z) \mid 0 \leq y \leq 1, y \leq x \leq 1, 0 \leq z \leq xy\}$.

2 – (2) What is the volume of $\frac{1}{4}$ of a sphere, calculated by using a triple integral?

3 – (2) Verify that Clairaut's Theorem holds for all three possibilities for the following equations:

a) xye^{xz}

b) $\sin(xy) + \cos(xz)$