

“QUIZ” for Lecture 14

NAME: (print!) LiuyangShan

Section: 24

E-MAIL SCANNED .pdf OF COMPLETED QUIZ to DrZcalc3@gmail.com (Attachment: q14FirstLast.pdf) ASAP BUT NO LATER THAN Oct. 26, 8:00pm

1. Evaluate the iterated integral

$$\int_0^1 \int_x^3 \int_0^y x^2 y z \, dz \, dy \, dx \quad .$$

$$\text{inner integral: } \int_0^y x^2 y z \, dz = \frac{x^2 y^3}{2}$$

$$\text{middle integral: } \int_x^3 \frac{x^2 y^3}{2} \, dy = \frac{81x^2 - x^6}{8}$$

$$\text{outer integral: } \int_0^1 \frac{81x^2 - x^6}{8} \, dx = \frac{47}{17}$$

2. Evaluate the triple integral

$$\iiint_E yz \ln(x^5) \, dV \quad ,$$

where

$$E = \{(x, y, z) \mid 0 \leq x \leq 1, 0 \leq y \leq x, 2x \leq z \leq 3x\} \quad .$$

$$\int_0^1 \int_0^x \int_{2x}^{3x} yz \ln(x^5) \, dz \, dy \, dx = \ln(x^5) * \frac{x^5}{4} - \frac{x^5}{4,0} \leq x \leq 1 = -\frac{1}{4}$$

在此处键入公式。