

MTH241 Fall 2024: Quiz 08

Name:

UID:

Closed book, no calculator, show your work clearly.

1. (5pt) Evaluate the integral

$$\int_0^1 \int_0^x \int_0^{x+y} y dz dy dx.$$

Identify the corresponding solid region D by writing $F_1(x, y)$, $F_2(x, y)$ and R . (Grading: 2pt working; 1pt for evaluation; 2pt for solid region)

2. (5pt) Let D be the solid region bounded above by the plane $y + z = 4$, below by the xy -plane, and on the sides by the cylinder $x^2 + y^2 = 16$. Evaluate $\iiint_D \sqrt{x^2 + y^2} dV$. (Grading: 2pt working; 3pt for the integral)

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