

Problem 1

Evaluate $\int_0^1 \int_0^1 \int_0^1 8xyz \, dz \, dy \, dx$

Problem 2

Evaluate $\int_1^{e^2} \int_1^{e^2} \int_1^{e^2} \frac{1}{xyz} \, dz \, dy \, dx$

Problem 3

The integral $\int_0^1 \int_{-1}^0 \int_0^{y^2} dz \, dy \, dx$ gives the volume of a solid figure in \mathbb{R}^3 . Draw this solid, and use it to rewrite the integral as equivalent triple integral in the order $dydzdx$ and $dx dz dy$. Find the volume of the solid.

Problem 4

The integral $\int_0^1 \int_{\sqrt{x}}^1 \int_0^{1-y} dz \, dy \, dx$ gives the volume of a solid figure in \mathbb{R}^3 . Draw this solid, and use it to rewrite the integral as equivalent triple integral in the order $dx dy dz$ and $dy dz dx$. Find the volume of the solid.