

Name:

1. Evaluate $\iiint_E z dV$ where E is enclosed by the paraboloid $z = x^2 + y^2$ and the plane $z = 4$.

2. Set up but do not evaluate $\iiint_E x dV$, where E is enclosed by the planes $z = 0$ and $z = x + y + 5$ and by the cylinders $x^2 + y^2 = 4$ and $x^2 + y^2 = 9$.

3. Set up but do not evaluate an expression for the volume of the solid that lies within both the cylinder $x^2 + y^2 = 1$ and the sphere $x^2 + y^2 + z^2 = 4$.

4. Set up but do not evaluate $\int \int \int_E x^2 dV$ where E is the solid that lies within the cylinder $x^2 + y^2 = 1$, above the plane $z = 0$ and below the cone $z^2 = 4x^2 + 4y^2$.