Problem1

Evaluate the triple integral using only geometric interpretation and symmetry.

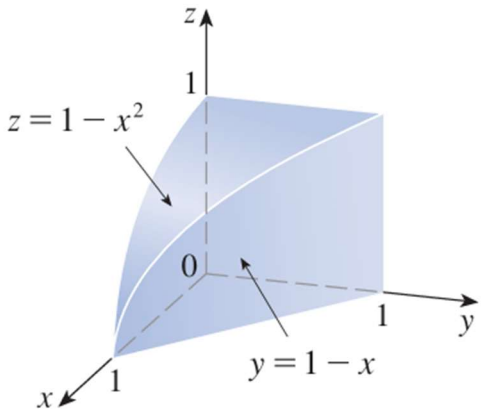
$\iiint_B (z^3 + \sin y + 3)\, dV$, where B is the unit ball
$x^2 + y^2 + z^2 \leq 1$

Problem2

The figure shows the region of integration for the integral

$$\int_0^1 \int_0^{1-x^2} \int_0^{1-x} f(x, y, z)\, dy\, dz\, dx$$

Rewrite this integral as an equivalent iterated integral in the five other orders.



Problem3

$\iiint_E z\, dV$, where E is bounded by the cylinder $y^2 + z^2 = 9$ and the planes $x = 0$, $y = 3x$, and $z = 0$ in the first octant