5. $z = 9 - x^2$, $y = 9 - x^2$, 1ST OCTANT

x's

$y = 9 - x^2$

$0 = 9 - x^2$

$x^2 = 9$

$x = \pm\sqrt{9}$

$x = \pm 3$

$$V = \int_{x=0}^{x=3} \int_{y=0}^{y=9-x^2} \int_{z=0}^{z=9-x^2} dz\, dy\, dx$$

$$= \int_{x=0}^{x=3} \int_{y=0}^{y=9-x^2} \left[z \right]_{z=0}^{z=9-x^2} dy\, dx$$

$$= \int_{x=0}^{x=3} \int_{y=0}^{y=9-x^2} (9 - x^2 - 0)\, dy\, dx$$

$$= \int_{x=0}^{x=3} \left[(9 - x^2) y \right]_{y=0}^{y=9-x^2} dx$$

$$= \int_{x=0}^{x=3} (9 - x^2)\left[9 - x^2 - 0 \right] dx$$

$$= \int_{x=0}^{x=3} (81 - 9x^2 - 9x^2 + x^4)\, dx$$

$$= \int_{x=0}^{x=3} (81 - 18x^2 + x^4)\, dx$$

$$= \left[81x - 18 \cdot \frac{1}{3}x^3 + \frac{1}{5}x^5 \right]_{x=0}^{x=3}$$

$$= 81(3) - 6(3)^3 + \frac{1}{5}(3)^5 - \left(81(0) - 6(0)^3 + \frac{1}{5}(0)^5 \right)$$

$$= 243 - 162 + \frac{243}{5}$$

$$= \boxed{\frac{648}{5}}$$