

The region of integration is the region above the plane $z = 0$ and below the paraboloid $z = 9 - x^2 - y^2$. Also, we have $-3 \leq x \leq 3$ with $0 \leq y \leq \sqrt{9 - x^2}$ which describes the upper half of a circle of radius 3 in the xy -plane centered at $(0, 0)$. Thus,

$$\begin{aligned} \int_{-3}^3 \int_0^{\sqrt{9-x^2}} \int_0^{9-x^2-y^2} \sqrt{x^2+y^2} dz dy dx &= \int_0^\pi \int_0^3 \int_0^{9-r^2} \sqrt{r^2} r dz dr d\theta = \int_0^\pi \int_0^3 \int_0^{9-r^2} r^2 dz dr d\theta \\ &= \int_0^\pi \int_0^3 r^2 (9 - r^2) dr d\theta = \int_0^\pi d\theta \int_0^3 (9r^2 - r^4) dr \\ &= [\theta]_0^\pi [3r^3 - \frac{1}{5}r^5]_0^3 = \pi (81 - \frac{243}{5}) = \frac{162}{5} \pi \end{aligned}$$