

$$\begin{aligned}\iint_R \sqrt{9 - x^2 - y^2} \, dA &= \int_{-\pi/2}^{\pi/2} \int_0^3 \sqrt{9 - r^2} \, r \, dr \, d\theta = \left(\int_{-\pi/2}^{\pi/2} d\theta \right) \left(\int_0^3 r \sqrt{9 - r^2} \, dr \right) \\ &= [\theta]_{-\pi/2}^{\pi/2} \left[-\frac{1}{2} \cdot \frac{2}{3} (9 - r^2)^{3/2} \right]_0^3 = \left(\frac{\pi}{2} + \frac{\pi}{2} \right) \left(-\frac{1}{3} (0 - 9^{3/2}) \right) = 9\pi\end{aligned}$$