

HomeWork1

$$\begin{aligned} \int_{-1}^1 \int_{-\sqrt{1-y^2}}^{\sqrt{1-y^2}} (\sqrt{1-x^2-y^2} + 5) dx dy &= \int_0^{2\pi} \int_0^1 (\sqrt{1-r^2} + 5) r dr d\theta \\ &= \int_0^{2\pi} \left(\frac{5r^2}{2} - \frac{2(1-r^2)^{1.5}}{3} \right) \Big|_0^1 d\theta = \int_0^{2\pi} \frac{17}{6} d\theta = \frac{17\pi}{3} \end{aligned}$$

