Multiple Integration
Iteration of Double Integrals

Question
Find the volume of the given solid
Below $z = 1 - x^2$ and over the region $0 \leq y \leq 1$, $0 \leq x \leq y$.
Answer

$$\begin{aligned} V &= \int_0^1 dy \int_0^y (1 - x^2)\, dx \\ &= \int_0^1 \left(y - \frac{y^3}{3} \right) dy \\ &= \frac{1}{2} - \frac{1}{12} = \frac{5}{12} \text{cu. units} \end{aligned}$$