

$$\begin{aligned} V &= \iint_R (17 + x^2 - y^2) dA = \int_{-4}^4 \int_0^4 (17 + x^2 - y^2) dy dx \\ &= \int_{-4}^4 \left[17y + x^2y - \frac{1}{3}y^3 \right]_{y=0}^{y=4} dx = \int_{-4}^4 \left(4x^2 + \frac{140}{3} \right) dx \\ &= \left[\frac{4}{3}x^3 + \frac{140}{3}x \right]_{-4}^4 = \frac{256}{3} + \frac{560}{3} + \frac{256}{3} + \frac{560}{3} = 544 \end{aligned}$$