The paraboloid $z = 5 - 5x^2 - 5y^2$ intersects the xy -plane in the circle $x^2 + y^2 = 1$, so

$$V = \iint_{x^2+y^2\le 1} \left(5 - 5x^2 - 5y^2\right)\, dA = \iint_{x^2+y^2\le 1} \left[5 - 5\left(x^2 + y^2\right)\right]\, dA = \int_0^{2\pi} \int_0^1 \left(5 - 5r^2\right)\, r\, dr\, d\theta$$

$$= \int_0^{2\pi} d\theta \int_0^1 \left(5r - 5r^3\right) dr = \left[\,\theta\,\right]_0^{2\pi} \left[\tfrac{5}{2}r^2 - \tfrac{5}{4}r^4\right]_0^1 = (2\pi)\left(\tfrac{5}{2} - \tfrac{5}{4}\right) = \tfrac{5}{2}\pi$$