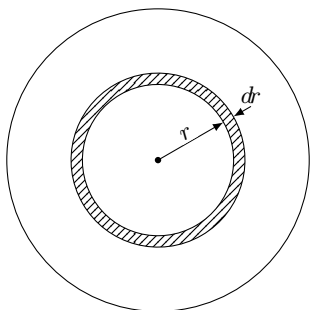
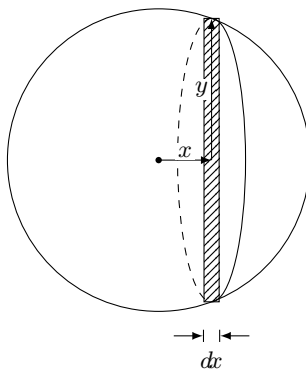


solid sphere: shell method



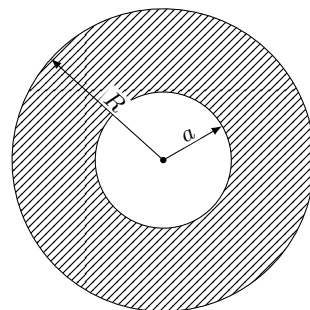
$$dV = 4\pi r^2 dr$$

solid sphere: disk method



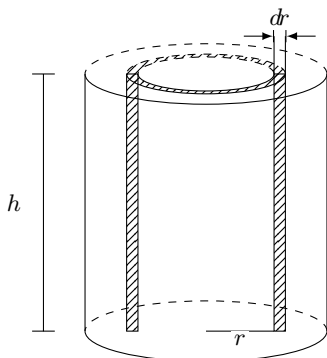
$$dV = \pi y^2 dx$$

hollow sphere



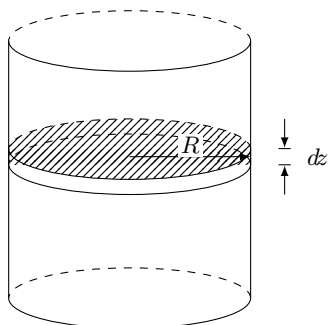
$$V = \frac{4\pi}{3}(R^3 - a^3)$$

cylindrical shell



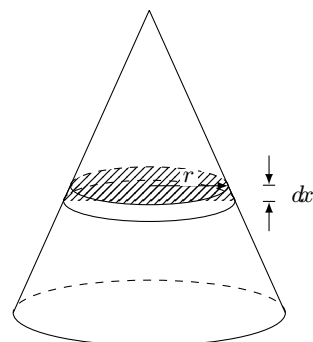
$$dV = 2\pi r h dr$$

cylinder slice



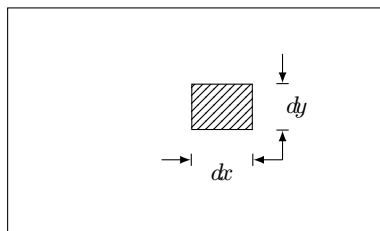
$$dV = \pi R^2 dz$$

cone slice



$$dV = \pi r(x)^2 dx$$

rectangular sheet



$$dA = dx dy$$