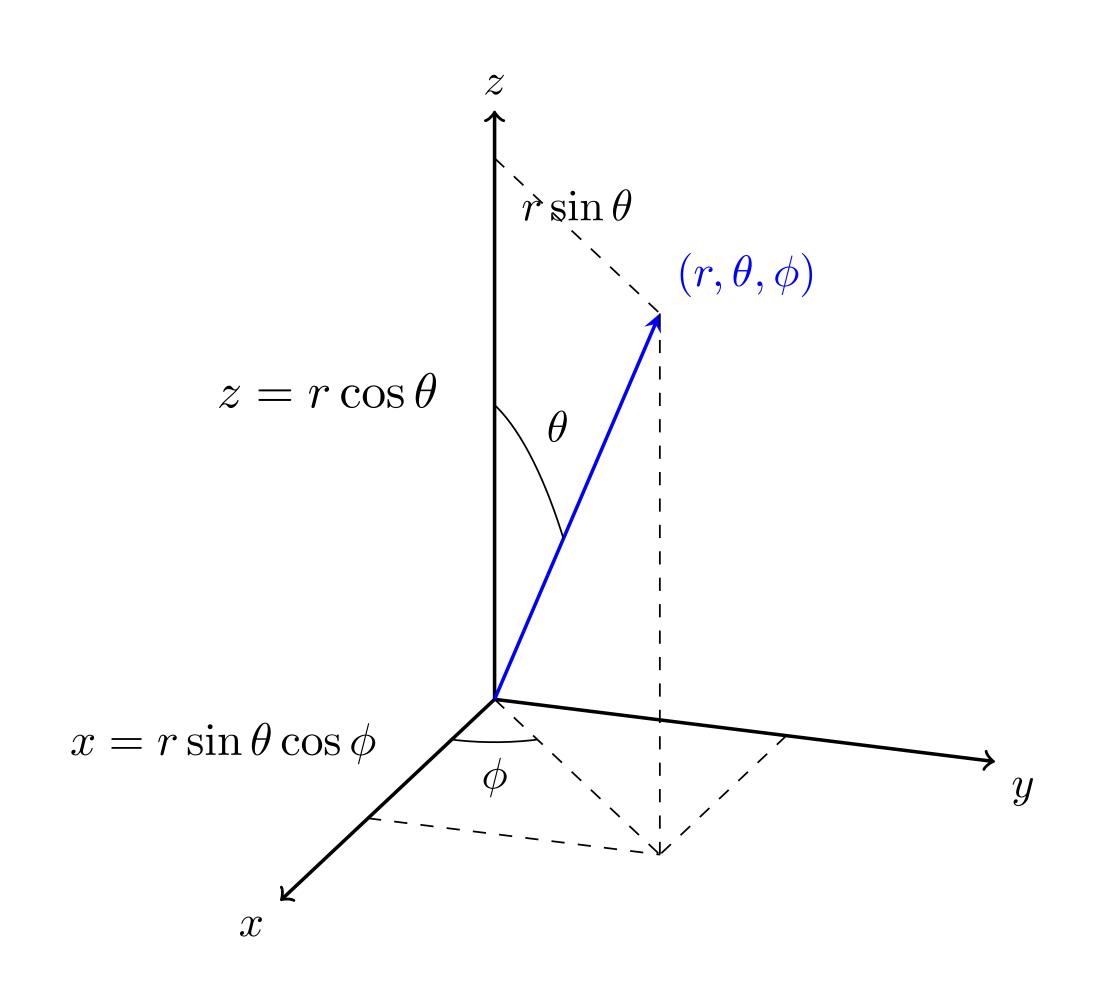
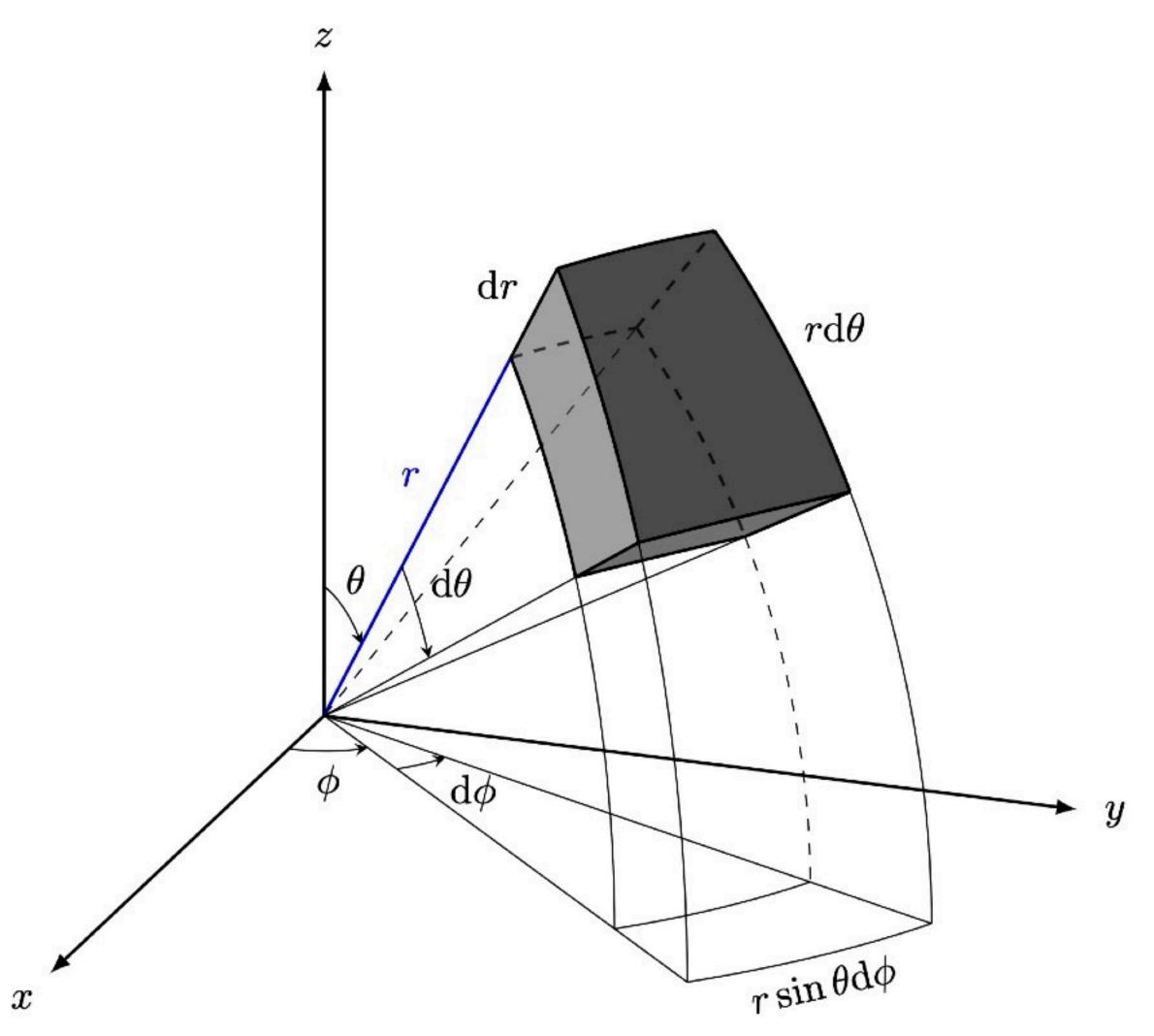
Spherical Coordinates



$$x = r \sin \theta \cos \phi$$
$$y = r \sin \theta \sin \phi$$
$$z = r \cos \theta$$

Spherical Coordinates



Volume and area elements

$$dV = dA dr = (rd\theta) (r \sin \theta d\phi) (dr)$$
$$= r^{2} \sin \theta dr d\theta d\phi$$

$$dA = (rd\theta)(r\sin\theta d\phi)$$
$$= r^2 \sin(\theta) d\theta d\phi$$