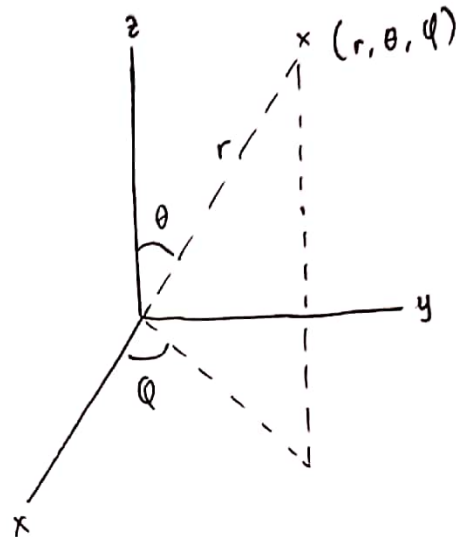
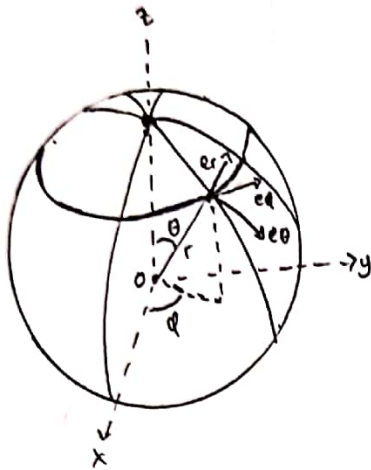


Nama : Latta Merinda

NPM : 20130220036

Prodi : Pendidikan Fisika (B)

➡ Sistem koordinat bola.



ketiga Vektor Satuan saling tegak lurus, $a_r \perp a_\theta \perp a_\phi$

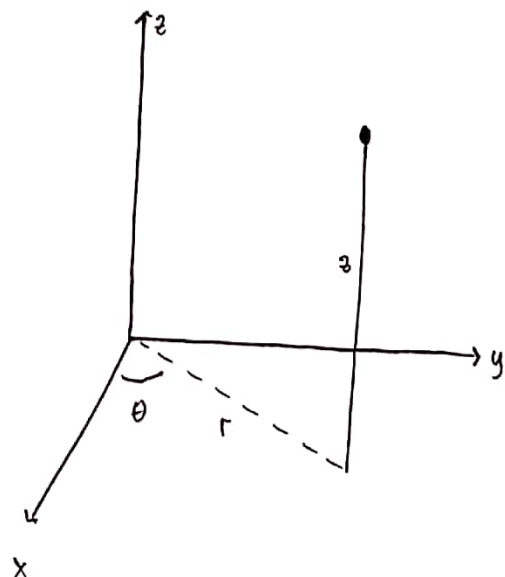
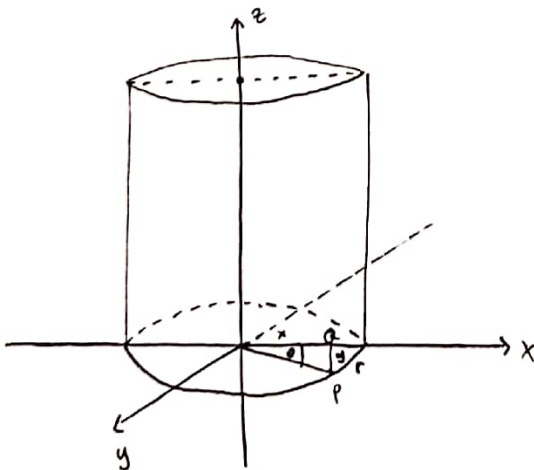
$$x = r \sin \theta \cos \phi \quad ; \quad r = \sqrt{x^2 + y^2 + z^2} \quad r \geq 0$$

$$y = r \sin \theta \sin \phi \quad ; \quad \theta = \cos^{-1} \left(\frac{z}{\sqrt{x^2 + y^2 + z^2}} \right)$$

$$z = r \cos \theta \quad ; \quad \phi = \tan^{-1} \left(\frac{y}{x} \right)$$

$$\text{Volum diferensial (dv)} \quad ; \quad dv = r^2 \sin \theta \, dr \, d\theta \, d\phi$$

➡ Sistem koordinat silinder



$$x = r \cos \varphi$$

$$y = r \sin \varphi$$

$$z = z$$

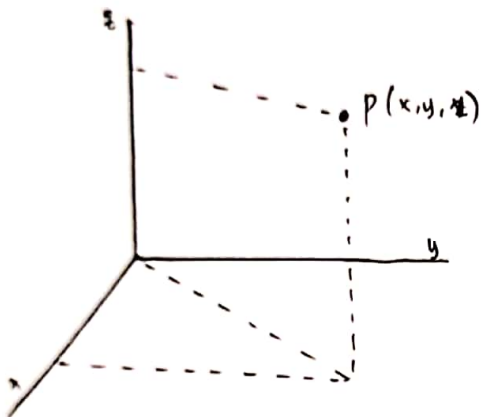
elemen Volume diferensial

$$dV = r dr d\varphi dz$$

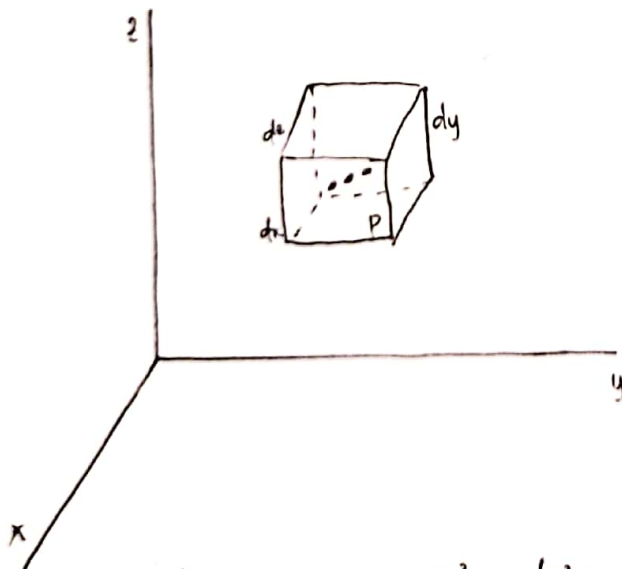
Elemen garis diferensial

$$dL^2 = dr^2 + (r d\varphi)^2 + dz^2$$

⇒ Sistem koordinat kartesian



elemen Volum di titik P : $dV = dx dy dz$



elemen panjang, $dL^2 = dx^2 + dy^2 + dz^2$