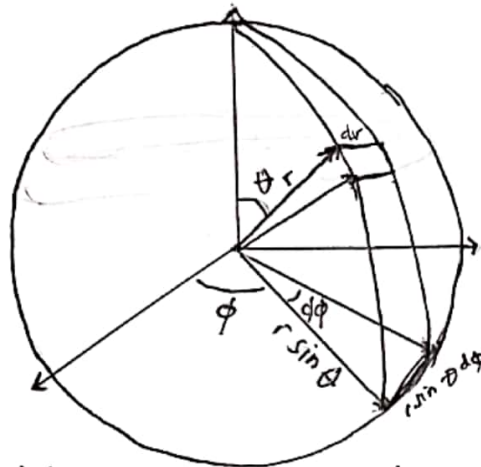


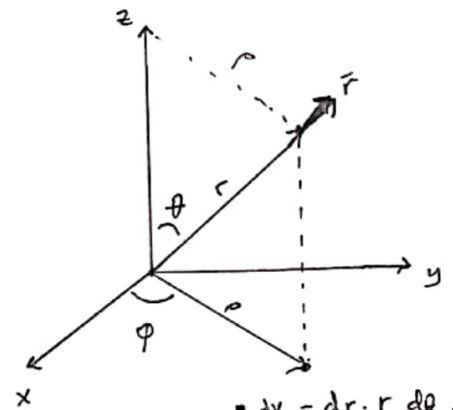
Nama : Umi Nur Aini
NPM : 2013022012

1) Sistem Koordinat Bola.



$$\begin{aligned} \sin \phi &= \frac{y}{r}, & y &= r \sin \theta \\ x &= r \cos \phi \\ z &= r \cos \theta \\ \rho &= r \sin \theta \end{aligned}$$

$$\begin{aligned} \sin \theta &= \frac{y'}{r} \\ \theta &= \arcsin \left(\frac{y'}{r} \right) \\ x' &= r \sin \theta \end{aligned}$$



$$\begin{aligned} dv &= dr \cdot r d\theta \cdot r \sin \theta d\phi \\ \sin \theta &= \frac{y'}{r} \\ y' &= r \sin \theta \\ da &= r d\theta \cdot r \sin \theta d\phi \\ d\mathbf{r} &= dr^2 + r^2 d\theta^2 + r^2 \sin^2 \theta d\phi^2 \end{aligned}$$