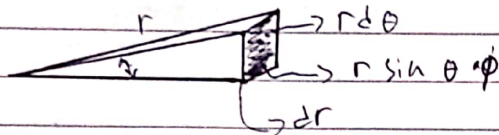
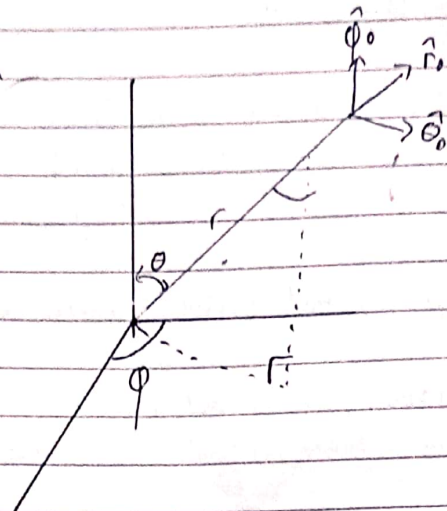
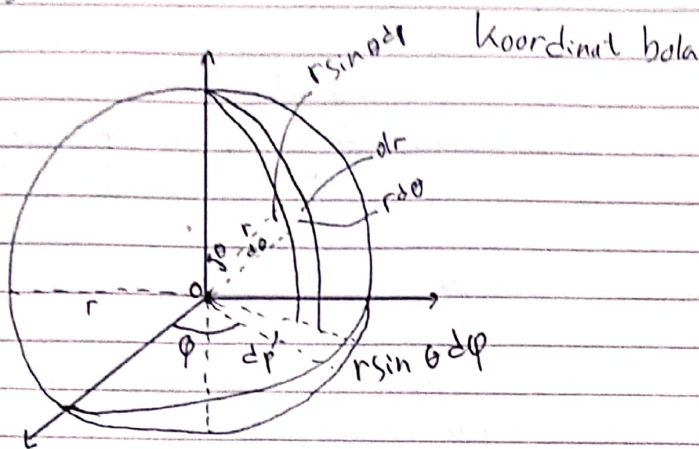


Nama : Erlangga ade putra

Npm : 2013022064

Kelas : R



$$ds = \rho \times l$$

$$= r \sin \theta \cdot r d\theta$$

$$= r^2 \sin \theta d\theta$$

$$d\vec{r} = \hat{r} dr + \hat{\theta} r d\theta + \hat{\phi} r \sin \theta d\phi$$

$$d\vec{r} = \hat{r} dr + \hat{\theta} r d\theta + \hat{\phi} r \sin \theta d\phi$$

$$dt_0 = \rho \times l \times t$$

$$= r \sin \theta \cdot r d\theta \cdot r d\phi$$

$$= r^3 \sin \theta d\theta d\phi$$

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

$$y = r \sin \theta \sin \phi$$

$$z = r \cos \theta$$

$$\text{gradiennya} : \nabla t = \hat{r}_0 \frac{\partial t}{\partial r} + \hat{\theta}_0 \left(\frac{1}{r} \frac{\partial t}{\partial \theta} \right) + \hat{\phi}_0 \left(\frac{1}{r \sin \theta} \frac{\partial t}{\partial \phi} \right)$$

$$\text{divergensinya} : \nabla \cdot \vec{V} = \frac{1}{r^2} \left(\frac{\partial}{\partial r} r^2 V_r \right) + \frac{1}{r \sin \theta} \frac{\partial}{\partial \theta} (V_\theta \sin \theta) + \frac{1}{r \sin \theta} \frac{\partial V_\phi}{\partial \phi}$$