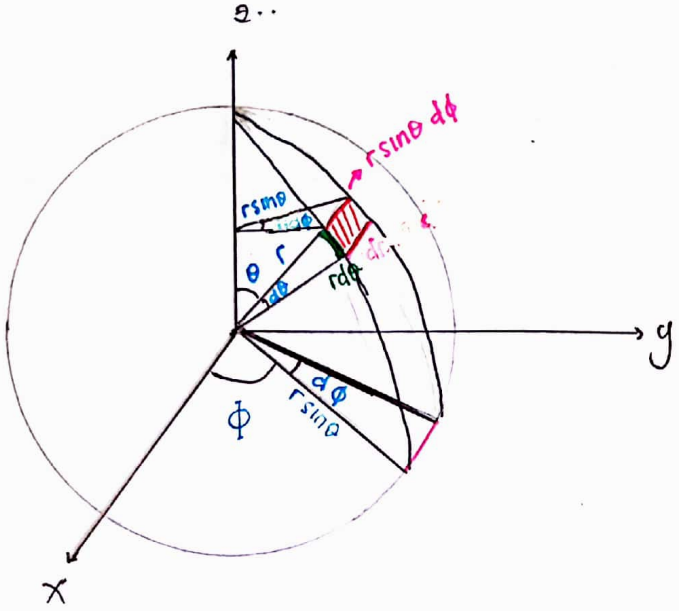
Nama : Winda Dwi Safitri
NPM : 2013022018.

1). Koordinat Bola.




a) $x = r \sin\Phi \cdot \cos\Phi$

$y = r \sin\Phi \sin\Phi$

$z = r \cos\theta$.

$d\vec{s} = p \times \ell$.

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

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

$dG = p \times \ell \times t$.

$= r \sin\theta \, d\phi r d\theta \, dr$

$= r^2 \sin\theta \, d\theta \, dr d\phi$

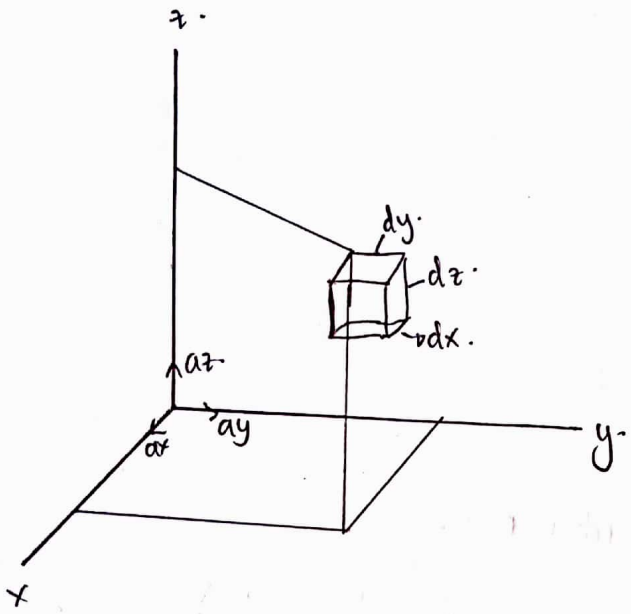
$d\vec{r} = \phi . r\sin\theta \, d\phi + \theta r d\theta + \vec{r} dr$.

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

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

# Differensial

## Koordinat Kartesian.




differensial perpindahan

$$dl = dx\,a_x + dy\,a_y + dz\,a_z$$

differensial luas normal

$$ds = dy\,dz\,a_x$$
$$dx\,dz\,a_y$$
$$dz\,dy\,a_z$$

$$dv = dx\,dy\,dz$$