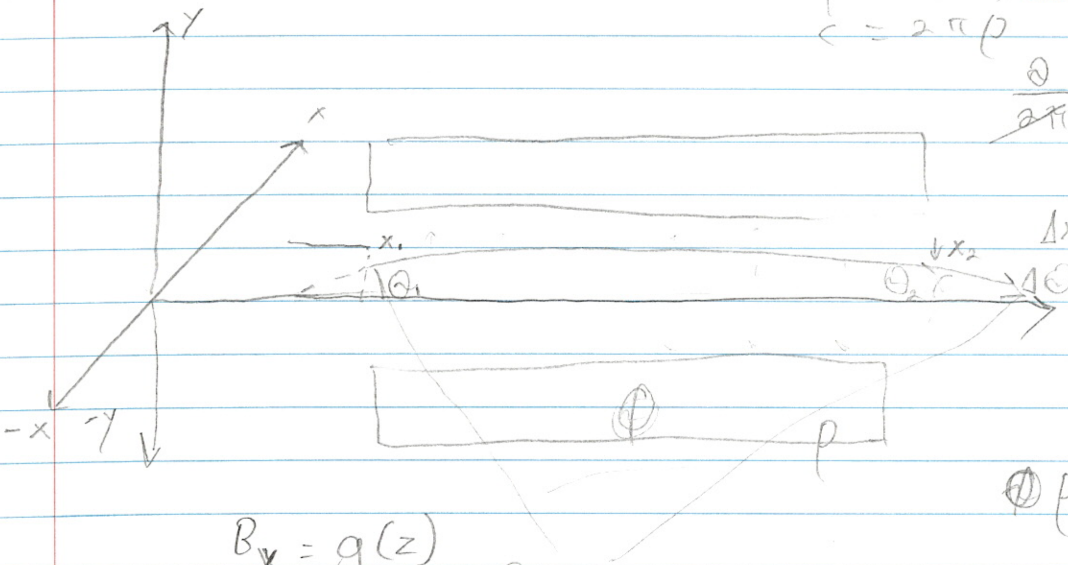
2.6 a

ρ = radius

$C = 2\pi\rho$

$\frac{\theta}{\cancel{2\pi}} \cdot \cancel{2\pi}\rho$



$\Delta x = X_1 - X_2$

$\Delta\theta = \theta_1 - \theta_2$

$\phi\rho \Rightarrow$ distance e travers

$B_y = g(z)$

$dV = \frac{dx}{dt}$

$\Delta t = \frac{\Delta x}{\Delta V} = \frac{\phi\rho}{V_z}$

$$\frac{d}{dt}\gamma m c \beta_x = -e\cancel{E} - eV\times B = -e\frac{dz}{dt}g(z)$$

$dz = V_z \cdot dt$

$$\cancel{\frac{d}{dt}}\gamma m c\beta_x = -e\cancel{\frac{d}{dt}}\int_{-\frac{L}{2}}^{L/2} g(z)\,dz$$

$$\gamma m c\beta_x = -e\int_{-L/2}^{L/2} g(z)\,dz$$

$$\gamma m c\beta_x = -e g(z)\int_0^{\phi\rho/V_z} dt$$

$$\gamma m c\beta_x = -e g(z)\left(\phi\rho/V_z\right)$$

$$\gamma m \; V_x = \frac{-e\phi\rho\, g(z)}{V_z}$$

$$V_x = \frac{-e\phi\rho\, g(z)}{\gamma m V_z}$$

$$\int_{x_1}^{x_2} dx = \int_0^{\phi\rho/V_z} \frac{-e\phi\rho g(z)}{\gamma m V_z}\,dt$$

$$\Delta x = \frac{-e g(z)}{\gamma m}\left(\frac{\phi\rho}{V_z}\right)^2$$