

③

$$a) \quad F(r) = G \frac{m\mu}{r^2}$$

$$F'(\phi) =$$

$$\mu(a) = \mu_0 \frac{\frac{4}{3}\pi a^3}{\frac{4}{3}\pi R_0^3} = \mu_0 \frac{a^3}{R_0^3}$$

$$F(a) = G \frac{m \mu_0 \frac{a^3}{R_0^3}}{a^2}$$

$$F(a) = G \frac{m \mu_0 a}{R_0^3} \quad | a \rightarrow \frac{r_0}{\cos(\phi)}$$

$$F(\phi) = G \frac{m \mu_0 r_0}{\cos(\phi) R_0^3}$$

$$F''(\phi) = \sin(\phi) F(\phi)$$

$$F''(\phi) = \tan(\phi) G r_0 \frac{m \mu_0}{R_0^3}$$