



$$\omega_0 = \sqrt{\frac{5g}{7R-2a}} = f = \frac{1}{T} = \frac{1}{\text{period}}$$

I of a sphere

$$I = \frac{2}{5} m a^2$$

$$L = I \omega = \left(\frac{2}{5} m a^2 \right) \frac{A \theta}{4 T}$$