Бекешева Анастасія ФІ-12

$J_A\beta = \sum M_i, \qquad M_T = mgR\phi, \qquad \beta = \ddot{\phi}, \qquad J_A = \frac{3}{2}mR^2$

$\frac{3}{2}mR^2\ddot{\phi} = mgR\phi - 8kR^2\phi, \qquad \frac{3}{2}mR^2\ddot{\phi} + \phi(8kR^2 - mgR) = 0,$

$\ddot{\phi} + \frac{2}{3mR^2}(8kR^2 - mgR)\phi = 0 \Rightarrow \omega = \sqrt{\frac{3mR}{2}(8kR - mg)}, \qquad T = \frac{2\pi}{\omega}$

$$T = \frac{2\pi}{\sqrt{\frac{3mR}{2}(8kR - mg)}}$$