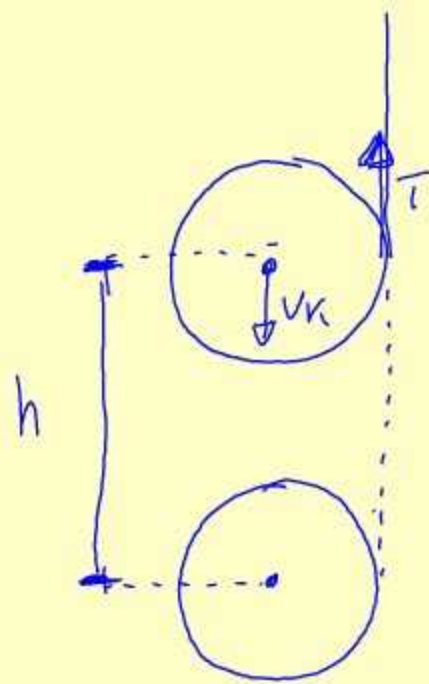


Aok 4.68

$$m = 120g = 0,12 \text{ kg}$$
$$R = 1,5 \text{ cm} = 0,015 \text{ m}$$



a) $\frac{dL}{dt} = ;$ in $\Sigma z = i$

b) $v_k = ;$ $\dot{\sigma} \sigma = v$ $h = 0,3 \text{ m}$

$$\Sigma F = m a_k$$

$$mg - T = m \cdot a_k \quad (1)$$

$$\Sigma z = I \alpha_{\text{rot}}$$
$$TR = \frac{1}{2} m R^2 \alpha_{\text{rot}}$$

$$T = \frac{1}{2} m R \alpha_{\text{rot}}$$

$$T = \frac{1}{2} m a_k \quad (2)$$

$$(1), (2) \Rightarrow mg - \frac{1}{2} m a_k = m a_k$$

$$mg = \frac{3}{2} m a_k$$

$$a_k = \frac{2}{3} g$$

$$a) \frac{dL}{dt} = \Sigma z = I \cdot \alpha_{\text{rot}} = \frac{1}{2} m R^2 \cdot \frac{a_k}{R} = \frac{1}{2} m R \cdot \frac{2}{3} g = \frac{m R \cdot g}{3}$$
$$= \frac{0,12 \cdot 0,015 \cdot 10}{3} = \frac{12 \cdot 10^{-2} \cdot 15 \cdot 10^{-3} \cdot 10}{3} = 60 \cdot 10^{-4} = 6 \cdot 10^{-3} \text{ Kg m}^2/\text{sec}^2$$

$$b) \left. \begin{array}{l} v_k = a_k \cdot t \\ h = \frac{1}{2} a_k \cdot t^2 \Rightarrow t = \sqrt{\frac{2h}{a_k}} \end{array} \right\} \Rightarrow v_k = a_k \cdot \sqrt{\frac{2h}{a_k}} = \sqrt{2h a_k} = \sqrt{2 \cdot 0,3 \cdot \frac{2}{3} \cdot 10}$$

$$v_k = 2 \text{ m/sec}$$