

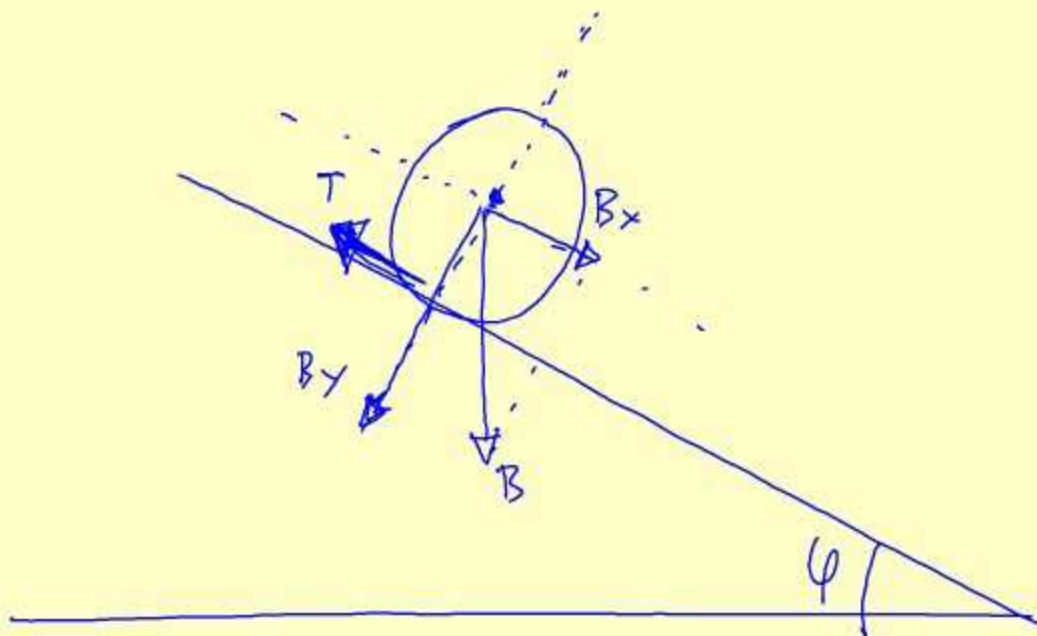
Асн. 4.62

$$\varphi = 30^\circ$$

$$I = \frac{2}{3} m R^2$$

$$g = 10 \text{ м/сек}^2$$

$$a_k = ?$$



$$\bullet \Sigma F = m a_k \Rightarrow B_x - T = m a_k$$

$$\boxed{m g \sin \varphi - T = m a_k} \quad (1)$$

$$\bullet \Sigma z = I \alpha_{\text{пов}} \Rightarrow T R = \frac{2}{5} m R^2 \alpha_{\text{пов}}$$

$$\boxed{T = \frac{2}{5} m a_k} \quad (2)$$

$$(1) \xrightarrow{(2)} m g \sin \varphi - \frac{2}{5} m a_k = m a_k$$

$$m g \sin \varphi = m a_k + \frac{2}{5} m a_k$$

$$\frac{m}{5} g \sin \varphi = \frac{7}{5} m a_k \Rightarrow a_k = \frac{5}{7} g \sin \varphi$$