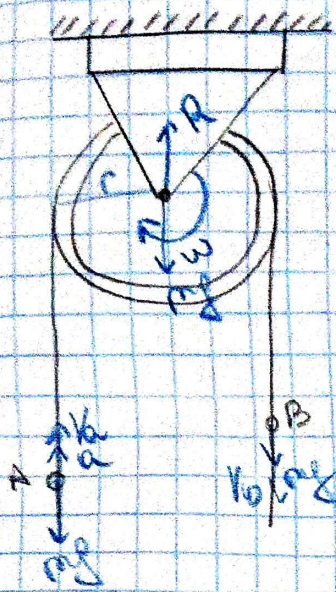


Homework 6.

Task 1



AO: 2 mass, pulley

A, B - rectilinear

Force analysis: $m_A \vec{g}$, $m_B \vec{g}$, $B_p \vec{g}$,

Solution:

$$\text{mass pulley} = \frac{1}{4}$$

when oxygen popuguy $\sum M_i(\vec{F}_i) = 0.$

$$m v_a r + \tau_w + m v_b r = 0$$

$$m v_a r + \frac{m r^2}{4} \cdot \frac{v_b}{r} + m v_b r = 0$$

Conditions:

$$v_a = 0 \quad v_b = v + a$$

$$v_b = 0 \quad v_b = -v$$

$$a_a = -g \quad a_a = -g$$

$$a_b = -g \quad a_b = -g$$

$$m(v_b + a) \cdot r + \frac{m r^2}{4} \cdot \frac{v_b}{r} + m v_b r = 0 \quad | \cdot 4r$$

$$4r^2 m v_b + 4r^2 m a + m r^2 v_b + 4r^2 m v_b = 0$$

$$4r^2 m v_b + 4r^2 m a + m r^2 v_b + 4r^2 m v_b = 0$$

$$8r^2 m v_b + 4r^2 m a + m r^2 v_b = 0$$

$$9r^2 m v_b = -4r^2 m a$$

$$v_b = -\frac{4r^2 m a}{9r^2 m} = -\frac{4a}{9}$$

Answer: $v_b = -\frac{4a}{9}$