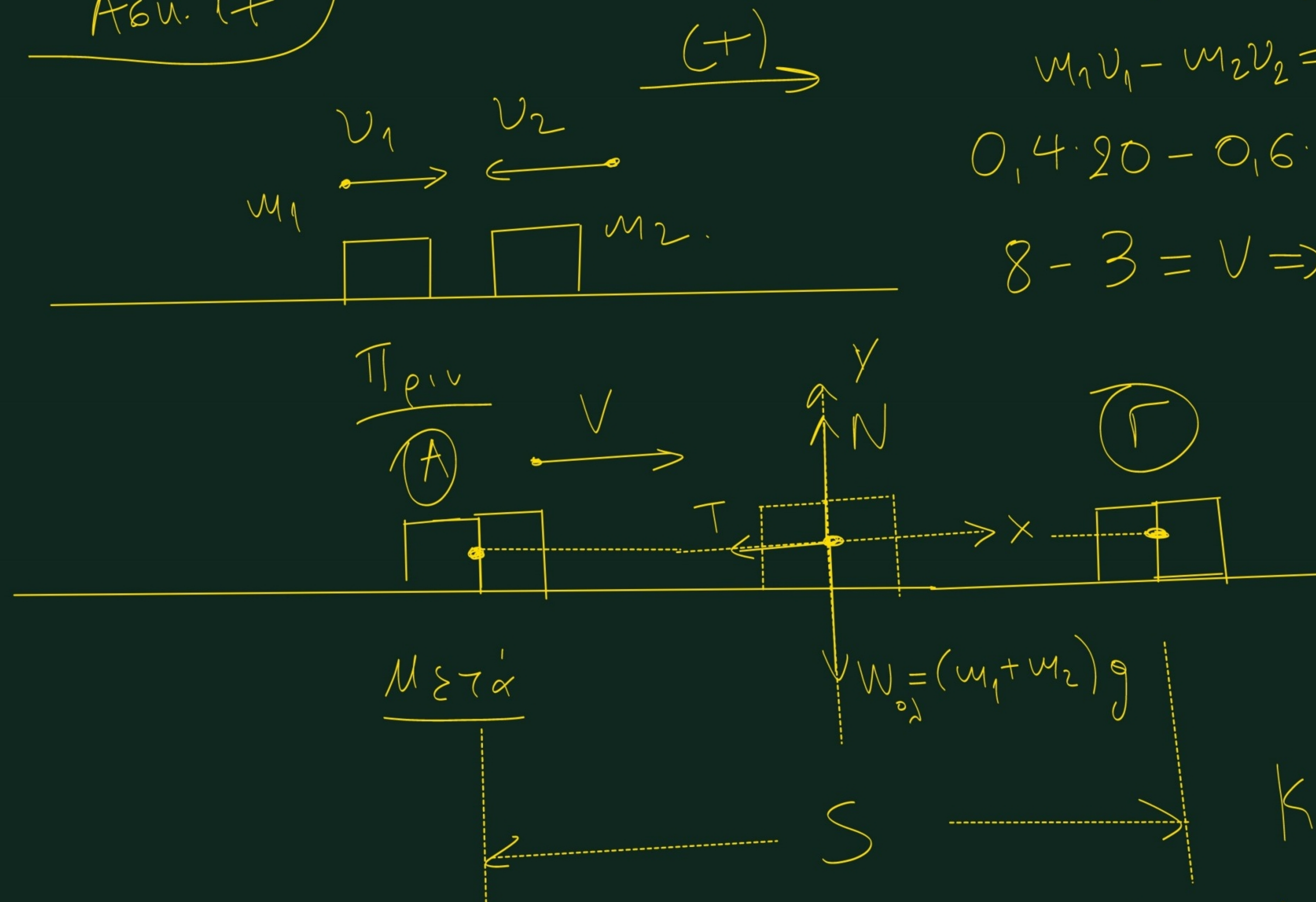


Αδμ. 17



$$A. P_{\text{πριμ}} = P_{\text{μετὰ}} \Rightarrow$$

$$m_1 v_1 - m_2 v_2 = (m_1 + m_2) V \Rightarrow$$

$$0,4 \cdot 20 - 0,6 \cdot 5 = (0,4 + 0,6) \cdot V \Rightarrow$$

$$8 - 3 = V \Rightarrow V = 5 \text{ m/s.}$$

$$B. K_{\text{πριμ}} = \frac{1}{2} m_1 v_1^2 + \frac{1}{2} m_2 v_2^2 =$$

$$= \frac{1}{2} \cdot 0,4 \cdot 20^2 + \frac{1}{2} \cdot 0,6 \cdot 5^2 =$$

$$= 0,2 \cdot 400 + 0,3 \cdot 25 \Rightarrow$$

$$K_{\text{πριμ}} = 80 + 7,5 = 87,5 \text{ Joule.}$$

$$K_{\text{μετὰ}} = \frac{1}{2} (m_1 + m_2) V^2 = \frac{1}{2} \cdot 1 \cdot 5^2 = 12,5 \text{ J.}$$

Άρα η ανώτερη ενέργεια (υπό γοργή, υνρίως, θερμότητας) είναι:

Asu. 13 s. 2.66.

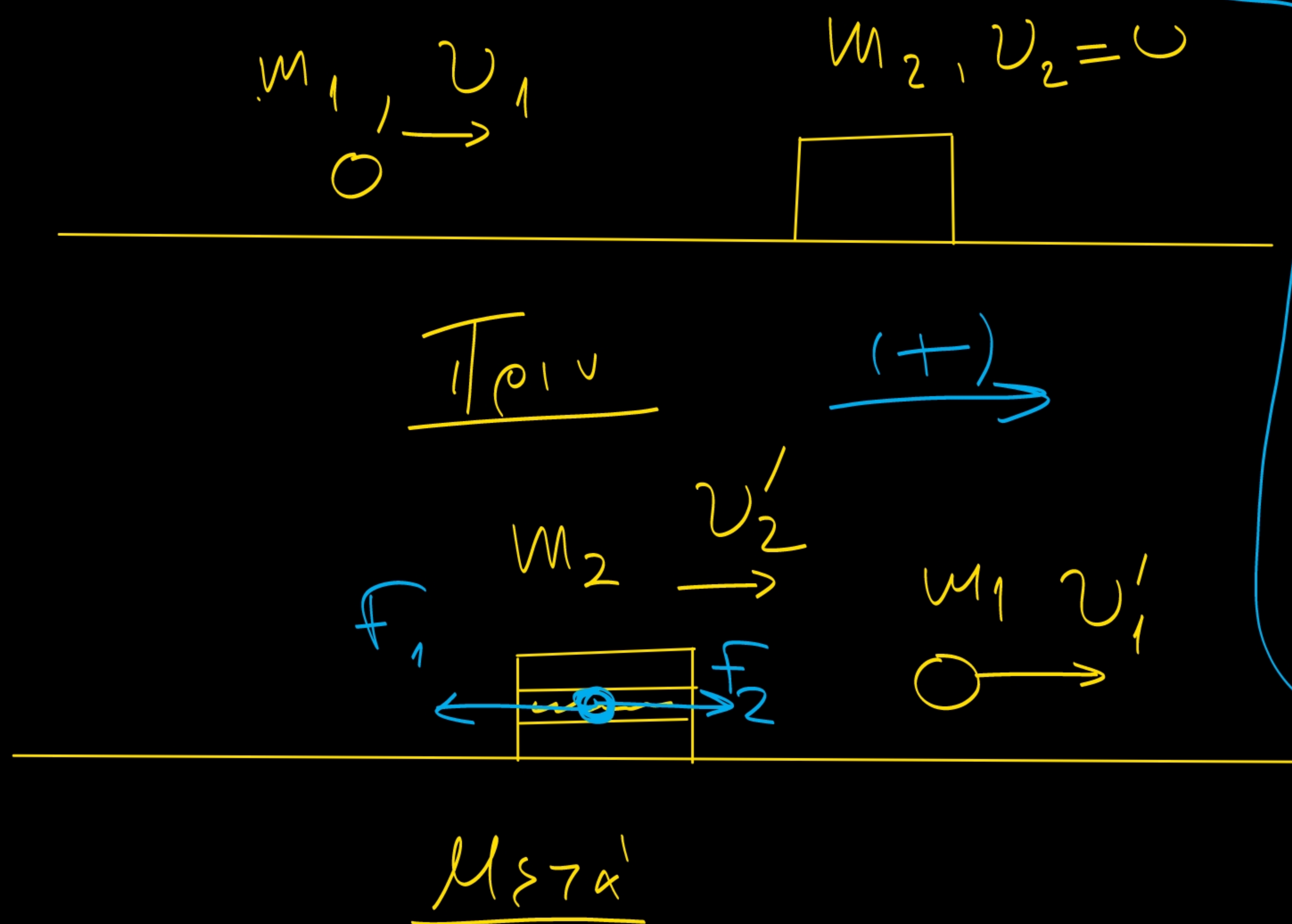
$$m_1 = 100 \text{ g} = 0,1 \text{ kg}$$

$$v_1 = 400 \text{ m/s.}$$

$$m_2 = 2 \text{ kg.}$$

$$v_1' = 100 \text{ m/s}$$

$$\Delta t = 0,1 \text{ sec}$$



$$F_1 = \frac{\Delta p_1}{\Delta t} = \frac{m_1 v_1' - m_1 v_1}{\Delta t} = \frac{0,1 \cdot 100 - 0,1 \cdot 400}{0,1} =$$
$$= 100 - 400 = -300 \text{ N}$$

A.

$$p_{n\pi v} = m_1 v_1.$$

$$p_{v\pi\tau\alpha} = m_1 v_1' + m_2 v_2'$$

$$p_{n\pi v} = p_{v\pi\tau\alpha} \Rightarrow$$

$$m_1 v_1 = m_1 v_1' + m_2 v_2' \Rightarrow$$

$$0,1 \cdot 400 = 0,1 \cdot 100 + 2 \cdot v_2' \Rightarrow$$

$$40 = 10 + 2v_2' \Rightarrow v_2' = 15 \text{ m/s}$$

B.

$$F_2 = \frac{\Delta p_2}{\Delta t} = \frac{m_2 v_2' - 0}{\Delta t} =$$

$$F_2 = \frac{2 \cdot 15}{0,1} \Rightarrow F = 300 \text{ N.}$$

Абу. 15 682.67

$$m = 60 \text{ kg}$$

$$v = 72 \text{ km/h} = \frac{72.000 \text{ m}}{3.600 \text{ sec}} = 20 \text{ m/s.}$$

$$M = 1200 \text{ kg.}$$

$$t = 0,12 \text{ sec}$$

$$A. P_{\text{прив}} = Mv - P \quad | \quad \Rightarrow$$

$$P_{\text{устр}} = 0$$

$$Mv - P = 0 \Rightarrow$$

$$P = Mv = 1200 \cdot 20 \Rightarrow$$

$$P = 24.000 \text{ kg} \cdot \text{m/s}$$

