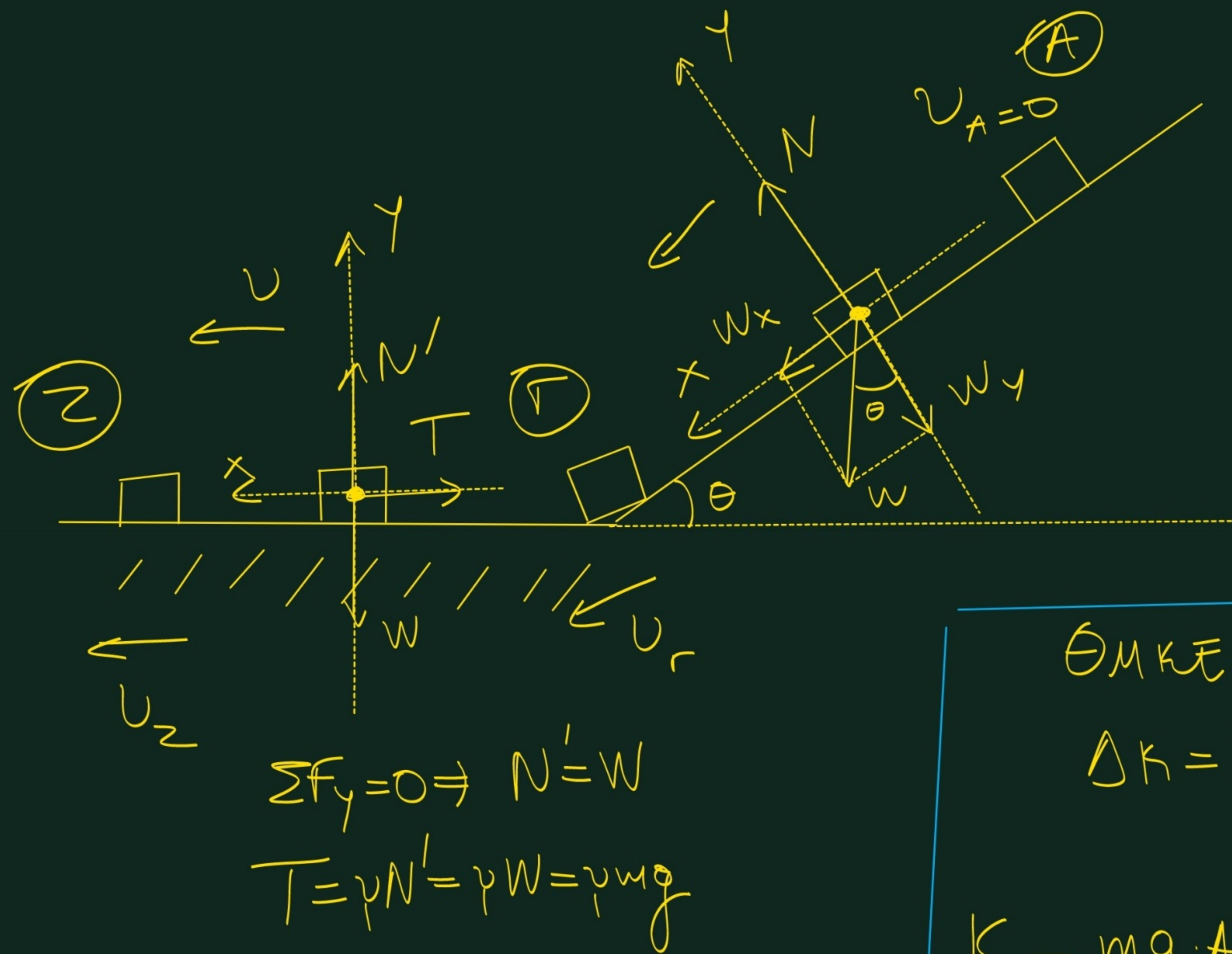


Asu. 6 292. 193.)



ΘΜΚΕ: (A) → (Γ).

$$\Delta K = \sum W \Rightarrow$$

$$K_r - K_A = W_{W_x} + \cancel{W_{W_y}} + \cancel{W_N} \Rightarrow$$

$$(\vec{W}_y, \vec{N} \perp \Delta \vec{x})$$

$$K_r - 0 = W_x \cdot A r \Rightarrow$$

$$K_r = m \cdot g \cdot w_y \theta \cdot A r$$

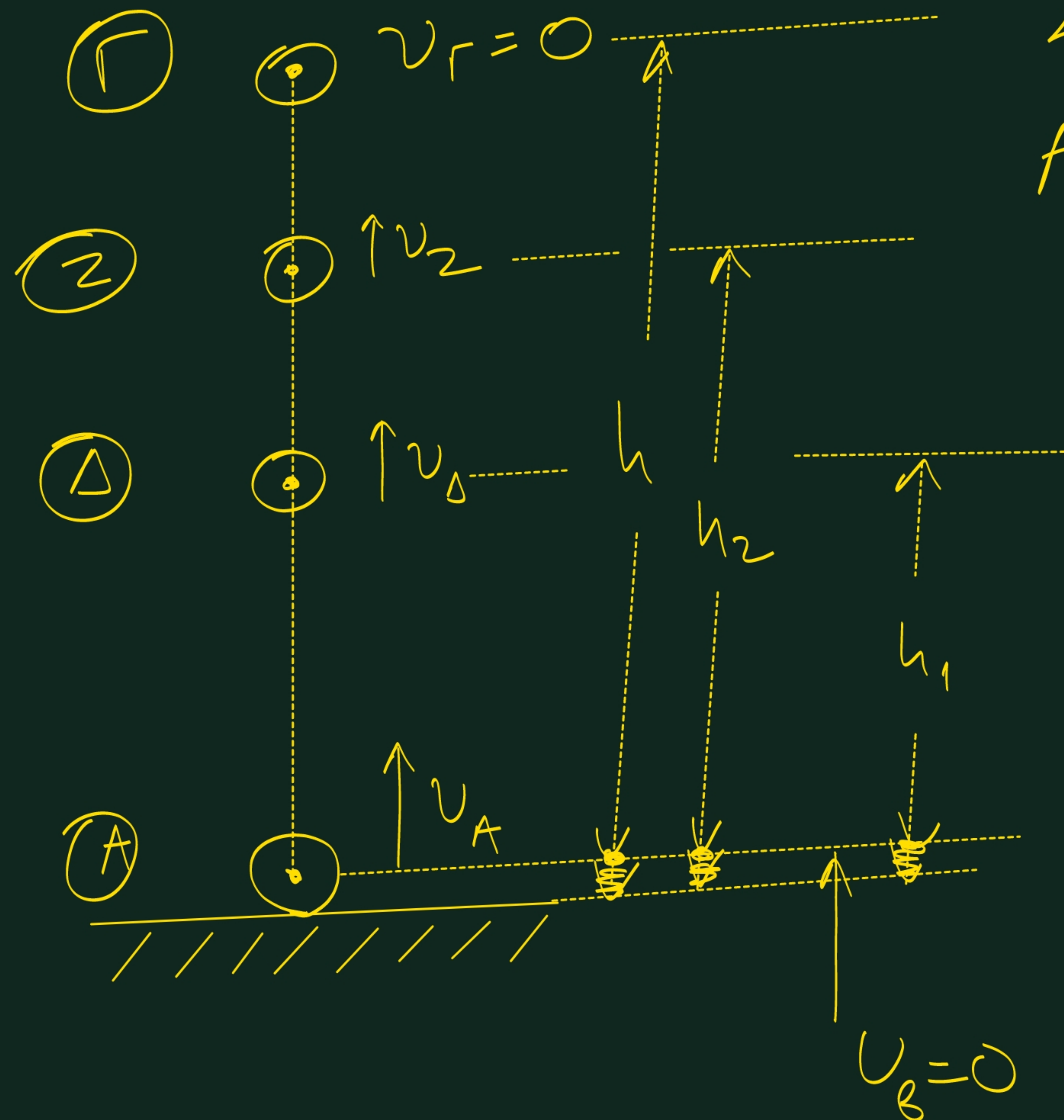
ΘΜΚΕ: (Γ) → (2):

$$\Delta K = \sum W \Rightarrow K_2 - K_r = W_T + \cancel{W_{N'}} + \cancel{W_W} \Rightarrow$$

$$(\vec{N}', \vec{W} \perp \Delta \vec{x})$$

$$K_2 - mg \cdot A r \cdot w_y \theta = -T \cdot r_2$$

Ασκ. 13 βιβλ. 194)



Στη θέση ① έχουμε: $K_{\Delta} = \frac{K_A}{2}$

Στη θέση ② έχουμε: $P_2 = \frac{P_A}{2}$. ($P = m \cdot v = \rho \cdot v \cdot h$)

Α. ΑΔΜΕ: ① → ②: $K_A + \cancel{U_A} = K_{\Gamma} + U_{\Gamma} \Rightarrow$

$$K_A = m \cdot g \cdot h.$$

ΑΔΜΕ: ① → ①: $K_A + U_A = K_{\Delta} + U_{\Delta} \Rightarrow$

$$K_A + 0 = \frac{K_A}{2} + m \cdot g \cdot h_1 \Rightarrow$$

$$\cancel{m \cdot g \cdot h} = \frac{\cancel{m \cdot g \cdot h}}{2} + \cancel{m \cdot g \cdot h_1} \Rightarrow h = \frac{h}{2} + h_1 \Rightarrow$$

$$40 = 20 + h_1 \Rightarrow h_1 = 20 \text{ m}$$

$$B. \quad p_2 = \frac{p_A}{2} \Rightarrow m \cdot v_2 = \frac{m \cdot v_A}{2} \Rightarrow v_2 = \frac{v_A}{2}$$

$$K_2 = \frac{1}{2} m \cdot v_2^2 = \frac{1}{2} \cdot m \cdot \left(\frac{v_A}{2} \right)^2 = \frac{1}{4} \cdot \frac{1}{2} \cdot m \cdot v_A^2 \Rightarrow$$

$$K_2 = \frac{1}{4} K_A$$

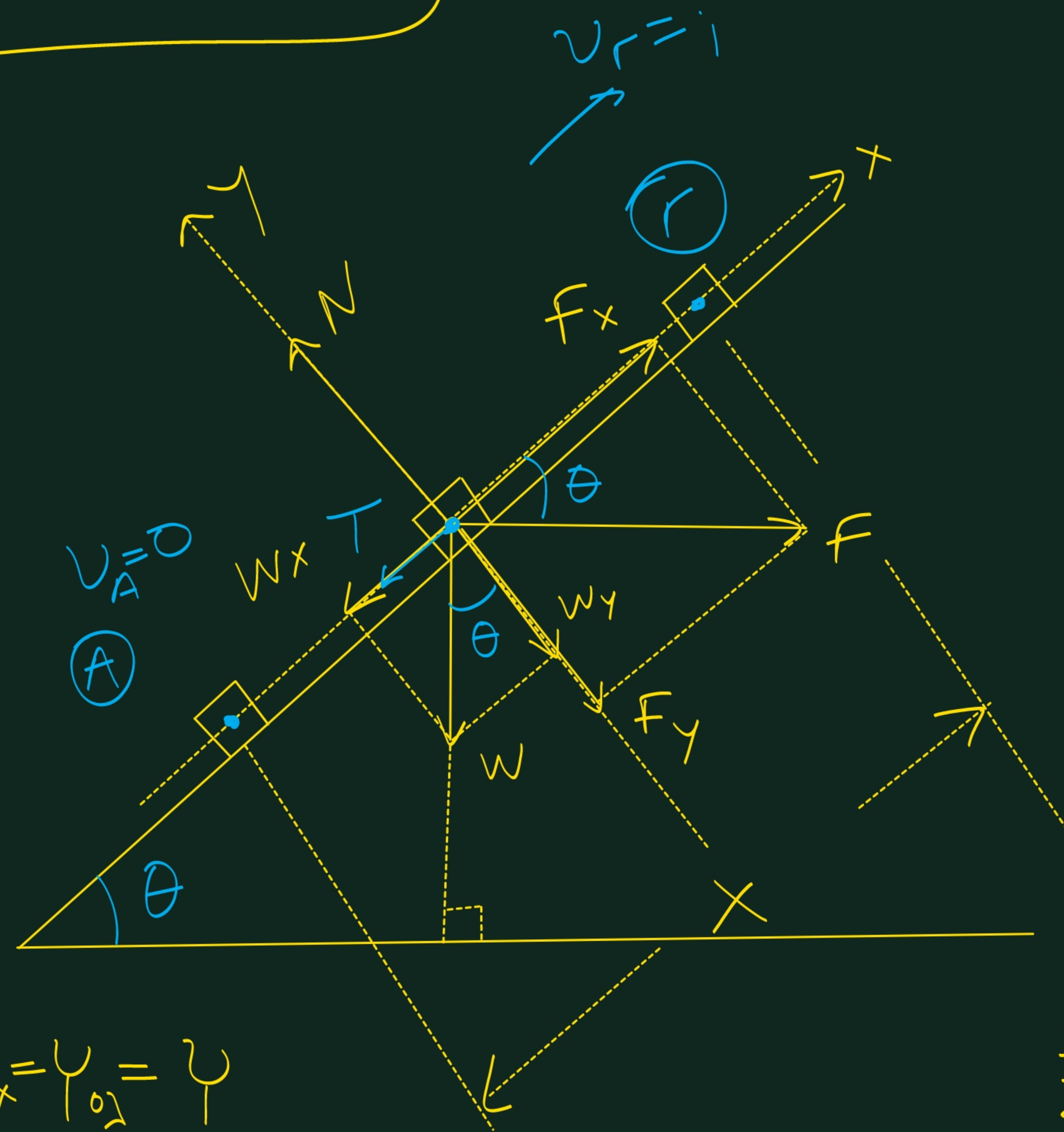
$$ADME: \textcircled{A} \rightarrow \textcircled{Z}: K_A + \cancel{v_A}^0 = K_2 + v_2 \Rightarrow$$

$$K_A + 0 = \frac{K_A}{4} + m \cdot g \cdot h_2 \Rightarrow$$

$$\cancel{m \cdot g \cdot h} = \frac{\cancel{m \cdot g \cdot h}}{4} + \cancel{m \cdot g \cdot h_2} \Rightarrow$$

$$h = \frac{h}{4} + h_2 \Rightarrow 40 = \frac{40}{4} + h_2 \Rightarrow 40 = 10 + h_2 \Rightarrow \textcircled{h_2 = 30 \text{ m}}$$

Ag. 16 ελ. 194.)



$$U_{\text{στ, max}} = U_{02} = U$$

$$F_x = F \cdot \cos \theta = 100 \cdot 0,8 = 80 \text{ N}$$

$$F_y = F \cdot \sin \theta = 100 \cdot 0,6 = 60 \text{ N}$$

$$W_x = m \cdot g \cdot \sin \theta = 5 \cdot 10 \cdot 0,6 = 30 \text{ N}$$

$$W_y = m \cdot g \cdot \cos \theta = 5 \cdot 10 \cdot 0,8 = 40 \text{ N}$$

$$\text{ΘΜΚΕ: } (A) \rightarrow (\Gamma): \Delta K = \sum W \Rightarrow$$

$$K_\Gamma - K_A = W_{W_x} + W_{W_y} + W_{F_x} + W_{F_y} + W_N + W_T$$

$$(W_y, F_y, N \perp \Delta x)$$

$$\frac{1}{2} m \cdot v_\Gamma^2 = W_x \cdot X + F_x \cdot X - T \cdot X$$

