

(1.)

$$\bar{P} = \frac{V_{\text{eff}}^2}{R} = \frac{U_0^2}{2R} = 96,1 \text{ W} \quad \frac{3}{8}$$

$$I_{\text{eff}} = \frac{V_{\text{eff}}}{R} = \frac{U_0}{\sqrt{2}R} = 0,44 \text{ A} \quad \frac{2}{8}$$

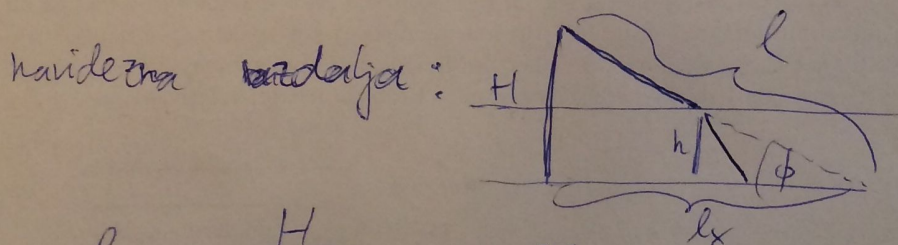
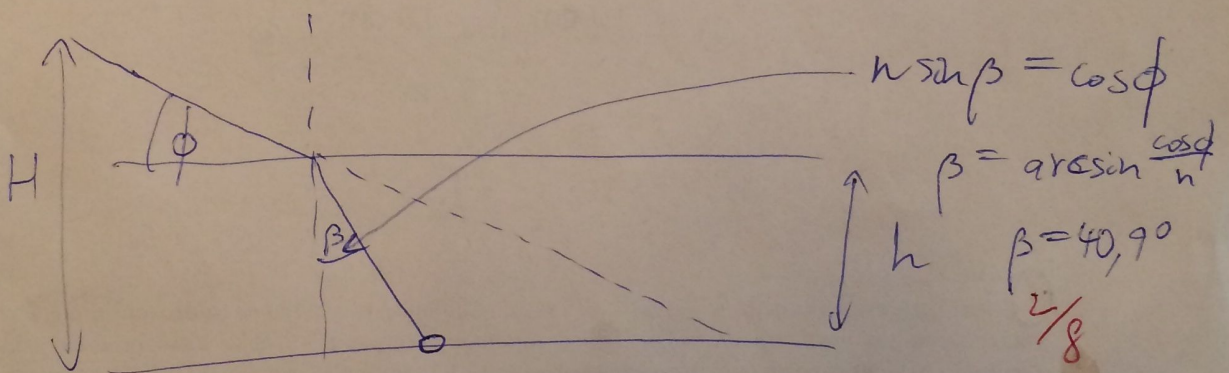
pri  $t = \frac{T}{4}$

$$P = \frac{U(t)^2}{R} = \frac{U_0^2 \sin^2(\omega t)}{R}$$

$$P = \frac{U_0^2}{R} \sin^2\left(\omega \frac{T}{4}\right) = \frac{U_0^2}{R} \sin^2 \frac{\pi}{4}$$

$$= \frac{U_0^2}{2R} = \bar{P} = 96,1 \text{ W} \quad \frac{3}{8}$$

(2.)

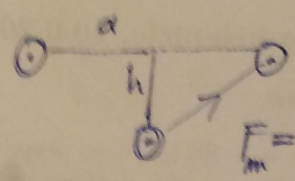


$$l = \frac{H}{\sin \phi} = 3,31 \text{ m}, \quad \text{oz. } l_x = H \cot \phi$$

dejanska razd.  $l'_x = (H-h) \cot \phi = 2,71 \text{ m} \quad \frac{3}{8}$

$$\text{oz. } l' = \frac{H-h}{\sin \phi} + \frac{h}{\cos \phi} + h \tan \beta = 2,43 \text{ m} \quad \frac{4}{8}$$
$$= (2,44 + 0,66) \text{ m} = 3,1 \text{ m}$$

37.



$$F_m = I l B$$

$$B = \frac{\mu_0 I}{2\pi \sqrt{a^2 + h^2}}$$

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sta masa  
 hki pravilna  
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$$F_m = \frac{2\mu_0 I I_x l}{2\pi \sqrt{a^2 + h^2}} \cdot \frac{h}{\sqrt{a^2 + h^2}}$$

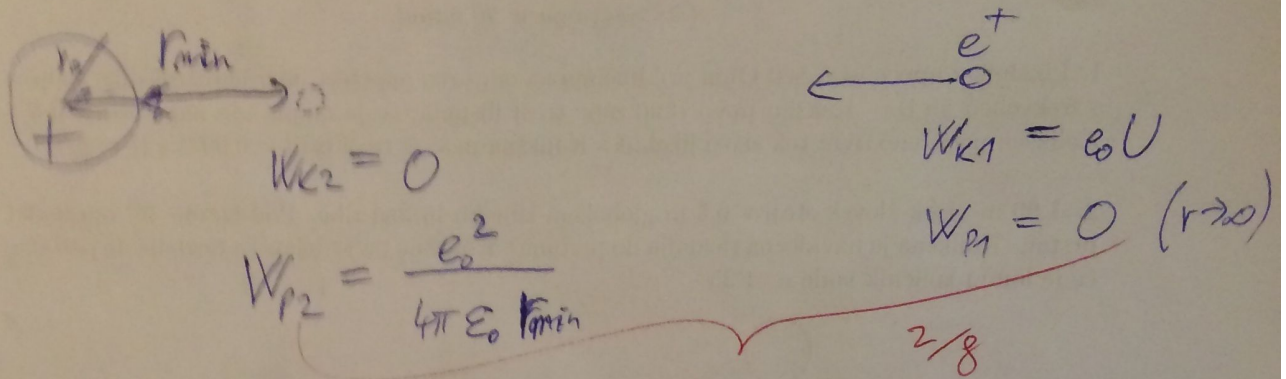
$$= \frac{\mu_0 I l h}{\pi (a^2 + h^2)} I_x = mg$$

↓

$$I_x = \frac{\pi}{\mu_0} \frac{mg (a^2 + h^2)}{I l h} = 6,13 \cdot 10^6 \text{ A}$$

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4.



1)  $\Delta W = 0 \Rightarrow W_{k2} + W_{p2} = W_{k1} + W_{p1}$

$$\frac{e_0^2}{4\pi\epsilon_0 r_{\min}} = e_0 U$$

$$r_{\min} = \frac{e_0}{4\pi\epsilon_0 U} = 7.2 \times 10^{-13} \text{ m}$$

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2)  $r_{\min} \equiv r_0 = 1.5 \cdot 10^{-15}$

$$U = \frac{e_0}{4\pi\epsilon_0 r_0} = 960 \text{ eV}$$

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