1 $B=2T \quad u=8\,m/s \quad l=50cm, \; E=?$

$E = Blu = 2 \cdot 0,5 \cdot 8 = 8\,V$

2 100 σπείρες, $\Phi = 0,002\,Wb$, $\Delta t = 0,01\,s$

$E = N \cdot \frac{\Delta\Phi}{\Delta t} = 100 \cdot \frac{0,002}{0,01} = 20\,V$

3 $\Delta I = 20\,A$, $\Delta t = 0,02\,s$, $L = 0,1\,H$, $E=?$

$E = 0,1 \cdot \frac{20}{0,02} = 400V$

4 $\Delta I = 32\,A$, $\Delta t = 0,02\,s$, $E = 96\,V$, $L=?$

$E = L\frac{\Delta I}{\Delta t} \Rightarrow L = \frac{E \cdot \Delta t}{\Delta I} = \frac{96 \cdot 0,02}{32} = 3 \cdot 0,02 = 0,06\,H$

5 $L = 1\,H$, $R = 4\,\Omega$

$\tau = \frac{L}{R} = \frac{1}{4} = 0,25\,s$

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1 ΑΣΚΗΣΕΙΣ 3.5. Σ-261

$Q = 10\,C$, $u = 10\,m/s$, $B = 1\,T$, $F = Q \cdot u \cdot B = 10 \cdot 10 \cdot 1 = 100\,N$

2 $F = 40\,N$, $B = 2\,T$, $l = 1\,m$, $I=;$

$F = B \cdot l \cdot I \Rightarrow I = \frac{F}{Bl} = \frac{40}{2 \cdot 1} = 20\,A$

3 $l = 2\,m$, $r = 10\,cm$, $I=;$ $F = 1\,N$ (ίσο ρεύμα οι αμπού $I = 100\,A$)

$F = \frac{\mu_0 \cdot I_1 I_2}{2\pi \cdot r} \cdot l \Rightarrow I^2 = \frac{F \cdot 2\pi \cdot r}{\mu_0 \cdot l} = \frac{1 \cdot 2\pi \cdot 0,1}{4\pi \cdot 10^{-7} \cdot 2} = \frac{10^6}{4} = 250.000\,A$

όμως $\Rightarrow I = \sqrt{250.000} = \underline{500\,A.}$