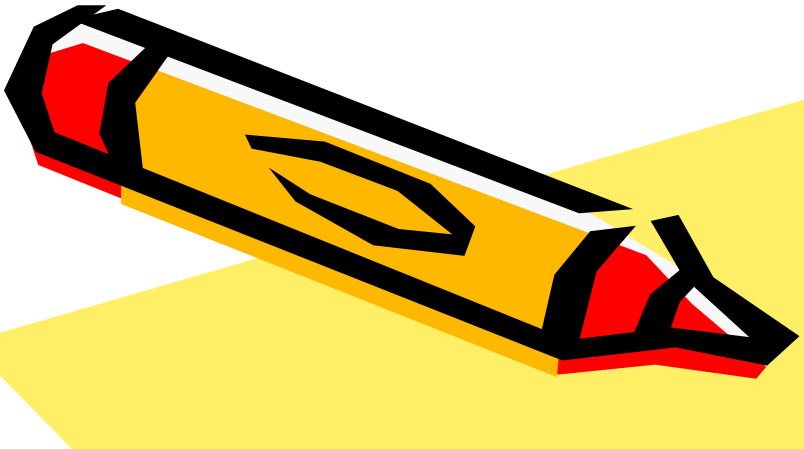


Ohmi seadus vahelduvvooluringis

Füüsika
11 klass
Antsla Gümnaasium

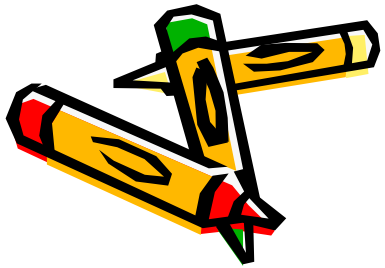
Andmed

- Δt – t-telg
- $\Delta t = 5*10^{-3} s = 5ms$
- ΔU –U-telg
- $\Delta U = 60V$
- $R = 35\Omega$
- $L = 0{,}10H$
- $C = 10\mu F = 1*10^{-5}$ F

1) aja teljele s
2) pinge teljele V

Õppematerjal:

Seeriaülesanded(II osa) lk. 38



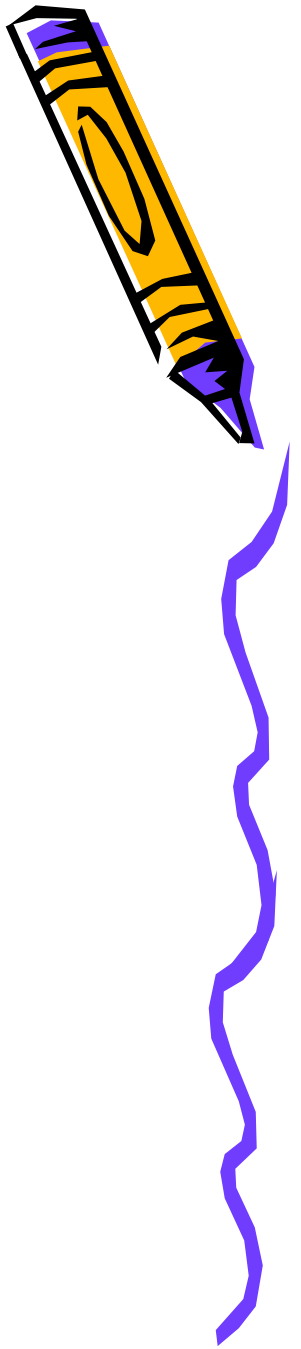
Vahelduvvoolu periood

- T – vahelduvvoolu periood

$$\Delta T = 4 \times \Delta t$$

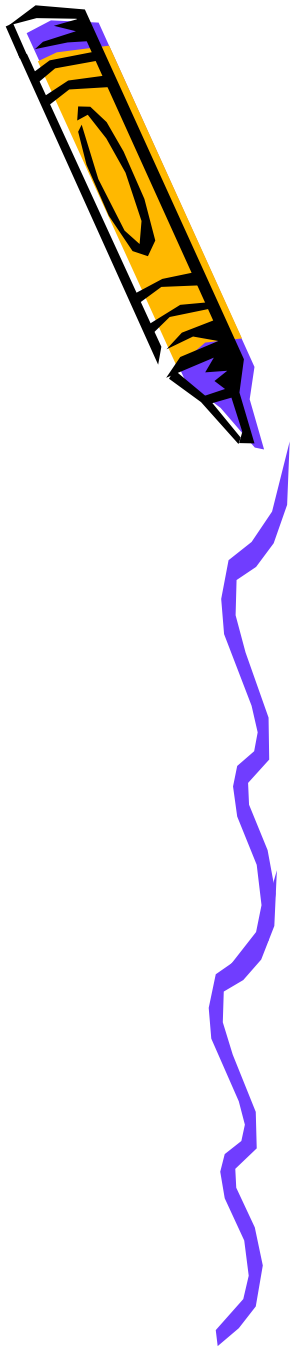
Sagedus

$$f = \frac{1}{T}$$



Ringsagedus

$$\varpi = 2 \times \pi \times f$$



Pinge võrrand u=f(t)

- u= 240*cos314t
- u=Um*cosw*t

Kondensaatori mahtuvustakistus

$$X_C = \frac{1}{\omega \times C}$$

Pooli induktiivtakistus

$$X_L = \omega \times L$$

Kogutakistus

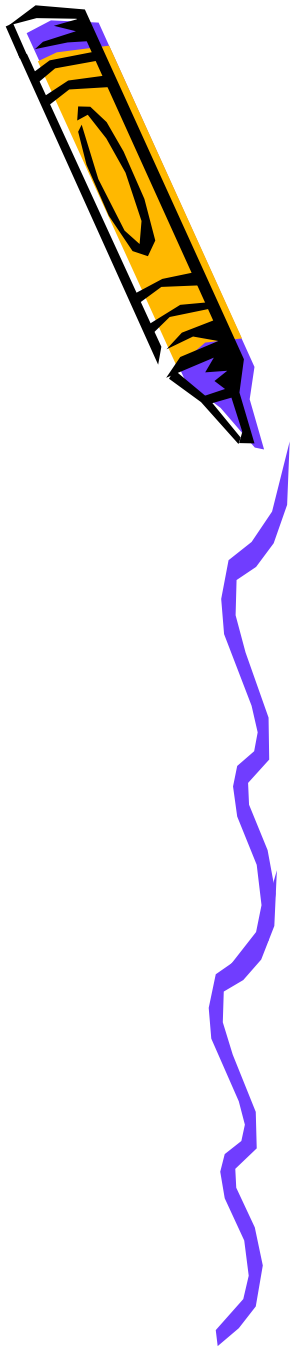
$$X = \sqrt{(R)^2 + (X_c - X_L)^2}$$

Voltmeetri näit

$$U = \frac{U_m}{\sqrt{2}}$$

$$U_m = 4 \times \Delta U$$

$$U = \frac{4 \times \Delta U}{\sqrt{2}}$$



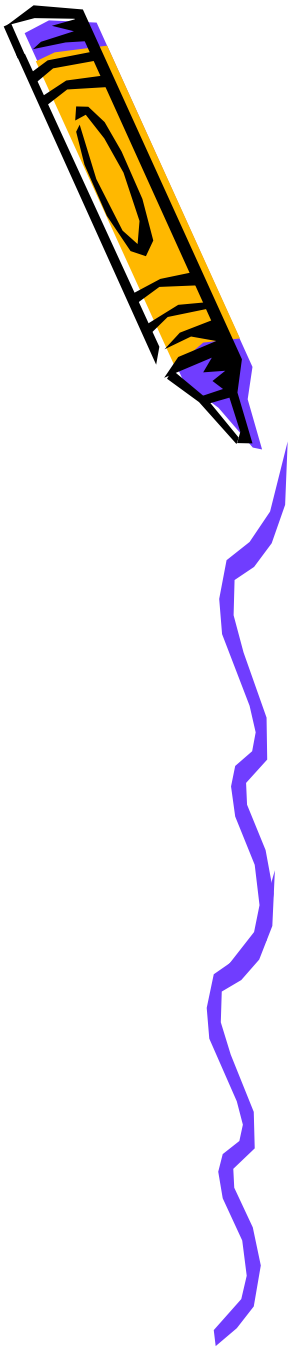
Ampermeetri näit

$$I = \frac{U}{X}$$

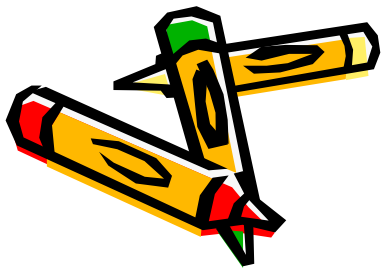
Pinge takisti otstel

$$U_R = I \times R$$

Faaside vahe pinge ja voolutugevuse vahel



$$\varphi = a\tan\left(\frac{X_c - X_L}{R}\right)$$



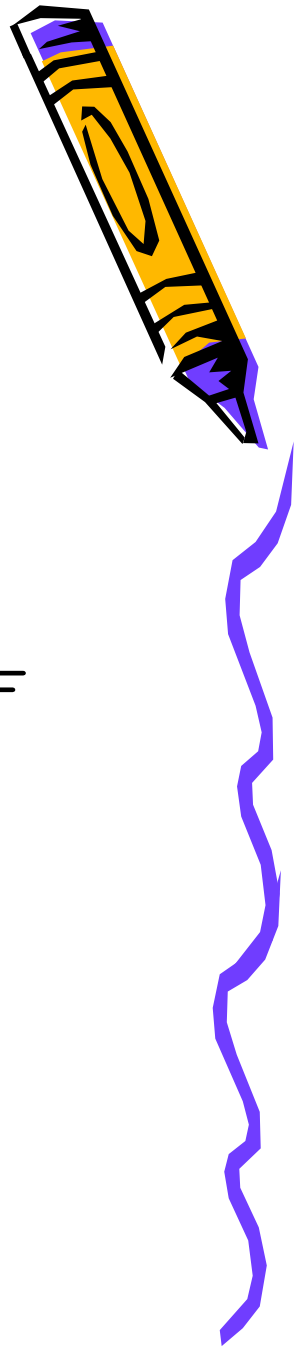
Võimsustegur

$\cos\varphi = ?$

Takistil eralduv võimsus

$$N_R = U_R \times I$$

Sagedus



$$\nu_0 = \frac{1}{2 \times \pi \times \sqrt{L \times C}}$$

Tänan tähelepanu eest!

Edukat õppimist☺☺☺