

$$I = \frac{q}{t} = [A]$$

$$q = I \cdot t$$

$$U = \frac{A}{q} = [B]$$

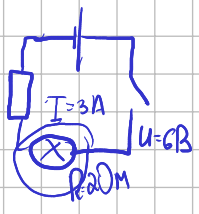
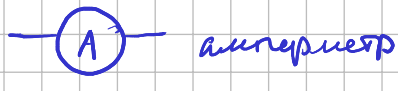
$$R = \frac{P \cdot t}{S} = [Om]$$

ρ - удельное сопр. $\left[\frac{Om \cdot mm^2}{m} \right]$

Закон Ома

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

для участка цепи



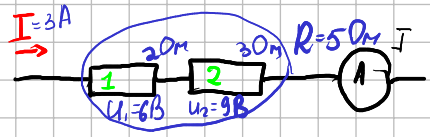
3-я Джоуль-Лема

$$A = Uq = UIt = U \cdot \frac{U}{R} \cdot t = \frac{U^2}{R} t = I^2 R t$$

$$P = \frac{A}{t} = UI = \frac{U^2}{R} = I^2 R$$

Соединение

1) Последовательное $U=15B$



$$I = I_1 = I_2$$

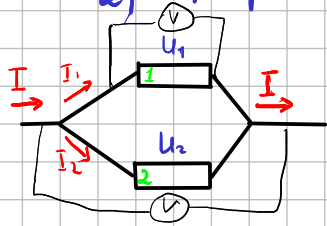
$$U = U_1 + U_2$$

$$R = R_1 + R_2$$

$$\frac{1}{C} = \frac{1}{C_1} + \frac{1}{C_2}$$

$$C = \frac{C_1 \cdot C_2}{C_1 + C_2}$$

2) Параллельное

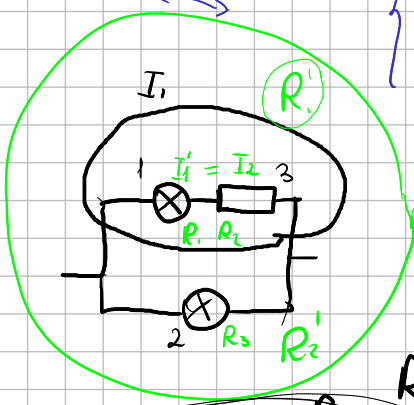


$$I = I_1 + I_2$$

$$U = U_1 = U_2$$

$$\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2} \quad R = \frac{R_1 \cdot R_2}{R_1 + R_2}$$

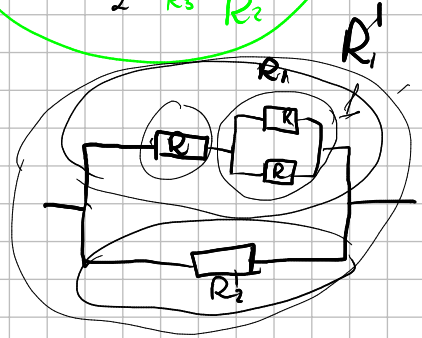
$$C = C_1 + C_2$$



$$I = I_1 + I_2$$

$$R' = R_1 + R_2$$

$$\frac{1}{R_{общ}} = \frac{1}{R_1} + \frac{1}{R_2}$$



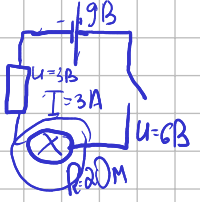
$$\frac{1}{R'} = \frac{1}{R_1} + \frac{1}{R_2}$$

R_1

$$R' = R_1 + R_2$$

$$\frac{1}{R_{общ}} = \frac{1}{R_1} + \frac{1}{R_2}$$

Закон Ома для полной цепи



$$I = \frac{\mathcal{E}}{R+r}$$

r - внутр. сопр. исл. тока
 \mathcal{E} - электродвижущая сила (ЭДС)

