

OHMIN LAKI

$$R = \frac{U}{I} \quad \left[= \frac{V}{A} = \Omega \right] \quad \text{OHMI} \quad \text{"oomi"}$$

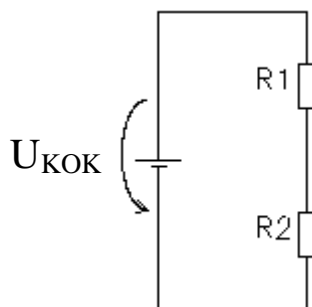
$$R = \frac{U}{I} \Rightarrow I = \frac{U}{R} \Rightarrow U = R \times I$$

SÄHKÖINEN TEHO

$$P = U \times I \quad \left[= V \times A = W \right] \quad \text{WATTI}$$

$$P = U \times I \Rightarrow U = \frac{P}{I} \Rightarrow I = \frac{P}{U}$$

VASTUSTEN SARJAKYTKENTÄ

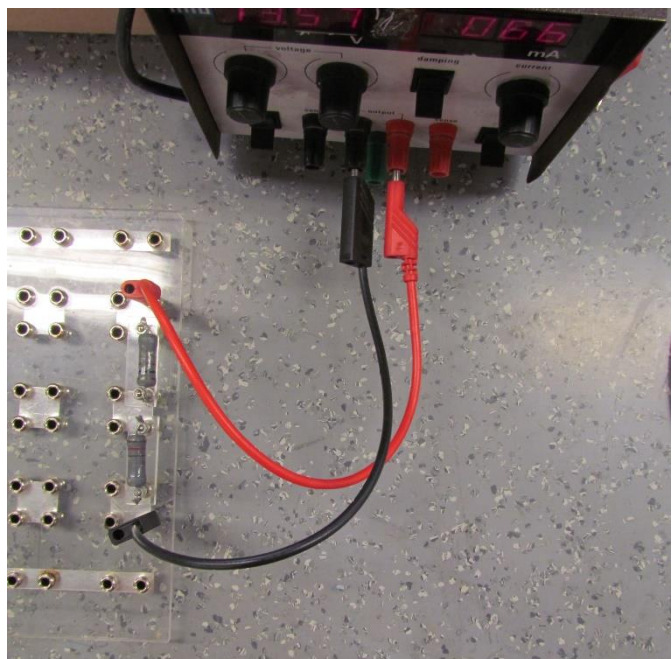


$$R_{KOK} = R_1 + R_2$$

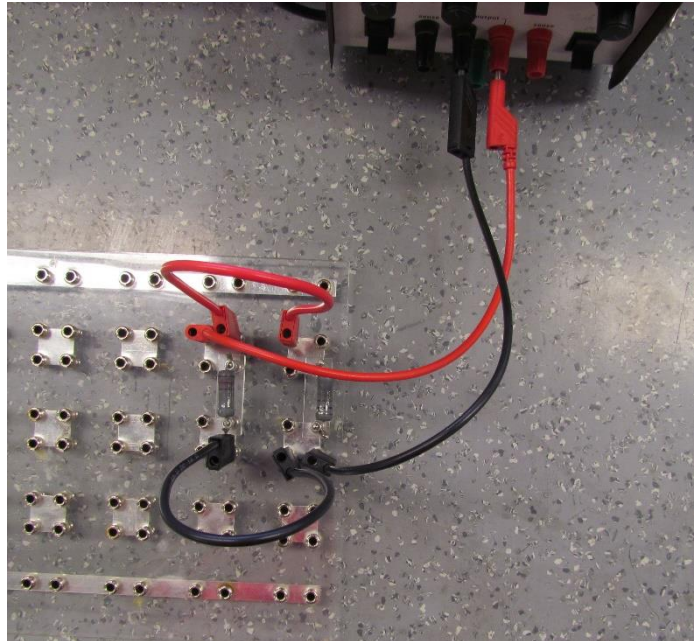
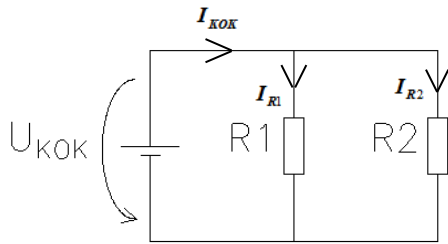
$$I = I_{R1} = I_{R2} = \frac{U_{KOK}}{R_{KOK}}$$

$$U_{R1} = I \times R_1$$

$$U_{R2} = I \times R_2$$



VASTUSTEN RINNANKYTKENTÄ



$$R_{KOK} = \frac{1}{\frac{1}{R1} + \frac{1}{R2}}$$

$$U_{R1} = U_{R2} = U_{KOK}$$

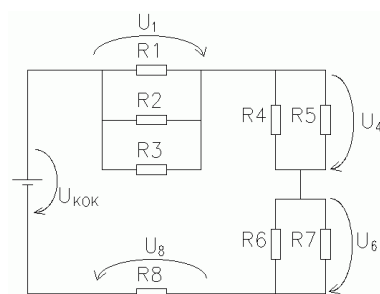
$$I_{R1} = \frac{U_{KOK}}{R1} \quad I_{R2} = \frac{U_{KOK}}{R2}$$

$$I_{KOK} = I_{R1} + I_{R2}$$

$$I_{KOK} = \frac{U_{KOK}}{R_{KOK}}$$

KIRCHOFFIN JÄNNITELAKI

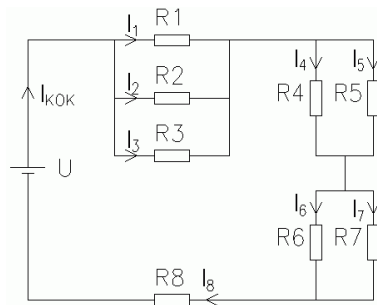
Virtapiirin lähdejännitteiden summa on sama kuin sen jännitehäviöiden summa



$$U_{KOK} = U_1 + U_4 + U_6 + U_8$$

KIRCHOFFIN VIRTALAKI

*Pisteeseen tulevien virtojen summa on sama
kuin pisteestä lähtevien virtojen summa*



$$I_{\text{KOK}} = I_1 + I_2 + I_3 = I_4 + I_5 = I_6 + I_7 = I_8$$