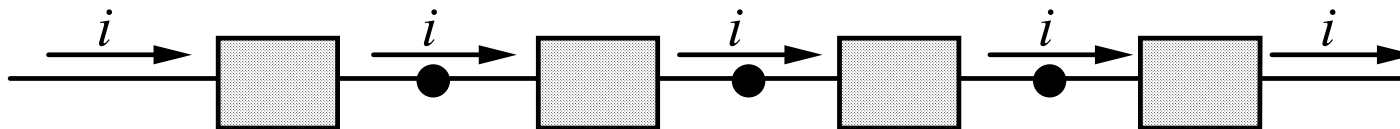
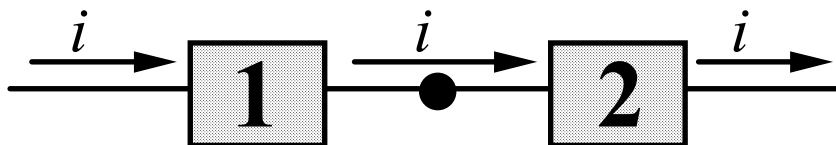
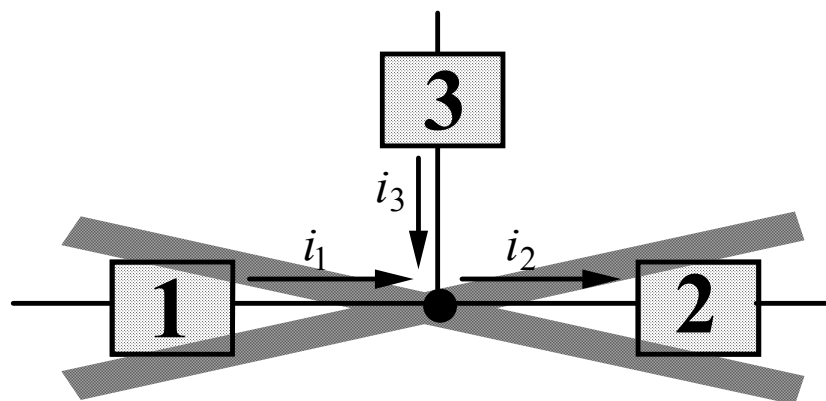


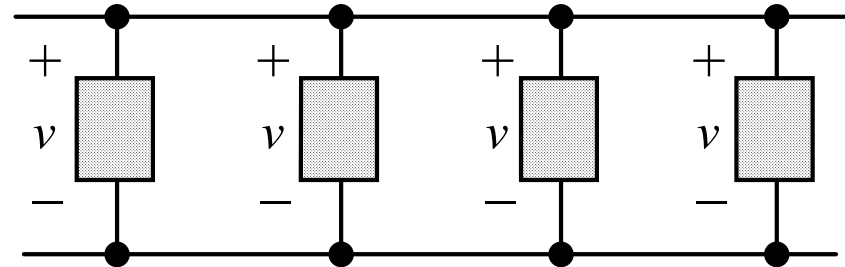
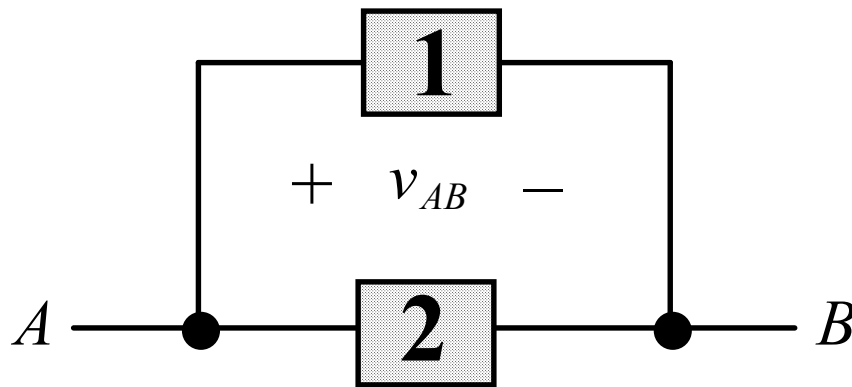
Serie-elkarketa



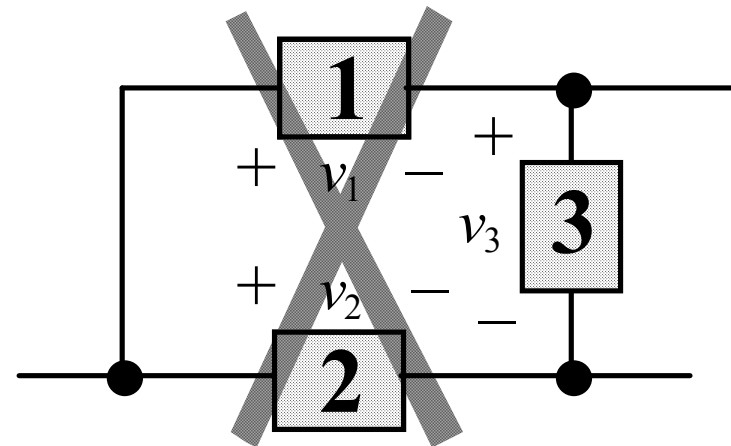
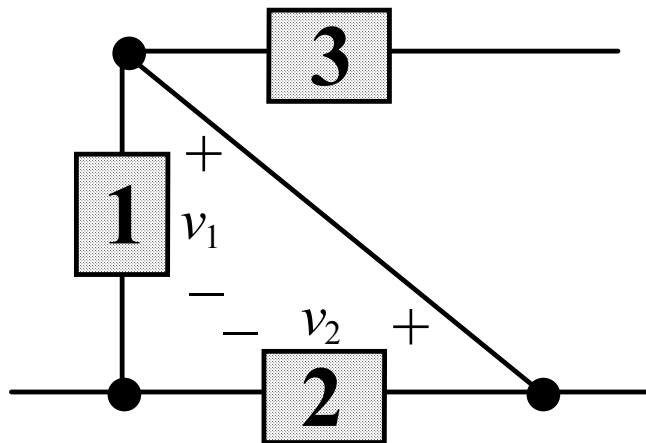
Elementu guztietatik korrante bera igarotzen da



Paralelo-elkarketa

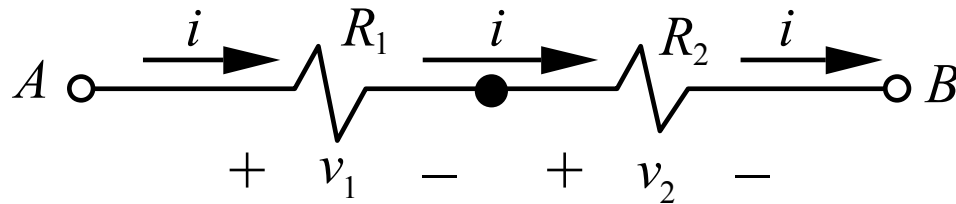


Elementu guztietako tentsioa bera da



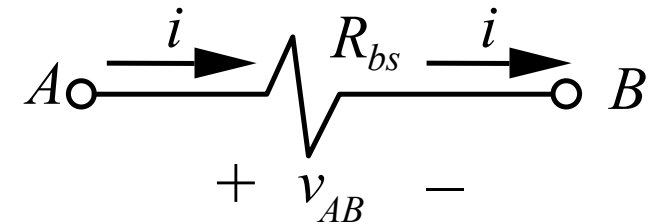
Erresistentziak seriean

Erresistentzia baliokidea



$$v_1 = R_1 i \quad v_2 = R_2 i$$

$$v_{AB} = v_1 + v_2 = R_1 i + R_2 i = (R_1 + R_2) i$$

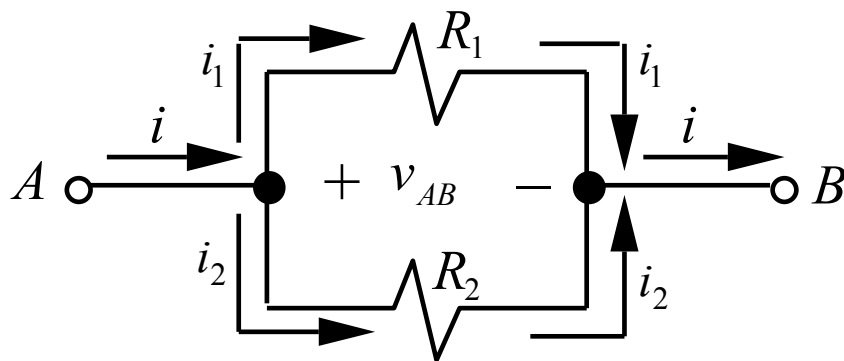


$$v_{AB} = R_{bs} i$$

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

$$R_{bs} = \sum_i R_i$$

Erresistentziak paraleloan

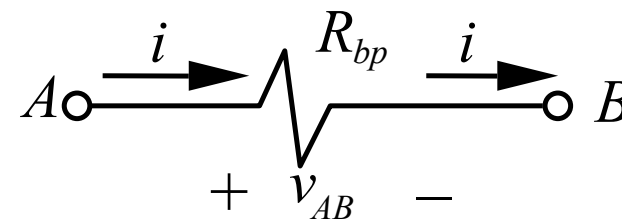


$$v_{AB} = R_1 i_1$$

$$v_{AB} = R_2 i_2$$

$$i = i_1 + i_2 = \left(\frac{v_{AB}}{R_1} \right) + \left(\frac{v_{AB}}{R_2} \right) = \left(\frac{1}{R_1} + \frac{1}{R_2} \right) v_{AB}$$

Erresistentzia baliokidea



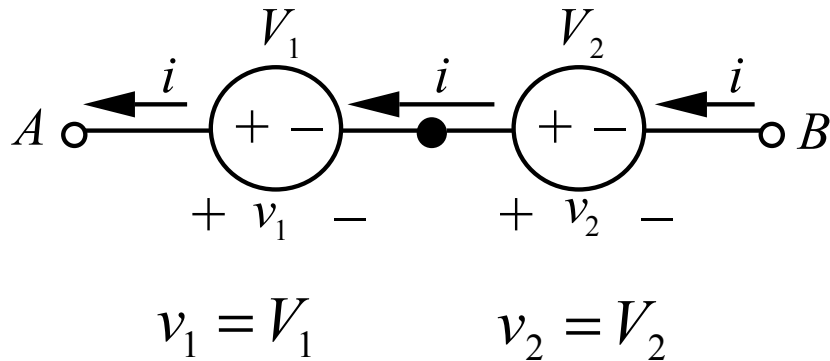
$$i = \frac{v_{AB}}{R_{bp}}$$

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

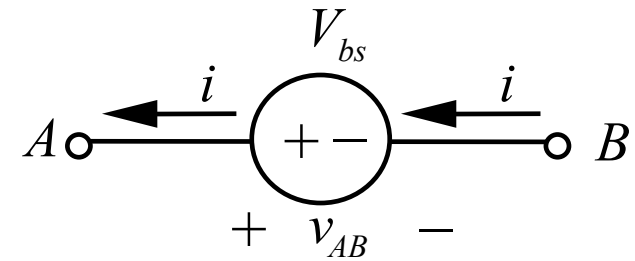
$$\boxed{\frac{1}{R_{bp}} = \sum_i \frac{1}{R_i}}$$

Tentsio-sorgailuak seriean

Sorgailu baliokidea



$$v_{AB} = V_1 + V_2$$

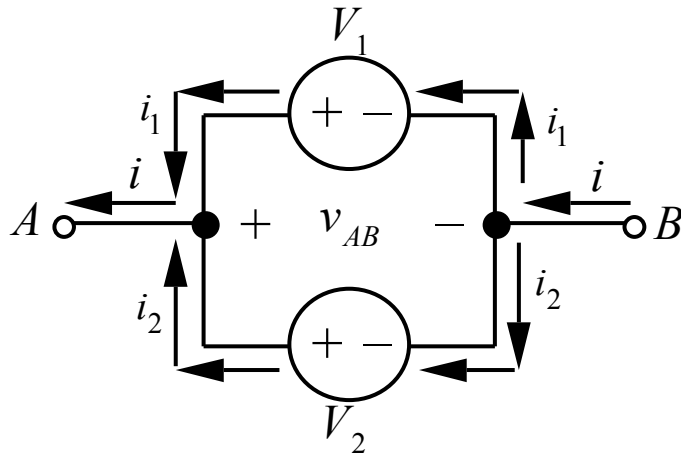


$$v_{AB} = V_{bs}$$

$$V_{bs} = V_1 + V_2$$

$$V_{bs} = \sum_i V_i$$

Tentsio-sorgailuak paraleloan

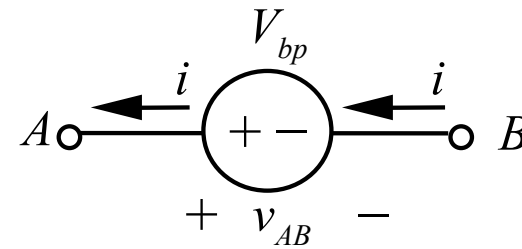


$$v_{AB} = V_1 \quad v_{AB} = V_2$$

Baldin $V_1 \neq V_2$ **EZINEZKOA**

$$V_{bp} = V_1 = V_2$$

Sorgailu baliokidea

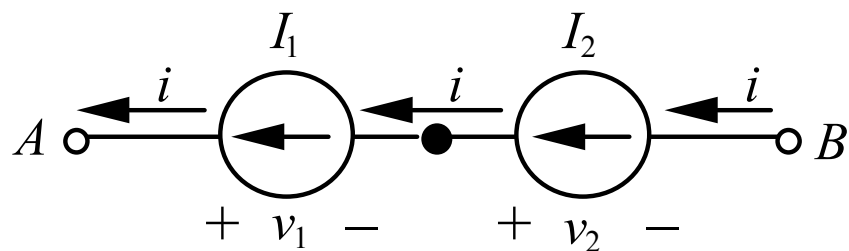


$$v_{AB} = V_{bp}$$

$$V_{bp} = V_i$$

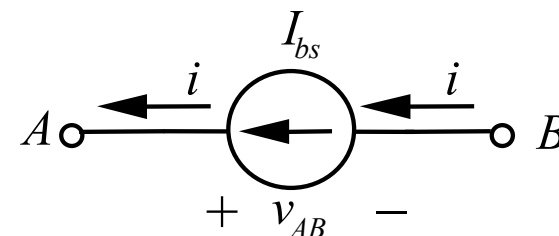
Korronte-sorgailuak seriean

Sorgailu baliokidea



$$i = I_1$$

$$i = I_2$$



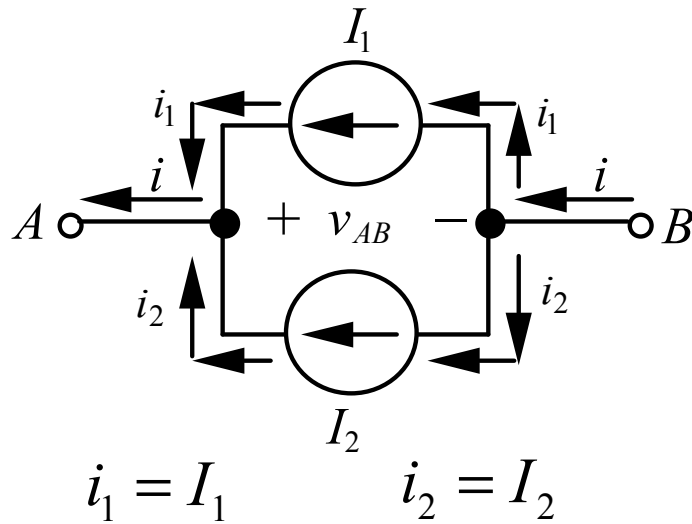
$$i = I_{bs}$$

Baldin $I_1 \neq I_2$ **EZINEZKOA**

$$I_{bs} = I_1 = I_2$$

$$I_{bs} = I_i$$

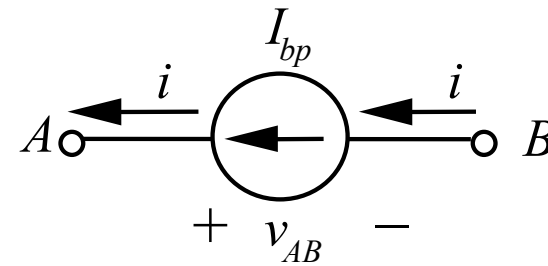
Korronte-sorgailuak paraleloan



$$i = I_1 + I_2$$

$$I_{bp} = I_1 + I_2$$

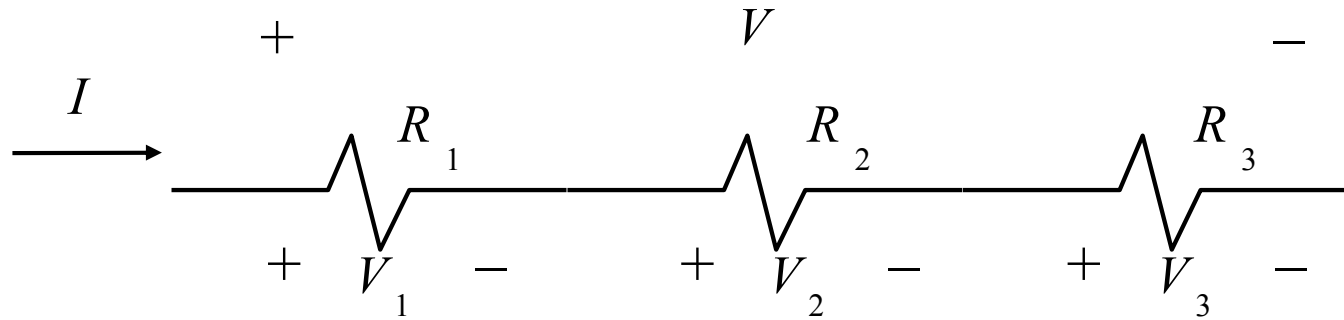
Sorgailu baliokidea



$$i = I_{bp}$$

$$I_{bp} = \sum_i I_i$$

Tentsio-zatitzailea



$$I = \frac{V}{R_1 + R_2 + R_3} = \frac{V}{R_{bs}}$$

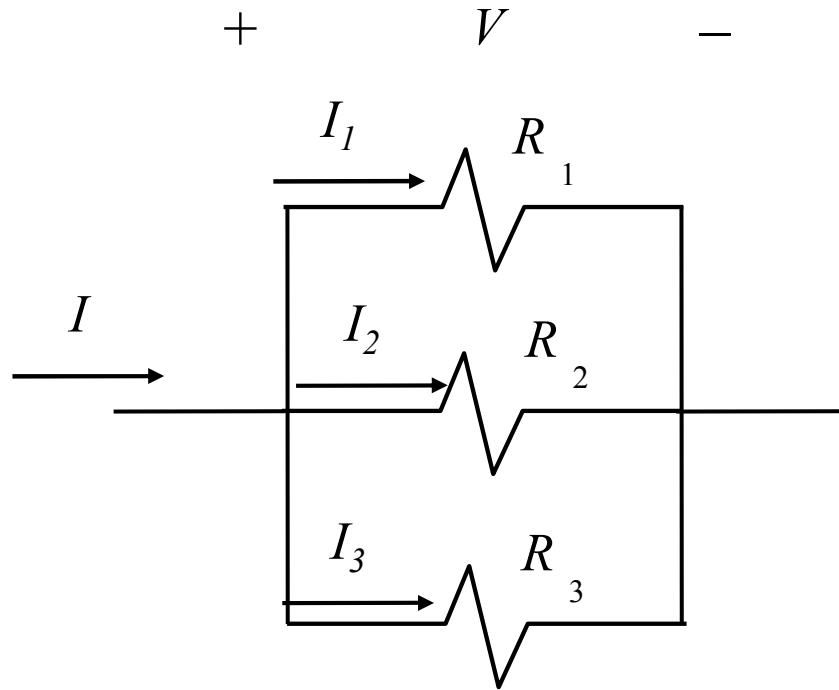
$$V_i = \frac{R_i}{R_{bs}} V$$

$$V_1 = \frac{R_1}{R_{bs}} V$$

$$V_2 = \frac{R_2}{R_{bs}} V$$

$$V_3 = \frac{R_3}{R_{bs}} V$$

Korronte-zatitzailea



$$V = R_{bp} I$$

$$I_1 = \frac{V}{R_1} = \frac{R_{bp}}{R_1} I$$

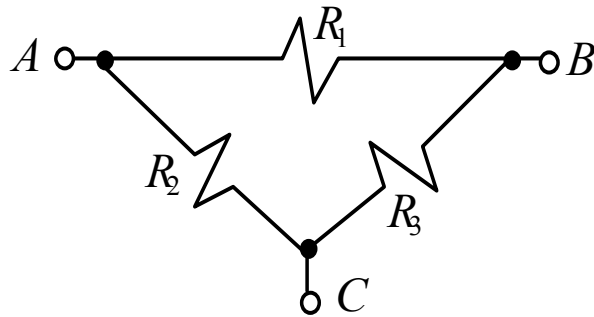
$$I_2 = \frac{V}{R_2} = \frac{R_{bp}}{R_2} I$$

$$I_i = \frac{V}{R_i} = \frac{R_{bp}}{R_i} I$$

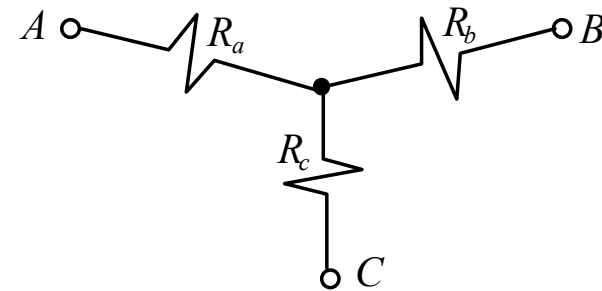
$$I_3 = \frac{V}{R_3} = \frac{R_{bp}}{R_3} I$$

Erresistentziak: izar-triangelu bihurketa

Triangelu-elkarketa

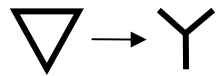


Izar-elkarketa

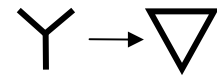


$$R_a = \frac{R_1 \cdot R_2}{R_1 + R_2 + R_3}$$

$$R_1 = \frac{R_a R_b + R_a R_c + R_b R_c}{R_c}$$



$$R_b = \frac{R_1 \cdot R_3}{R_1 + R_2 + R_3}$$



$$R_2 = \frac{R_a R_b + R_a R_c + R_b R_c}{R_b}$$

$$R_c = \frac{R_2 \cdot R_3}{R_1 + R_2 + R_3}$$

$$R_3 = \frac{R_a R_b + R_a R_c + R_b R_c}{R_a}$$