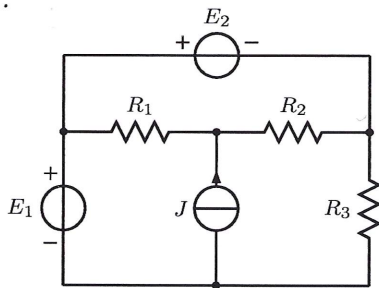


1.

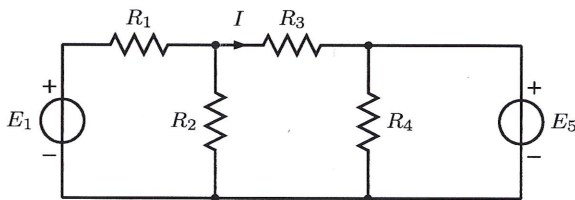


Laske kerrostamismenetelmällä vastuksessa R_1 lämmöksi muuttuva teho P_{R_1} .

$$E_1 = 1 \text{ V} \quad E_2 = 2 \text{ V} \quad J = 3 \text{ A}$$

$$R_1 = 3 \ \Omega \quad R_2 = 2 \ \Omega \quad R_3 = 4 \ \Omega.$$

2.

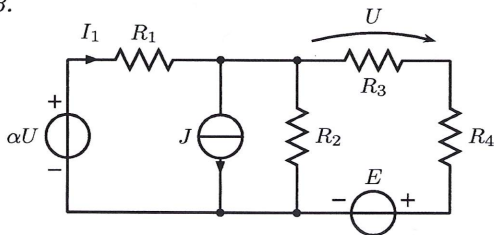


Laske Théveninin menetelmällä vastuksen R_3 läpi kulkeva virta I .

$$E_1 = 5 \text{ V} \quad E_5 = 3 \text{ V} \quad R_1 = 1 \ \Omega$$

$$R_2 = 2 \ \Omega \quad R_3 = 3 \ \Omega \quad R_4 = 4 \ \Omega.$$

3.



Laske piirin virta I_1 .

$$E = 2 \text{ V} \quad J = 1 \text{ A} \quad \alpha = 2$$

$$R_1 = 1 \ \Omega \quad R_2 = 2 \ \Omega \quad R_3 = 3 \ \Omega$$

$$R_4 = 1 \ \Omega.$$