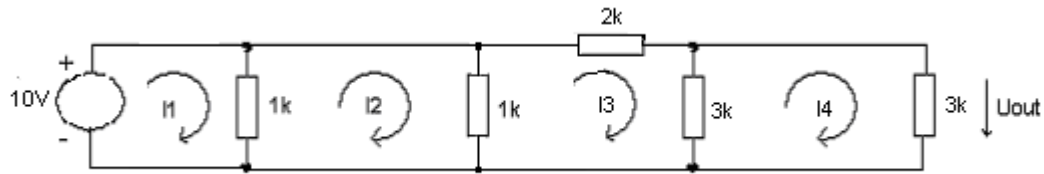


Example



4 loops gives 4 equations:

$$10 = 10^3 (I_1 - I_2)$$

$$0 = 10^3 (I_2 - I_1) + 10^3 (I_2 - I_3)$$

$$0 = 2 \cdot 10^3 I_3 + 3 \cdot 10^3 (I_3 - I_4) + 10^3 (I_3 - I_2)$$

$$0 = 3 \cdot 10^3 I_4 + 3 \cdot 10^3 (I_4 - I_3)$$

$$\begin{vmatrix} 1000 & -1000 & 0 & 0 \\ -1000 & 2000 & -1000 & 0 \\ 0 & -1000 & 6000 & -3000 \\ 0 & 0 & -3000 & 6000 \end{vmatrix} = 2.1E+13$$

$$\begin{vmatrix} 1000 & -1000 & 0 & 10 \\ -1000 & 2000 & -1000 & 0 \\ 0 & -1000 & 6000 & 0 \\ 0 & 0 & -3000 & 0 \end{vmatrix} = 3.00E+10$$

Result is

$$I_4 = 3.00E+10 / 2.1E+13 = 0.001429 \text{ [A]}$$

$$U_{out} = 3 \cdot 10^3 \cdot 0.001429 = 4.285714 \text{ [V]}$$