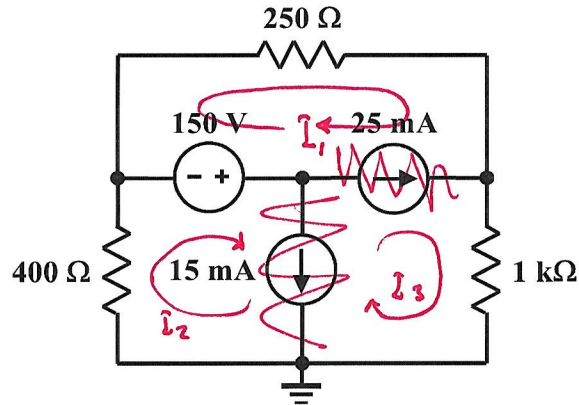


EE 2240
Homework Problem #028

Define mesh currents and express the mesh equations in the matrix form discussed in class.



Do not attempt to solve the equations.

$$I_3 - I_1 = 25 \text{ mA} \quad (\text{constraint})$$

$$I_2 - I_3 = 15 \text{ mA} \quad (\text{constraint})$$

$$250 I_1 + 1000 I_3 + 400 I_2 = 0 \quad (\text{KCL for the supermesh})$$

In matrix form:

$$\begin{bmatrix} -1 & 0 & 1 \\ 0 & 1 & -1 \\ 250 & 400 & 1000 \end{bmatrix} \begin{bmatrix} I_1 \\ I_2 \\ I_3 \end{bmatrix} = \begin{bmatrix} .025 \\ .015 \\ 0 \end{bmatrix}$$