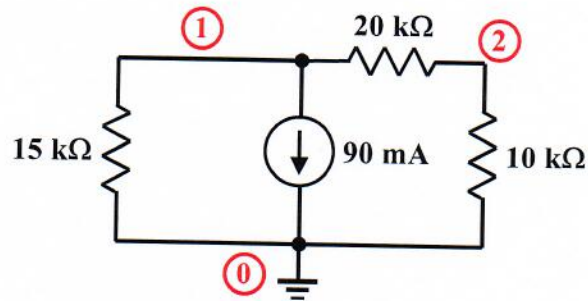


EE/EET 2240
Homework Problem #010

Develop node equations and express them in the matrix form discussed in class.



$$\frac{V_1}{15000} + 0.09 + \frac{V_1 - V_2}{20000} = 0 \quad (\text{KCL for node 1})$$

$$\frac{V_2 - V_1}{20000} + \frac{V_2}{10000} = 0 \quad (\text{KCL for node 2})$$

In matrix form:

$$\begin{bmatrix} \frac{7}{60000} & -\frac{1}{20000} \\ -\frac{1}{20000} & \frac{3}{20000} \end{bmatrix} \begin{bmatrix} V_1 \\ V_2 \end{bmatrix} = \begin{bmatrix} -0.09 \\ 0 \end{bmatrix}$$