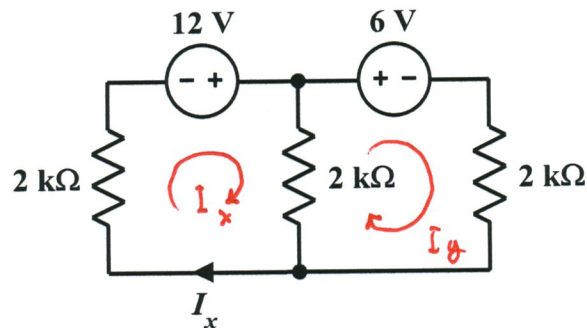


EE 2240
Problem #02



- a. How many equations are necessary to analyze this circuit by the mesh analysis method?

2

Use the method discussed in class to:

- b. Develop the mesh equations describing the circuit.

$$2000 I_x - 12 + 2000 (I_x - I_y) = 0$$

$$2000 (I_y - I_x) + 6 + 2000 I_y = 0$$

- c. Write the mesh equations in the matrix form discussed in class.

$$\begin{bmatrix} 4000 & -2000 \\ -2000 & 4000 \end{bmatrix} \begin{bmatrix} I_x \\ I_y \end{bmatrix} = \begin{bmatrix} 12 \\ -6 \end{bmatrix}$$

- d. Solve the mesh equations to determine the value of I_x .

$$I_x = 3 \text{ mA}$$