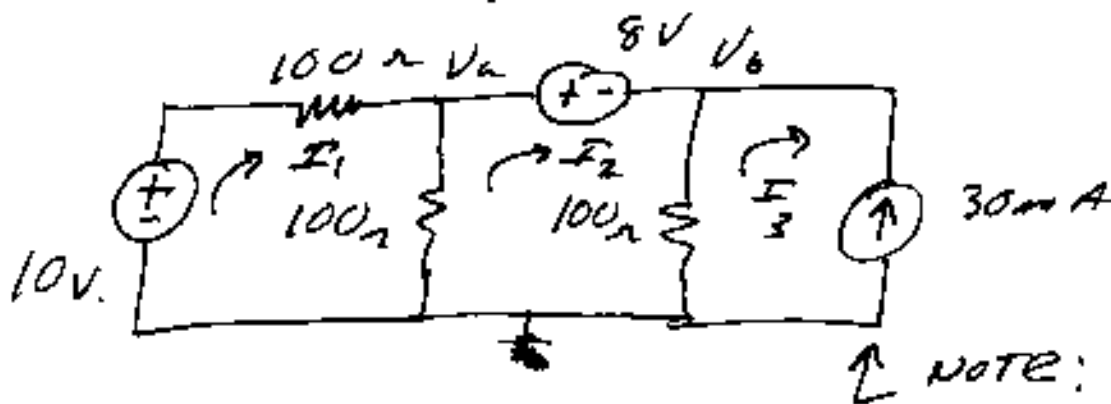


# MESH ANALYSIS - EXAMPLES

## 1) P4.4-3 Using Mesh Analysis



NOTE:  
The 30mA current source is in an isolated branch.  
Therefore  $I_3 = -30\text{mA}$

Mesh 1.

$$-10 + I_1/100 + 100[I_1 - I_2] = 0$$

Mesh 2.

$$8 + 100[I_2 - (-30\text{mA})] + 100[I_2 - I_1] = 0$$

Simplify:

$$(1) \quad 200I_1 - 100I_2 = 10$$

$$(2) \quad -I_1(100) + 200I_2 = -11$$

$$\begin{bmatrix} 200 & -100 \\ -100 & 200 \end{bmatrix} \begin{bmatrix} I_1 \\ I_2 \end{bmatrix} = \begin{bmatrix} 10 \\ -11 \end{bmatrix} \quad \begin{array}{l} I_1 = .03 \text{ A} \\ I_2 = -.04 \text{ A} \end{array}$$

$$I_1 = 30\text{mA} \quad I_2 = -40\text{mA}$$