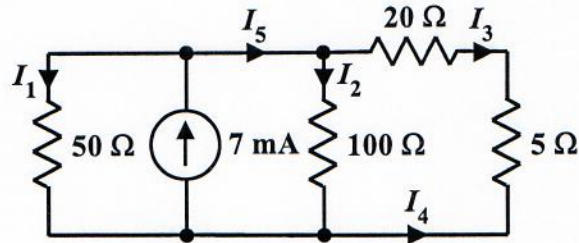


EE/EET 2240  
**Homework Problem #009**



- a. Use the current divider equation to determine  $I_1$ .

$$I_1 = \frac{\frac{1}{50\Omega}}{\frac{1}{50\Omega} + \frac{1}{100\Omega} + \frac{1}{20\Omega + 5\Omega}} \cdot 7\text{mA} = 2\text{mA}$$

- b. Use the current divider equation to determine  $I_2$ .

$$I_2 = \frac{\frac{1}{100\Omega}}{\frac{1}{50\Omega} + \frac{1}{100\Omega} + \frac{1}{20\Omega + 5\Omega}} \cdot 7\text{mA} = 1\text{mA}$$

- c. Use the current divider equation to determine  $I_3$ .

$$I_3 = \frac{\frac{1}{20\Omega + 5\Omega}}{\frac{1}{50\Omega} + \frac{1}{100\Omega} + \frac{1}{20\Omega + 5\Omega}} \cdot 7\text{mA} = 4\text{mA}$$

- d. Determine the value of  $I_4$ .

$$I_4 = -I_3 = -4\text{mA}$$

- e. Determine the value of  $I_5$ .

$$I_5 = 7\text{mA} - I_1 = 5\text{mA}$$

OR

$$I_5 = I_2 + I_3 = 5\text{mA}$$