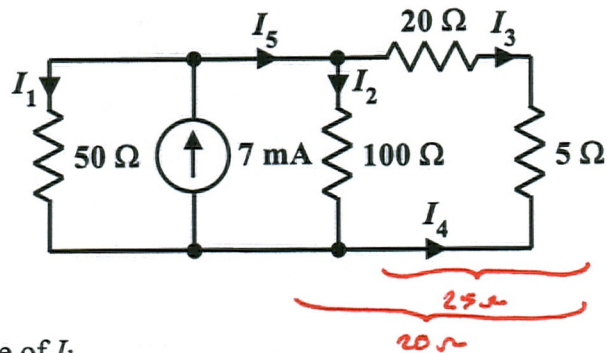


Homework Problem #06



a. Determine the value of  $I_1$ .

$$I_1 = \frac{20\Omega}{70\Omega} \cdot 7\text{mA} = 2\text{mA}$$

b. Determine the value of  $I_2$ .

$$I_2 = \frac{\frac{1}{100\Omega}}{\frac{1}{50\Omega} + \frac{1}{100\Omega} + \frac{1}{25\Omega}} \cdot 7\text{mA} = 1\text{mA}$$

c. Determine the value of  $I_3$ .

$$I_3 = \frac{\frac{1}{25\Omega}}{\frac{1}{50\Omega} + \frac{1}{100\Omega} + \frac{1}{25\Omega}} \cdot 7\text{mA} = 4\text{mA}$$

d. Determine the value of  $I_4$ .

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

e. Determine the value of  $I_5$ .

$$I_5 = I_2 + I_3 = 1\text{mA} + 4\text{mA} = 5\text{mA}$$

$$\text{OR } I_5 = \frac{\frac{1}{20\Omega}}{\frac{1}{50\Omega} + \frac{1}{20\Omega}} \cdot 7\text{mA} = 5\text{mA}$$