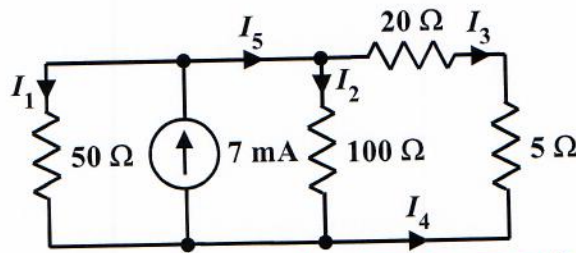


EE/EET 2240
Homework Problem #009



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

$$R_{eq} = 100\Omega \parallel (20\Omega + 5\Omega) = 20\Omega$$

$$I_1 = \frac{R_{eq}}{50\Omega + R_{eq}} \cdot 7\text{mA} = \frac{20}{70} \cdot 7 = 2\text{mA}$$

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

$$I_2 = \frac{25\Omega}{100\Omega + 25\Omega} \cdot I_5 = \frac{25}{125} \cdot 5\text{mA} = 1\text{mA}$$

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

$$I_3 = \frac{100\Omega}{100\Omega + 25\Omega} \cdot I_5 = \frac{100}{125} \cdot 5\text{mA} = 4\text{mA}$$

- d. Determine the value of I_4 .

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

- e. Determine the value of I_5 .

$$I_5 = 7\text{mA} - I_1 = 7 - 2 = 5\text{mA}$$