

Elements of Engineering II [ENGG 112]

Time: 50 minutes

Attempt All the questions.

1. For the circuit of Fig. 1, determine the value for the voltage labeled v . [2]

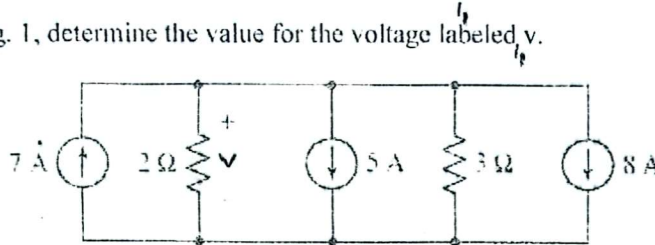


Fig. 1

2. In order to determine the current labeled i_x in Fig. 2., Would nodal or mesh analysis be more convenient and why? Further, determine the numerical value of current i_x using your preferred method to support your answer. [5]

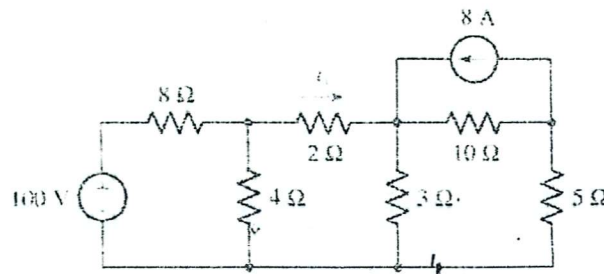


Fig. 2

3. For the circuit of Fig. 3: (a) Employ Norton's theorem to reduce the network connected to R_L to only two components. (b) Calculate the downward directed current flowing through R_L if it is a 3.3 kΩ resistor. [5]

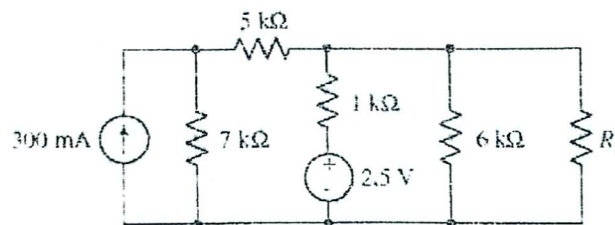


Fig. 3

4. A network is constructed from a series connection of five resistors having values 1Ω, 3Ω, 5Ω, 7Ω, and 9Ω. If 9 V is connected across the terminals of the network, employ voltage division to calculate the voltage across the 3Ω resistor, and the power dissipated by the 7Ω resistor. [3]

☺ GOOD LUCK ☺

3.08 V
 0.907500 W