Name:

ID :

PRINCIPLES OF EE1

Homework #2

Submission deadline: **October 09, 2024**

IMPORTANT: You should write on **A4 paper** that contains a full and detailed description of all the work done on the homework. Then you must submit the test hand-written by scanning and uploading the file in **pdf form (combined in one file only)** on Blackboard (Assignment Session). Marks will be deducted if there are sign of violation of regulation and late submission (20% for each day).

Tip: You draw a bounding box or highlight for your final answer. Ex: Y = ABC + AC = $\boxed{ABC}$

Problem 1: **(20 marks)**

Determine the current *I* in Figure 1.1 and Figure 1.2 using a Delta to Wye or Wye to Delta conversion,

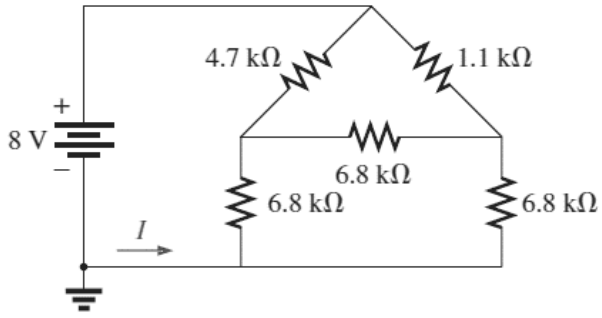

Figure 1.1

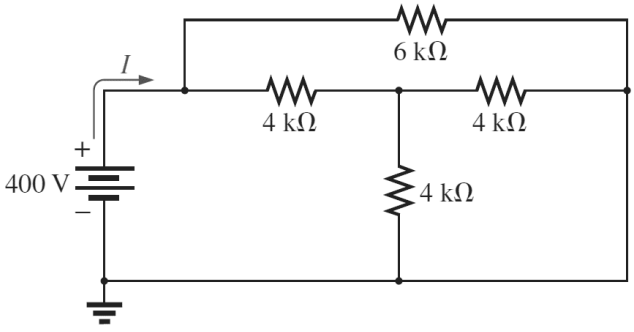

Figure 1.2

Problem 2: (20 marks)

Determine the currents for the configurations in

a/

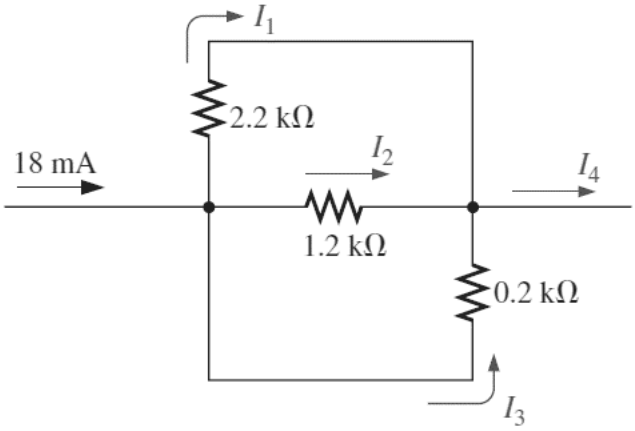

Figure 2.1

b/

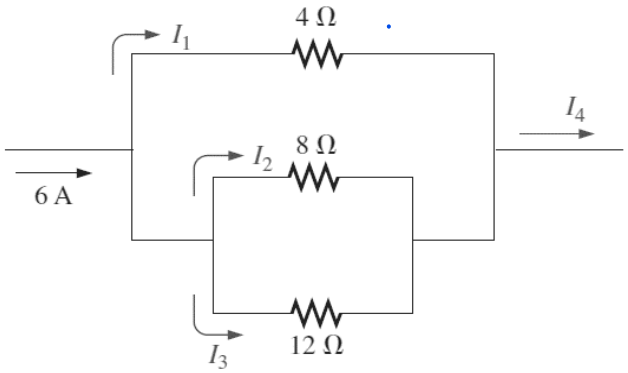

Figure 2.2

Problem 3: (20 marks)

Given the voltage divider supply in Figure 3, we determine:

a. The supply voltage E

b. The load resistors R_{L_2} and R_{L_3}

c. The resistors R_1, R_2 and R_3

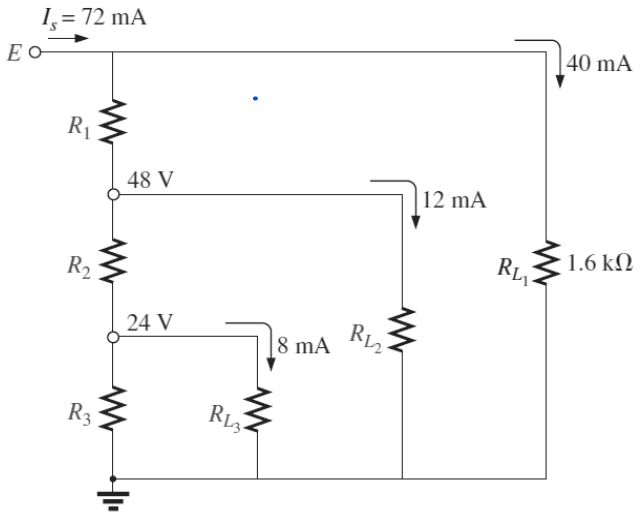

Figure 3

Problem 4: (20 marks)

Using the node voltage method to find:

a/ The power of the 8A source in Figure 4.1

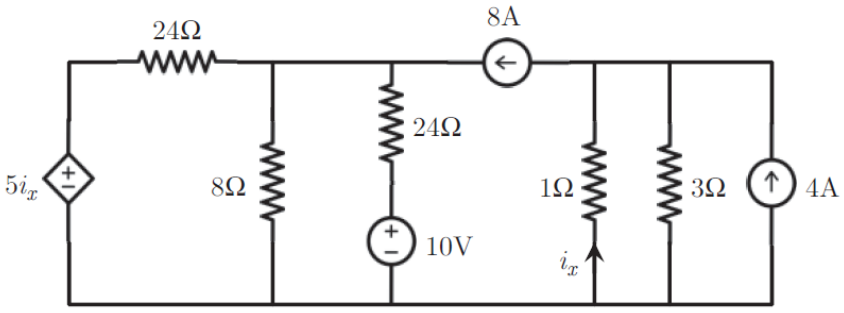

Figure 4.1

b/ The current i_z in Figure 4.2

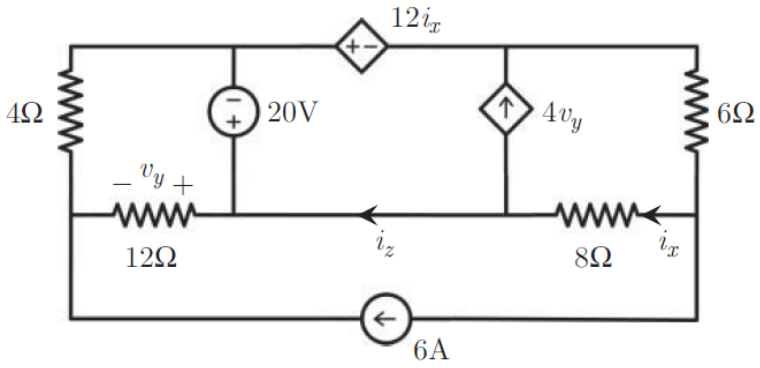

Figure 4.2

Problem 5: (20 marks)

Using mesh current method to determine:

a. The power of the 100V voltage source in Figure 5.1

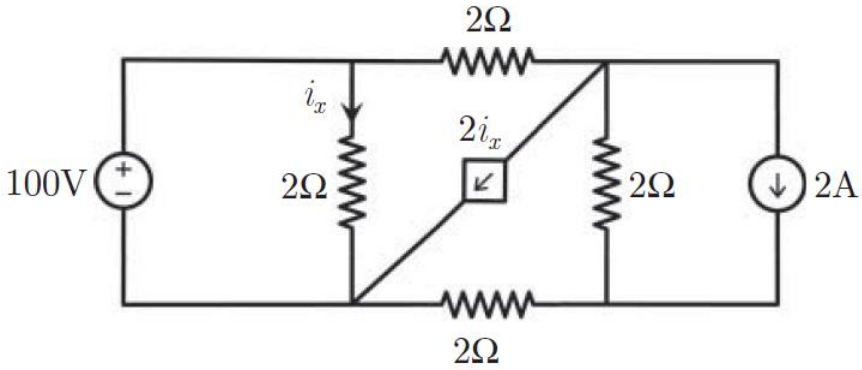

Figure 5.1

b. The value of i_x in Figure 5.2

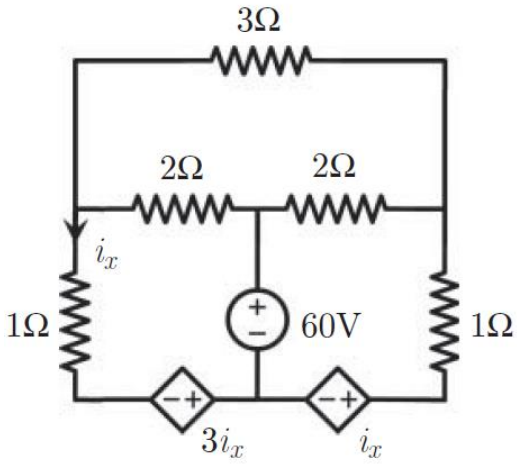

Figure 5.2