Name:

ID :

# PRINCIPLES OF EE1

## Homework #3 - Group 03

Submission deadline: October 19, 2020.

**IMPORTANT:** You should hand in a copy of your report that contains a full and detailed description of all the work done on the homework. Marks will be deducted if there are sign of violation of regulation and late submission (20% for each day). *You should print out this document and write down your solution directly on it.*

*Tip: You should draw a bounding box for your final answer. Ex: I = 2 + 4 =* $\boxed{6\ A}$

**Problem 1**: **(25 marks)**

Find the Norton equivalent with respect to the terminals **a**, **b** for the circuit in Fig. 1a.

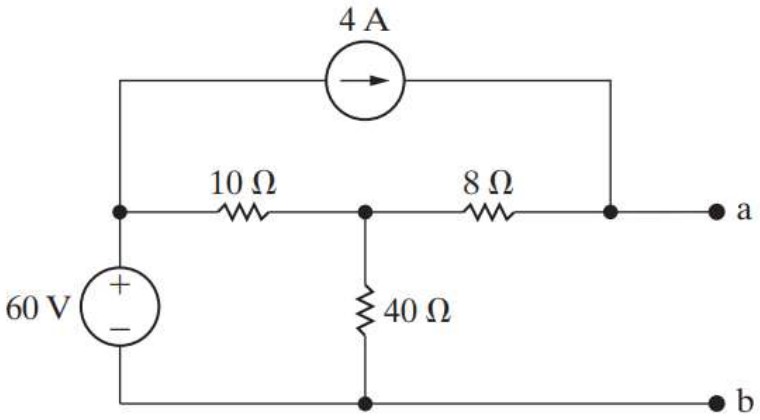



Fig. 1

**Solution:**

**Problem 2**: **(25 marks)**

Find the Thévenin equivalent with respect to the terminals a, b for the circuit in Fig. 2

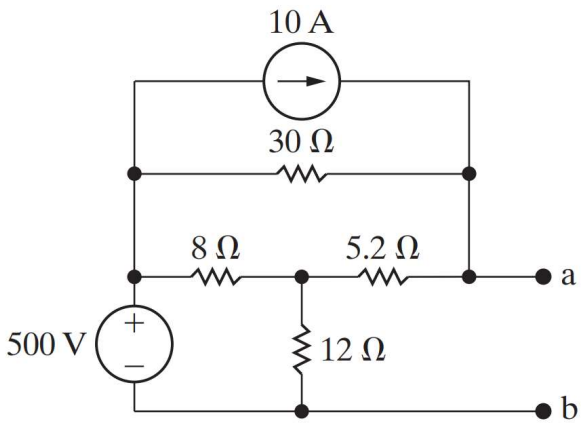



Fig. 2

**Solution:**

**Problem 3**: **(30 marks)**

Use the principle of superposition to find the voltage $v$ and the power dissipated in the $10\Omega$ in the circuit of Fig. 3

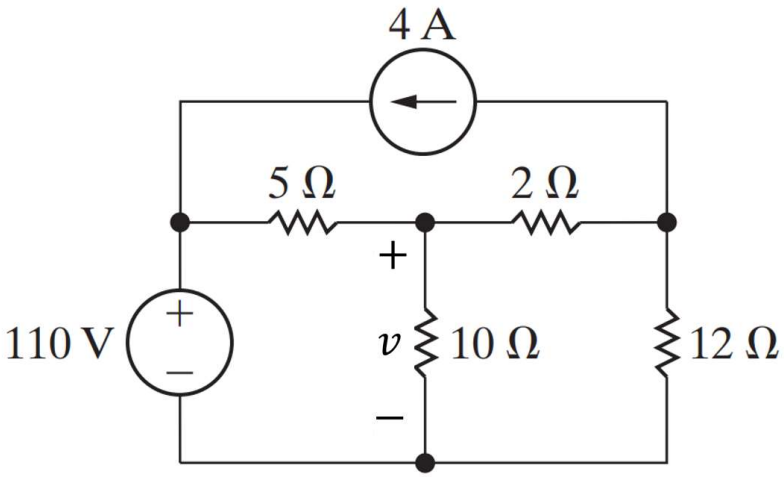
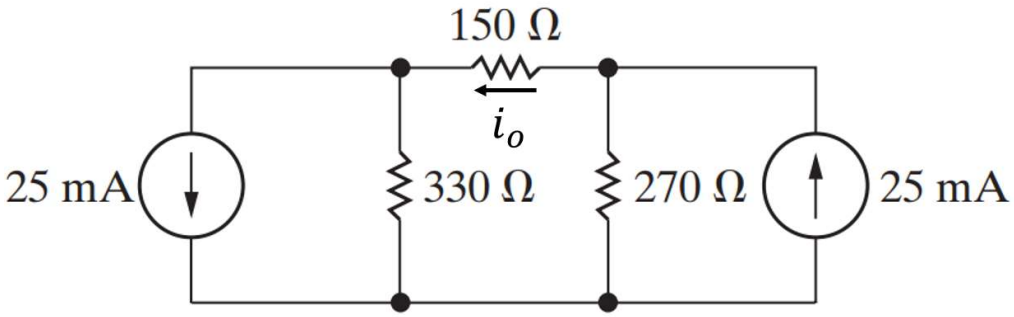



Fig. 3.

**Solution:**

**Problem 4**: **(20 marks)**

Make a series of source transformations to find the current $i_0$ in the circuit in Fig. 4




**Solution:**