Electric Circuits - Homework 01

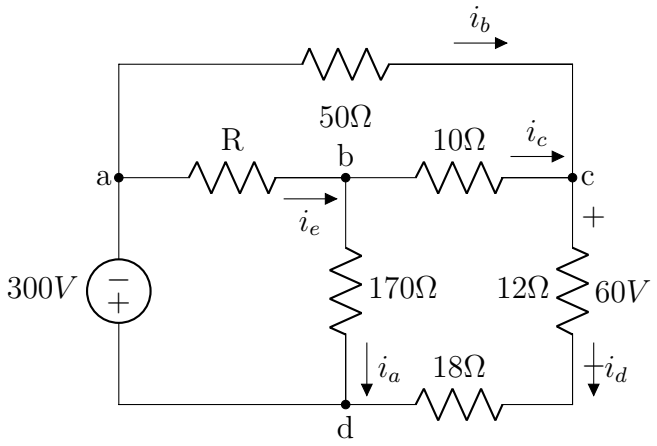
Automation Class 1802

(Due date: 2020/10/5)

This assignment covers Ch3 and Ch4.1-4.9 of the textbook. The full credit is 100 points. For each question, detailed derivation processes and accurate numbers are required to get full credit.

1. (10 points) Problem 3.8 of the textbook (p100), while the right resistor is change from 6 Ω to 9 Ω.

   ans:



2. (10 points) Problem 3.60 of the textbook (p107), while the voltage source is changed from 500 V to 900 V and the right resistor is changed from 27 Ω to 17 Ω.

3. (10 points) Problem 3.71 of the textbook (p109).

4. (15 points) Problem 4.27 of the textbook (p155), while the voltage source is changed from 24 V to 18 V and the voltage-controlled voltage source is changed for $5v_\Delta$ to $3v_\Delta$. Also calculate v_0 when the 33-ω resistor is climinated.

5. (20 points) Problem 4.38 of the textbook (p156), while the voltage source is changed from 135 V to 225 V. Also find the power extracted or dissipated by the current controlled voltage source.

6. (10 points) Problem 4.45 of the textbook (p157), while the current source is changed from 20 A to 160 A and the current-controlled voltage source is changed from $6.5i_\Delta$ to $8i_\Delta$.

7. (10 points) Problem 4.58 of the textbook (p158), while the top current source is changed from 4 A to 10 A.

8. (10 points) Problem 4.59 of the textbook (p159), while the right current source is changed from 0.6 mA to 1.2 mA.