

Sirindhorn International Institute of Technology
Thammasat University at Rangsit
School of Information, Computer and Communication Technology

ECS 203: Problem Set 2

Semester/Year: 2/2014

Course Title: Basic Electrical Engineering

Instructor: Asst. Prof. Dr. Prapun Suksompong (prapun@siit.tu.ac.th)

Course Web Site: <http://www2.siiit.tu.ac.th/prapun/ecs203/>

Due date: Jan 30, 5 PM

Instructions

1. Solve all problems. (5 pt)
2. ONE sub-question will be graded (5 pt). Of course, you do not know which part will be selected; so you should work carefully on all of them.
3. Late submission will be heavily penalized.
4. **Write down all the steps** that you have done to obtain your answers. You may not get full credit even when your answer is correct without showing how you get your answer.

Questions

- 1) [Alexander and Sadiku, 2009, PP2.2] For the circuit shown in Figure 1, calculate the voltage v and the power p (dissipated by the $10\text{k}\Omega$ resistor).

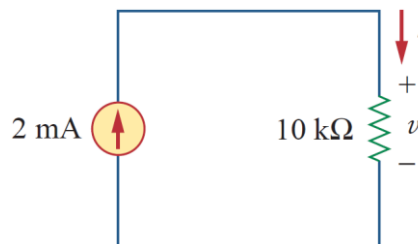


Figure 1

2) [Alexander and Sadiku, 2009, Q2.4]

a) Calculate current i in Figure 2 when the switch is in position 1.

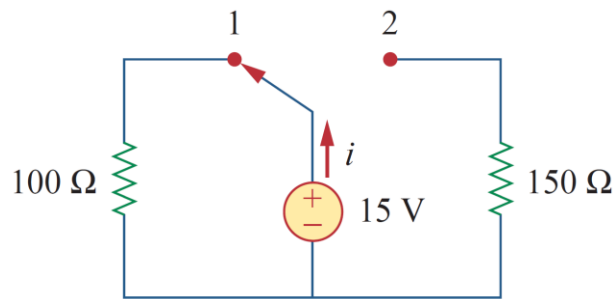


Figure 2

b) Find the current when the switch is in position 2.

3) [Alexander and Sadiku, 2009, Q2.7] Find the number of branches and nodes in each of the circuits of Figure 3.

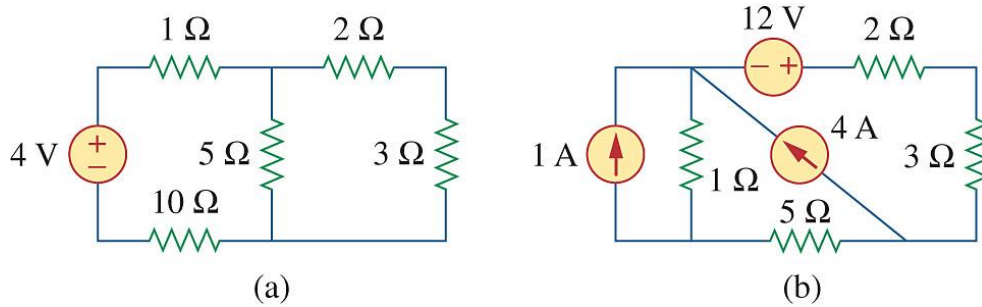


Figure 3

4) [Alexander and Sadiku, 2009, Q2.10] Determine i_1 and i_2 in the circuit of Figure 4.

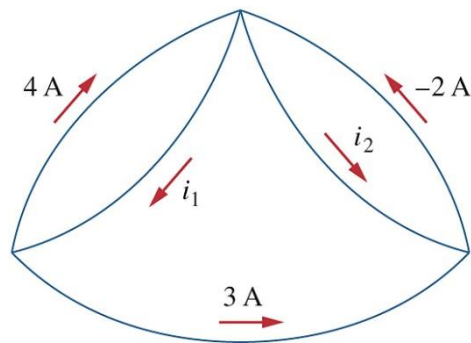


Figure 4

5) [Alexander and Sadiku, 2009, Q2.14] Given the circuit in Figure 5, use KVL to find the branch voltages V_1 to V_4 .

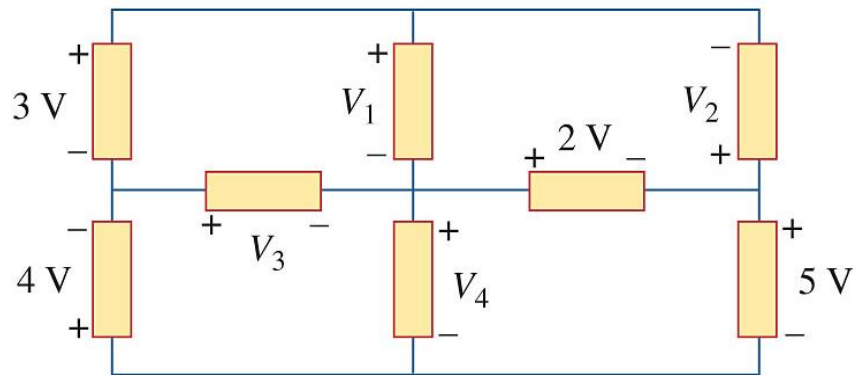


Figure 5