

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

ECS 203: Problem Set 3

Semester/Year: 2/2015

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: Feb 8, 5 PM

Instructions

1. Solve all problems. (5 pt)
 - a. Write your name and ID on the top of **every** submitted page.
 - b. For each part, write your explanation/derivation and answer in the space provided.
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. There is no need to submit (or even print out) page 1 (this cover sheet).
4. Late submission will be rejected.
5. **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) [Irwin and Nelms, 2015, Ex2.11] Consider the circuit in Figure 1. Apply KVL to determine (a) V_{ae} and (b) V_{ec} .

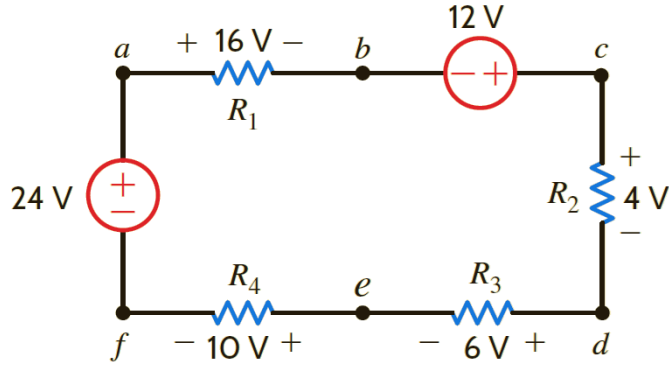


Figure 1

- 2) [Alexander and Sadiku, 2009, Q2.16] Determine V_o in the circuit in Figure 2.

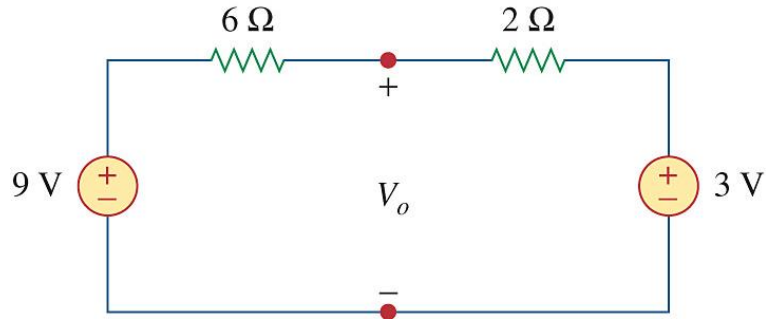


Figure 2

3) [Irwin and Nelms, 2015, E2.14] Find the equivalent resistance at the terminals A-B in the network in Fig. E2.14.

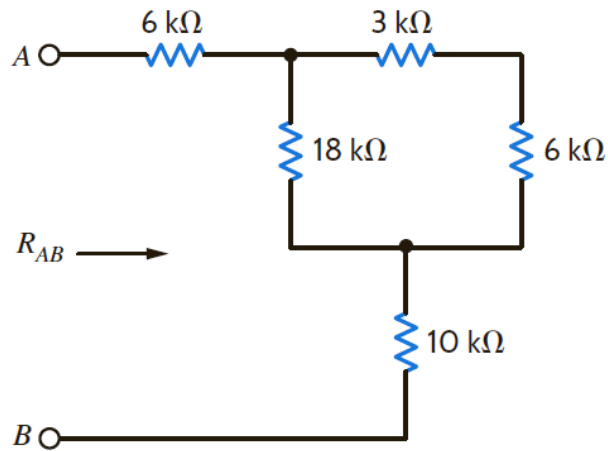


Figure 3

4) All resistors in Figure 4 are 5Ω each.

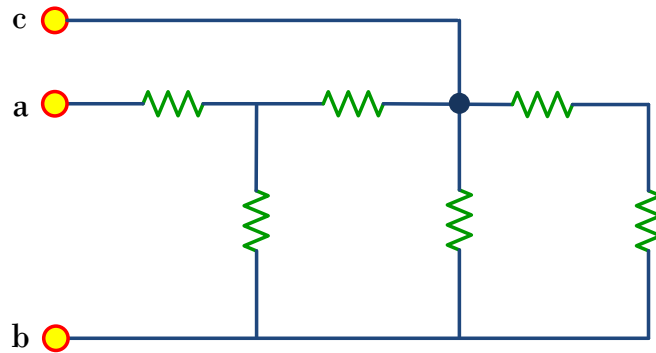


Figure 4

a) [Alexander and Sadiku, 2013, Q2.29]
Find R_{ab} . (This is the equivalent resistance with respect to terminals a-b.)

b) Find R_{bc} . (This is the equivalent resistance with respect to terminals b-c.)

5) [Alexander and Sadiku, 2009, Q2.32] Find i_1 through i_4 in the circuit in Figure 5.

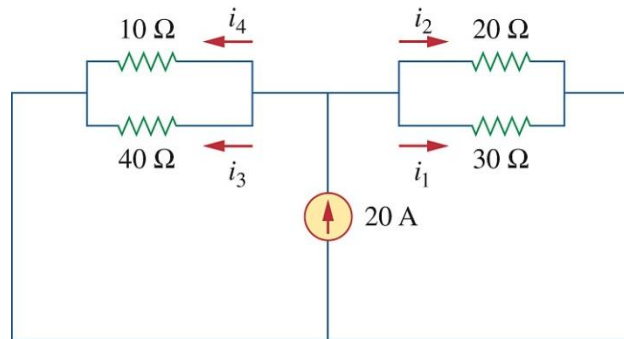


Figure 5