Sirindhorn International Institute of Technology

Thammasat University at Rangsit

School of Information, Computer and Communication Technology

ECS 203: Problem Set 5

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.siit.tu.ac.th/prapun/ecs203/

Due date: Feb 20, 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, Q4.6] For the linear circuit shown in Figure 1, use linearity to complete the following table.

Experiment	V_s	V_o
1	12 V	4 V
2		16 V
3	1 V	
4		-2 V

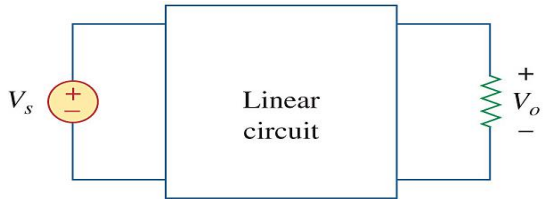

Figure 1

2) [Alexander and Sadiku, 2009, Q4.8] Using superposition, find V_o in the circuit of Figure 2.

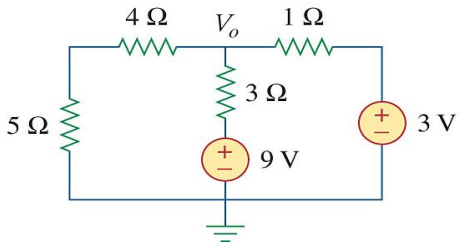

Figure 2

3) [Alexander and Sadiku, 2009, Q4.12] Determine v_o in the circuit in Figure 3 using the superposition principle.

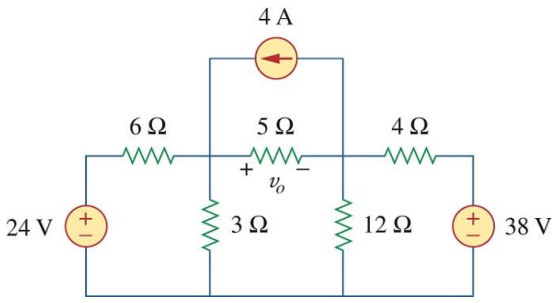

Figure 3

4) [Alexander and Sadiku, 2009, Q4.27] Apply **source transformation** to find v_x in the circuit of Figure 4.

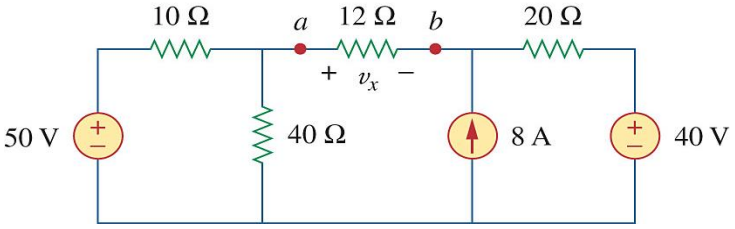

Figure 4

5) [Alexander and Sadiku, 2009, Q4.22] For the circuit in Figure 5, use **source transformation** to find *i*.

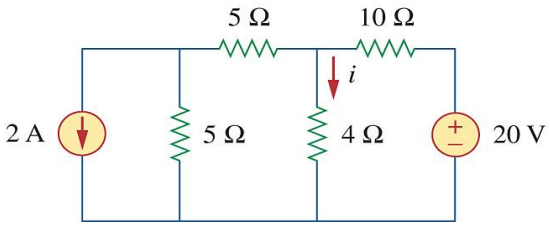

Figure 5