Sirindhorn International Institute of Technology

Thammasat University at Rangsit

School of Information, Computer and Communication Technology

ECS 203: Problem Set 3

Due date: Feb 6, 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, Q2.16] Determine V_o in the circuit in Figure 1.
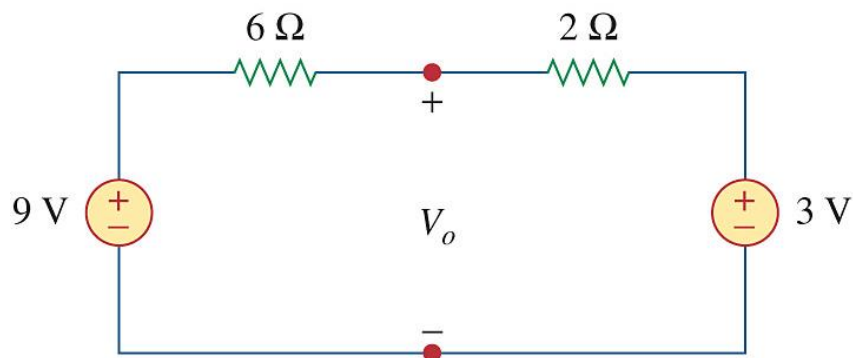

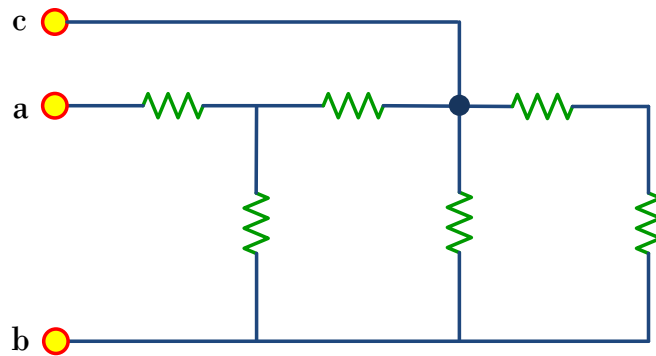Figure 1

2) All resistors in Figure 2 are 5Ω each.

Figure 2

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.)

3) [Alexander and Sadiku, 2009, Q2.32] Find i_1 through i_4 in the circuit in Figure 3.
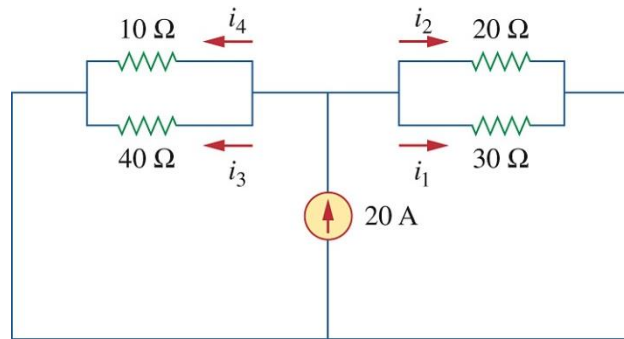

Figure 3

4) [Irwin Nelms, 2011, E3.7] Use nodal analysis to find V_0 and then the current I_0 in the circuit in Figure 4. (Note that the reference node is specified for you already in the figure.)
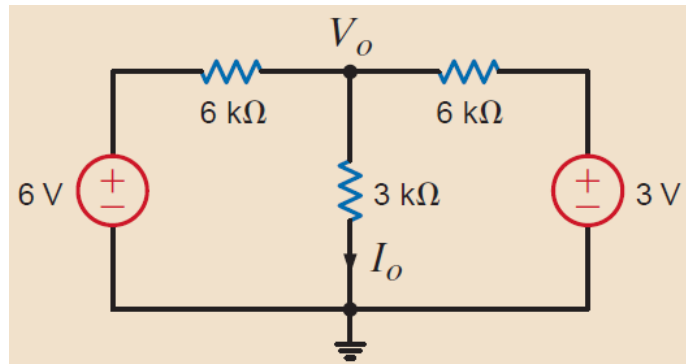

Figure 4