

GEORGIA INSTITUTE OF TECHNOLOGY
School of Electrical and Computer Engineering

ECE 2040
Circuit Analysis

Quiz #2

Monday, February 19, 2001

Name: _____

GENERAL INSTRUCTIONS

1. This is a *closed book, closed notes* exam. You may use a calculator if you choose.
2. Please do all of your work on the exam itself. You may use the backs of the pages, if necessary.
3. Please be as neat and well organized as possible.
4. Clearly indicate your answers.

<i>Problem</i>	<i>Max</i>	<i>Score</i>
1	25	
2	25	
3	25	
4	25	
Total	100	

Problem Q2.1: Determine the two node potentials $e_n(t)$ and $e_h(t)$ in the circuit of Figure 1 as functions of $v_{x_1}(t)$ and $v_{x_2}(t)$.

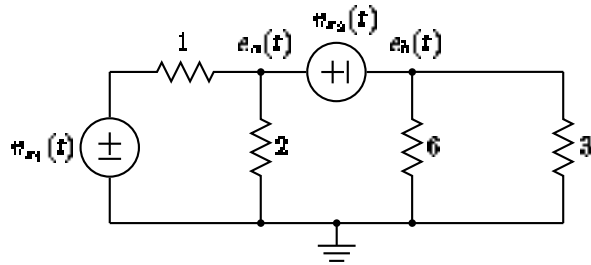
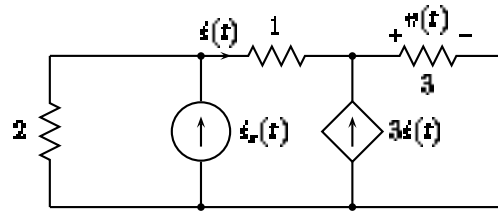
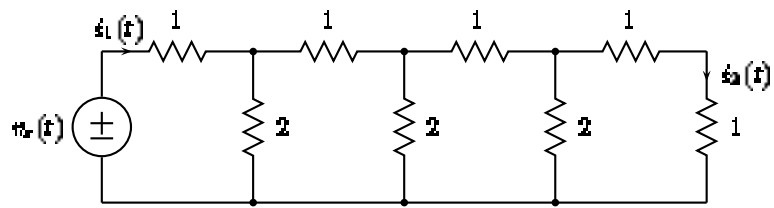


Figure 1: Circuit for Problem Q2.1.

Problem Q2.2: Determine the voltage $v(t)$ and the current $i(t)$ in the following circuit.

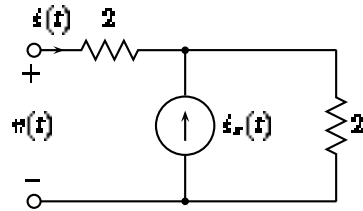


Problem Q2.3:



- (a) Determine $i_1(t)$ (in terms of $v_r(t)$) for the above circuit.
- (b) Determine $i_2(t)$ (in terms of $v_r(t)$).

Problem Q2.4:



- (a) Find the $v - i$ relation for the two-terminal network above.
- (b) Find and sketch the Norton equivalent network that has the same $v - i$ relation.