

**KING FAHD UNIVERSITY OF PETROLEUM & MINERALS**  
**ELECTRICAL ENGINEERING DEPARTMENT**  
**SECOND SEMESTER 2009-2010 (092)**



<b>Course Title:</b>	<b>Electric Circuits I</b>
<b>Course Number:</b>	<b>EE 201</b>

<b>Exam Type:</b>	<b>MAJOR EXAM I</b>
<b>Date:</b>	<b>March 24, 2010</b>
<b>Time:</b>	<b>07:00 pm – 8:30 pm (1 &amp; 1/2 hours)</b>

**Student Name:** \_\_\_\_\_

**Student ID:** \_\_\_\_\_

**Section:** \_\_\_\_\_

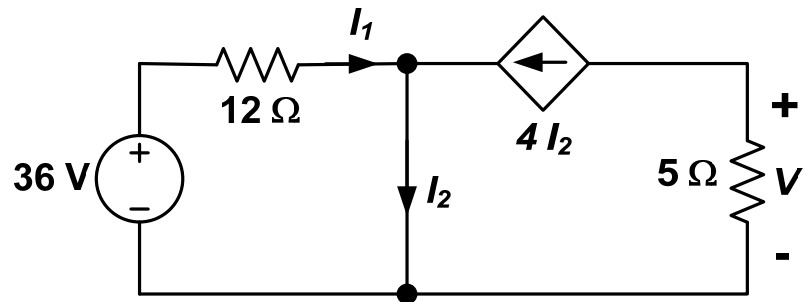
**Serial Number:** \_\_\_\_\_

<b>GRADING</b>		
<b>Question 1</b>	<b>6</b>	
<b>Question 2</b>	<b>6</b>	
<b>Question 3</b>	<b>9</b>	
<b>Question 4</b>	<b>9</b>	
<b>Total:</b>	<b>30</b>	

Be neat, organized, and show all your work and results.

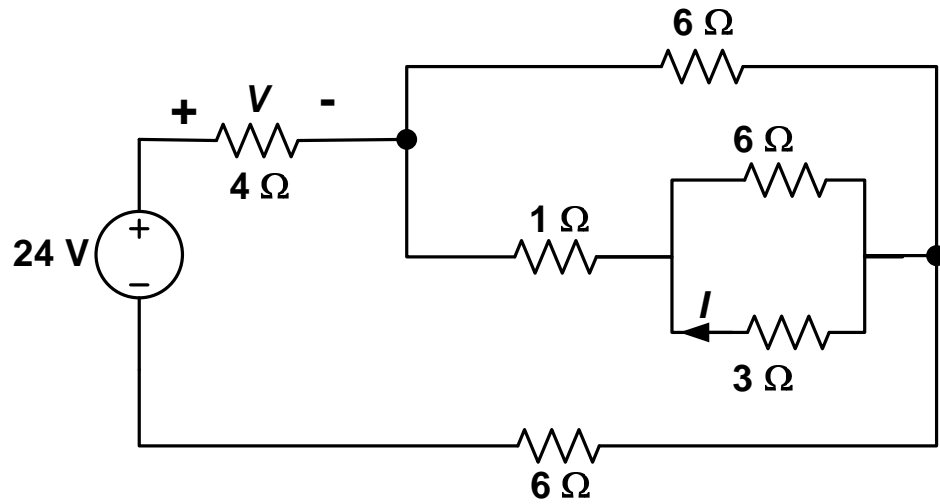
**Question 1:**

- a) Use Ohm's law and Kirchhoff's laws to find the voltage  $V$ .  
b) What is the power **absorbed by** the dependent current source.



**Question 2:**

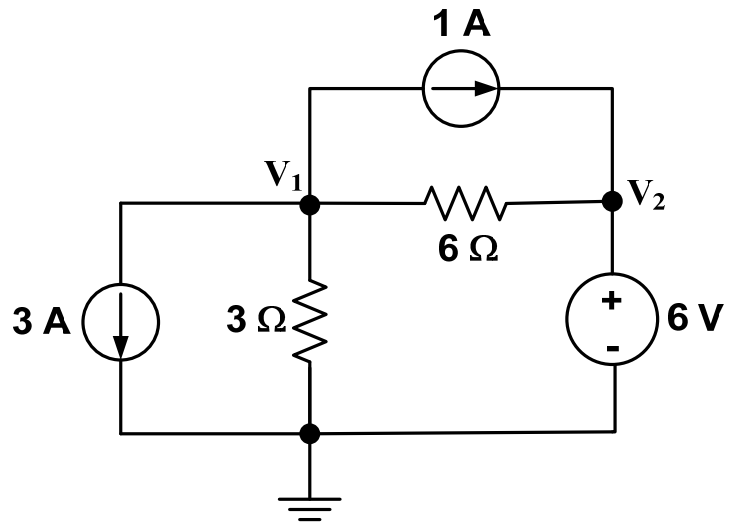
- a) Use voltage division to determine the voltage  $V$  across the  $4\Omega$  resistor.
- b) Use  $V$  from part (a) to find the current through the  $4\Omega$  resistor, and use this current and current division to find the current  $I$  in the  $3\Omega$  resistor.



**Question 3:**

Use the nodal analysis for the circuit shown below with the indicated reference node to obtain:

- a) The node voltages  $V_1$  and  $V_2$ .
- b) The power delivered by the 6 volt voltage source.



**Question 4:**

Use Mesh analysis for the circuit shown below to obtain:

- a) The mesh currents  $I_1$  and  $I_2$ .
- b) The power **delivered by** the 120 volt voltage source.

