

CASE WESTERN RESERVE UNIVERSITY
 Case School of Engineering
 Department of Electrical Engineering and Computer Science
ENGR 210. Introduction to Circuits and Instruments (4)

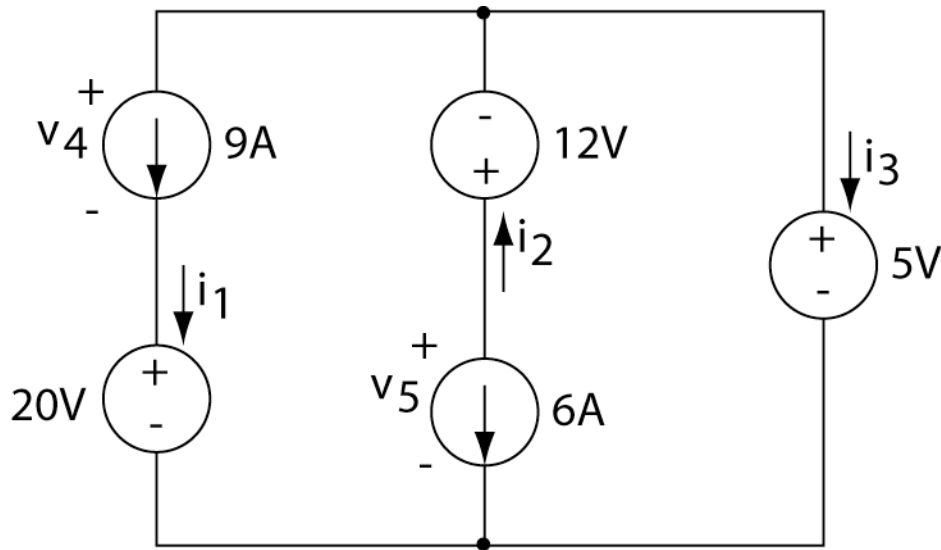
Quiz No. 2

1/28/05

PUT ANSWERS IN THE SPACE PROVIDED AND SHOW YOUR WORK IF APPROPRIATE

Problem 1 (10 points) – CONNECTION CONSTRAINTS

Answer the following questions for the circuit below. Be sure to follow the sign conventions indicated.



(a) Determine the indicated currents through the voltage sources.

$i_1 =$ _____ amperes

$i_2 =$ _____ amperes

(b) What is the current through the 5 volt voltage source.

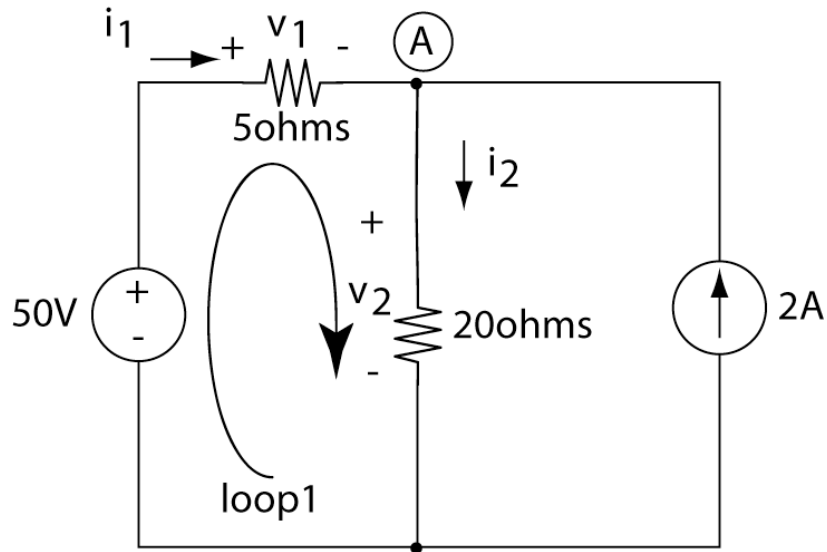
$i_3 =$ _____ amperes

(c) What is the voltage across each current source?

$v_4 =$ _____ volts

$v_5 =$ _____ volts

Problem 2 (10 points) COMBINED CONSTRAINTS



(a) How many nodes are in the above circuit? # nodes = _____

(b) Write the Kirchoff's Current Law equation for all the currents at node A. Your answer should be in terms of given circuit parameters, i.e., i_1 , i_2 , etc.

(c) Write the Kirchoff's Voltage Law equation for loop 1. Your answer should be in terms of given circuit parameters, i.e., i_1 , i_2 , etc.

(d) What are the values of i_1 and i_2 ?

i_1 = _____ amperes

i_2 = _____ amperes