

MEMS 0031 - Electrical Circuits

Quiz #1

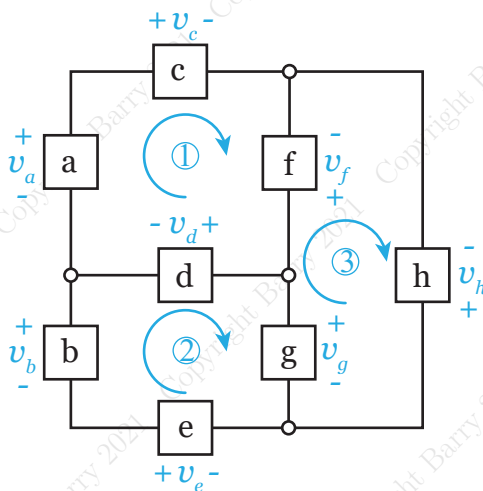
Assigned: February 8th, 2021

Due: February 12th, 2021, 9:00 pm

Name: _____

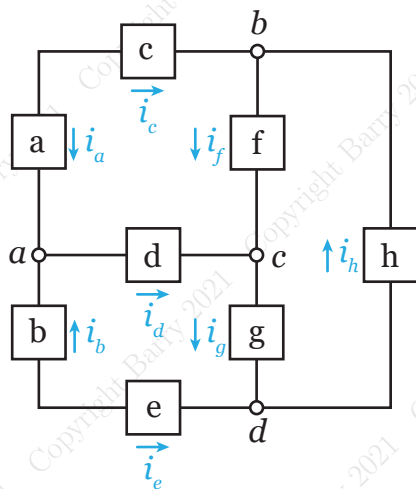
Intermediate Problem #1

(1 pt) Using Kirchhoff's Voltage Law, construct equations for Loops ① through ③:



Intermediate Problem #2

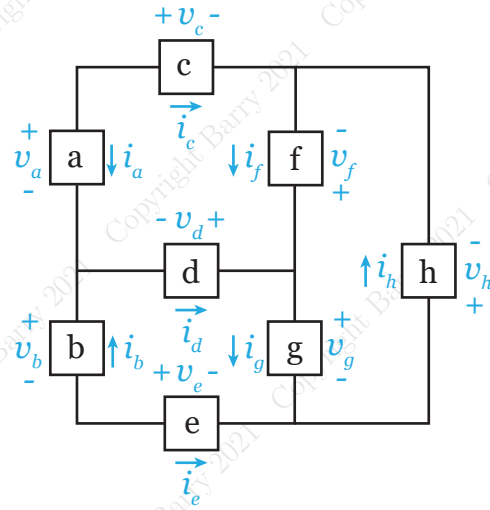
(1 pt) Using Kirchhoff's Current Law, construct equations for nodes *a* through *d*:



Intermediate Problem #3

(1 pt) Consider the following circuit, with listed voltage potential and current values. Using the principle of conservation of electrical energy, determine which value, either current or voltage, that is incorrect for the circuit shown below.

	[V]	[A]
a	120	-10
b	120	9
c	10	10
d	10	1
e	-10	-9
f	-100	5
g	120	4
h	-220	-5



Challenge Problem #1

(2 pt) Based upon the results obtained from Intermediate Problem #3, and the equations cast in Intermediate Problems #1 and #2, ensure all KVL, KCL and conservation equations are satisfied.

Academic Integrity Statement:

I hereby attest that I have received no assistance (from a friend, from another student, from an on-line resource, such as Chegg, etc.), and that I have provided no assistance to another student, during this exam. All the work presented within is solely my own work.

Signature: _____

Date: _____