COLLEGE OF ENGINEERING AND MINES
DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

COURSE CODE	EE F102 F01 (CRN: 34544)
COURSE NAME	INTRODUCTION TO ELECTRICAL AND COMPUTER ENGINEERING
SEMESTER	SPRING
YEAR	2022
TYPE AND NUMBER OF SUBMISSION	HOMEWORK 3
METHOD OF SUBMISSION	ONLINE TO : maher.albadri@alaska.edu
DATE OF ASSIGNMENT	THURSDAY 27 JAN 2022

DUE DATE OF SUBMISSION	FRIDAY 04 FEB 2022	**DUE TIME OF SUBMISSION**	23:59

STUDENT NAME	

MAKE THIS FORM A "COVER PAGE" FOR YOUR HOMEWORK SUBMISSION.

FOR THE TA USE ONLY

REMARKS:

FOR THE TA USE ONLY		
PROBLEM NUMBER	**MAXIMUM POINTS POSSIBLE**	**POINTS EARNED**
PROBLEM 1	50	
PROBLEM 2	50	
PROBLEM 3	50	
TOTAL	150	

Problem HW-3-1 Points Distribution
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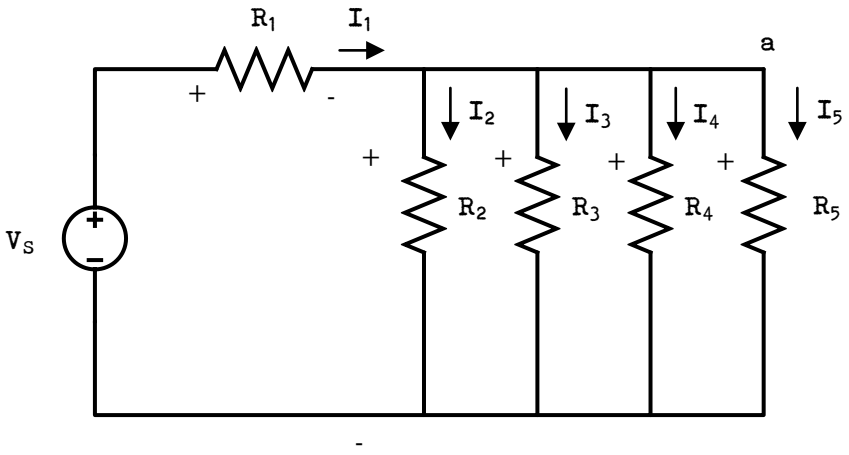
For the circuit shown, measurements are conducted and the following data is made available:



V_S=120 V
V_a=73.4 V
P_S=2795 W
P_1=1085 W
P_2=539 W
P_4=385 W
P_5=337 W

(a) **Determine the number of branches.** (5)

(b) **Determine the number of nodes.** (5)

(c) **Determine the number of independent loops.** (5)

(d) **Calculate P_3.** (10)

(e) **Calculate I_1.** (10)

(f) **Calculate I_3.** (15)

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Points Distribution

Problem HW-3-2

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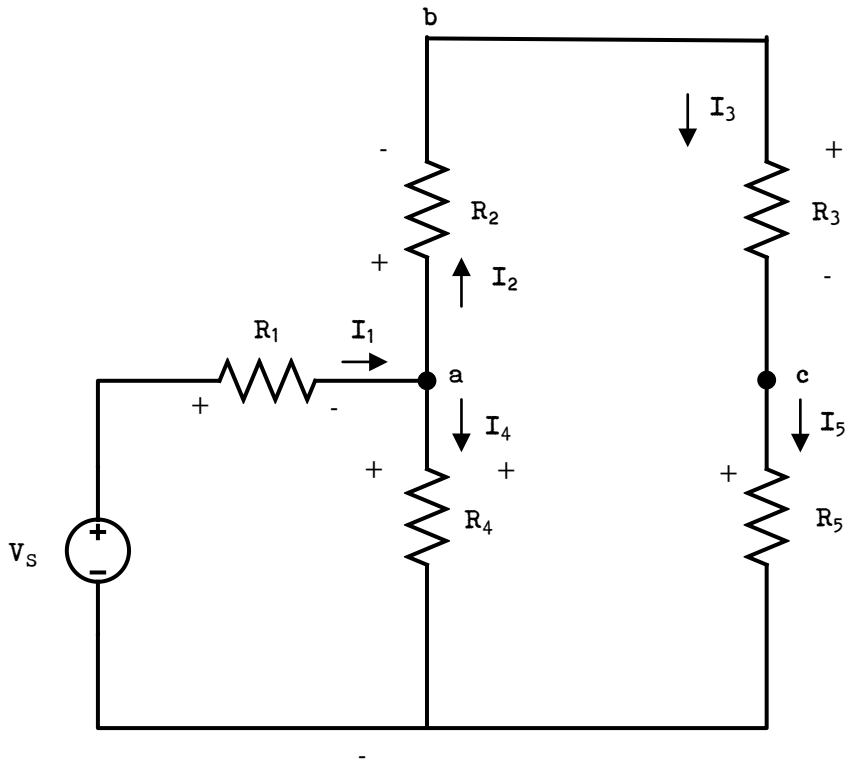
For the circuit shown, the following data are obtained via measurements:



V_S=120 V
V_a=72 V
V_b=48 V
V_c=24 V
P_S=1152 W
P_1=460.8 W
I_4=7.2 A

(a) Determine the number of branches. (5)

(b) Determine the number of nodes. (5)

(c) Determine the number of independent loops. (5)

(d) Determine V_{ac}. (5)

(e) Determine P_2. (15)

(f) Determine P_3. (5)

(g) Determine P_4. (5)

(h) Determine P_5. (5)

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Problem HW-3-3 Points Distribution
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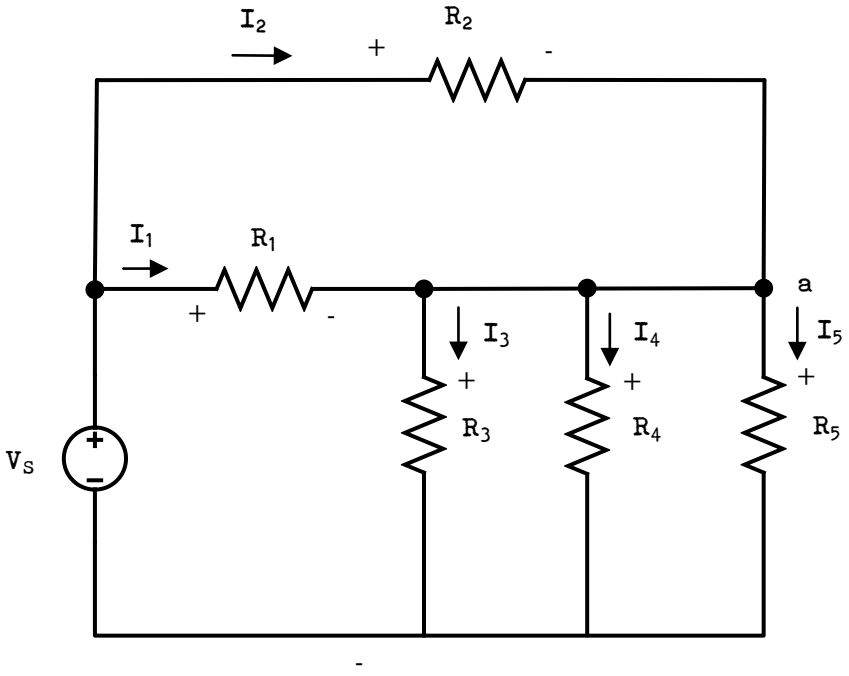
For the circuit shown, the following quantities are measured and recorded:



V_S=120 V
V_a=48 V
P_S=1728 W
P_1=518.4 W
P_3=P_4=P_5=230.4 W

(a) Determine the number of branches. (5)

(b) Determine the number of nodes. (5)

(c) Determine the number of independent loops. (5)

(d) Determine P_2. (20)

(e) Determine I_3. (5)

(f) Determine I_4. (5)

(g) Determine I_5. (5)

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