X

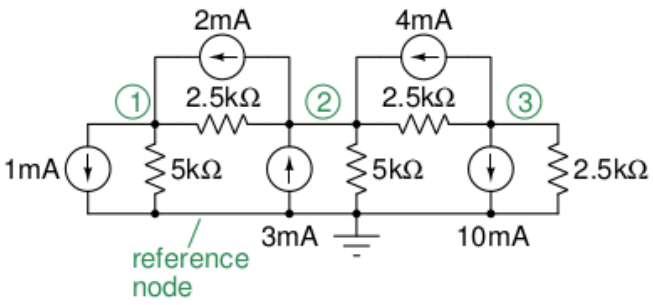
Unit 6 - Week 4: Nodal analysis

Assignment 4

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2018-09-05, 23:59 IST.

1)



Setup the nodal analysis equations for the circuit above. Enter the G matrix in the space provided below, one row on each line. A 3x3 identity matrix should be entered as

1 0 0
0 1 0
0 0 1

- Do not have any space at the start of the line
- Have exactly one space between entries on each row
- Do not have any space after the last entry in each row
- Do not have any trailing zeros, i.e., do not write 5.5 as 5.50 or 5.as

ce De

Hint

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: String) 0.6 -0.4 0;-0.4 1 -0.4;0 -0.4 0.8

1 point

2) Determine the voltage at node 3 in the circuit above.

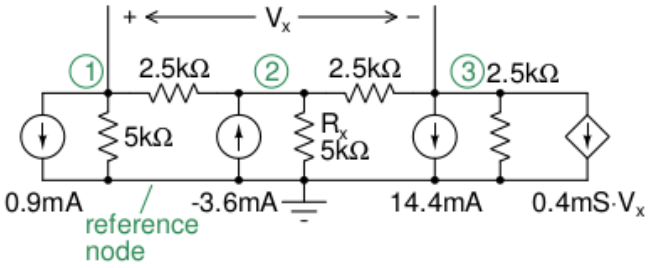
(The answer must be in the **volts (V).** Round off fractional answers to two decimal place.)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) -18.8,-18.7

1 point

3)



Setup the nodal analysis equations for the circuit above. Enter the G matrix in the space provided below, one row on each line. A 3x3 identity matrix should be entered as

1 0 0
0 1 0
0 0 1

- Do not have any space at the start of the line
- Have exactly one space between entries on each row
- Do not have any space after the last entry in each row
- Do not have any trailing zeros, i.e., do not write 5.5 as 5.50 or 5 as 5.0

(The $[G]$ matrix entries should be in **millisiemens (mS)**. Round off fractional answers to one decimal place.)

Hint

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: String) 0.6 -0.4 0;-0.4 1 -0.4;0.4 -0.4 0.4

1 point

4) Determine the power dissipated in the resistor R_x in the circuit above.

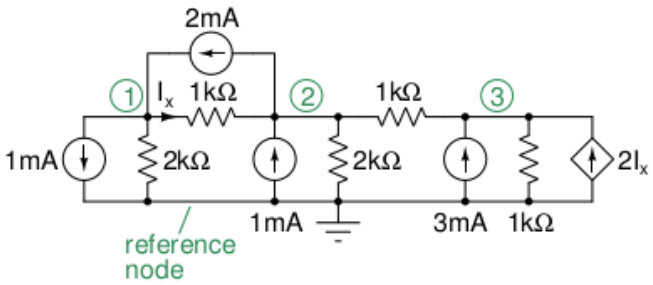
(The answer must be in **milliwatts (mW)**. Round off fractional answers to one decimal place.)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Numeric) 180

1 point

5)



Setup the nodal analysis equations for the circuit above. Enter the G matrix in the space provided below, one row on each line. A 3x3 identity matrix should be entered as
1 0 0
0 1 0
0 0 1

- Do not have any space at the start of the line
- Have exactly one space between entries on each row
- Do not have any space after the last entry in each row
- Do not have any trailing zeros, i.e., do not write 5.5 as 5.50 or 5 as 5.0

(The $[G]$ matrix entries should be in **millisiemens (mS)**. Round off fractional answers to one decimal place.)

Hint

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: String) 1.5 -1 0;-1 2.5 -1;-2 1 2

1 point

6) Determine the voltage at node 3 in the circuit above.

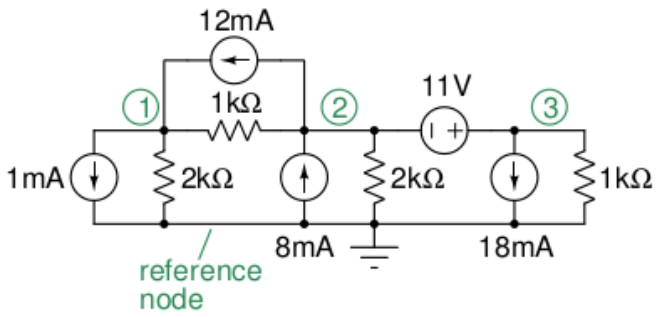
(The answer must be in the **volts (V).** Round off fractional answers to two decimal place.)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 2.3,2.4

1 point

7)



Setup the nodal analysis equations for the circuit above. Enter the G matrix in the space provided below, one row on each line. Have the equations in the following order: node equation, supernode equation, voltage source equation. A 3x3 identity matrix should be entered as
1 0 0
0 1 0
0 0 1

- Do not have any space at the start of the line
- Have exactly one space between entries on each row
- Do not have any space after the last entry in each row
- Do not have any trailing zeros, i.e., do not write 5.5 as 5.50 or 5 as 5.0

(The $[G]$ matrix entries should be in **millisiemens (mS)** if they are conductances or scalars as applicable. Round off fractional answers to one decimal place.)

Hint

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: String) 1.5 -1 0;-1 1.5 1;0 -1 1

1 point

8) Determine the voltage at node 2 in the circuit above. (You have already setup the nodal analysis equation for this circuit in the previous question. But, the $[G]$ matrix has conductances and dimensionless numbers. Be careful while inverting the matrix!).

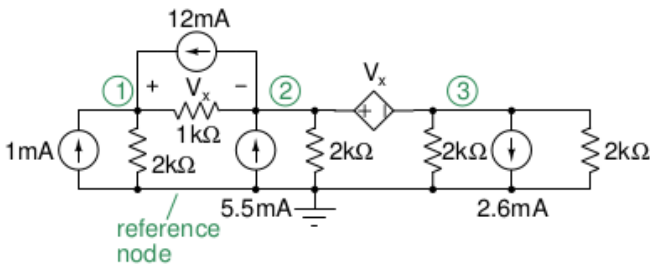
(The answer must be in **volts (V)**. Round off fractional answers to one decimal place.)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Numeric) -14

1 point

9)



Setup the nodal analysis equations for the circuit above. Enter the G matrix in the space provided below, one row on each line. Have the equations in the following order: node equation, supernode equation, voltage source equation. A 3x3 identity matrix should be entered as
1 0 0
0 1 0
0 0 1

- Do not have any space at the start of the line
- Have exactly one space between entries on each row
- Do not have any space after the last entry in each row
- Do not have any trailing zeros, i.e., do not write 5.5 as 5.50 or 5 as 5.0

(The $[G]$ matrix entries should be in **millisiemens (mS)** if they are conductances or scalars as applicable. Round off fractional answers to one decimal place.)

Hint

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: String) 1.5 -1 0;-1 1.5 1;1 -2 1
(Type: String) 1.5 -1 0;-1 1.5 1;-1 2 -1

1 point

10 Determine the voltage at node 1 in the circuit above. (You have already setup the nodal analysis equation for this circuit in the previous question. But, the $[G]$ matrix has conductances and dimensionless numbers. Be careful while inverting the matrix!).

(The answer must be in **volts (V)**. Round off fractional answers to one decimal place.)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Numeric) 11.2

1 point

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