Internal Assessment Test 1 -18EE32 - ECA-3rd Sem

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what is the formula to check the number of loops,nodes and branches CO1 [L2] 1 point

- l= b+n+1
- l = b-n+1
- l = b+n-1
- i = b-n-1

Clear selection

Potential difference in electrical terminology is known as? CO1 [L2] 1 point

- Voltage
- Current
- Resistance
- Conductance

Clear selection

The circuit in which current has a complete path to flow is called _____ circuit CO1 [L2] 1 point

- short
- open
- closed
- open loop

Clear selection

Kirchhoff's current law is applied at CO1 [L2] 1 point

- ○ loops
- ○ none of the mentioned
- ◉ nodes
- ○ both loop and node

Clear selection

For a voltage source to be neglected, the terminals across the source should be CO1 [L2] 1 point

- ○ replaced by inductor
- ◉ short circuited
- ○ none of the mentioned
- ○ replaced by some resistance

Clear selection

In case of ideal current sources, they have CO1 [L2] 1 point

- ○ zero internal resistance
- ○ low value of voltage
- ○ large value of currrent
- ◉ infinite internal resistance

Clear selection

A practical current source can also be represented as CO1 [L2] 1 point

- ○ a resistance in parallel with an ideal voltage source
- ◉ a resistance in parallel with an ideal current source
- ○ a resistance in series with an ideal current source
- ○ none of the mentioned

Clear selection

A dependent source CO1 [L2] 1 point

- ◉ may be a current source or a voltage source
- ○ is always a voltage source
- ○ is always a current source
- ○ none of the mentioned

Clear selection

In a circuit with more number of loops, which law can be best suited for the analysis? CO1 [L2] 1 point

- ○ KCL
- ○ Ohm's law
- ◉ KVL
- ○ none of the mentioned

Clear selection

In nodal analysis how many nodes are taken as reference nodes? CO1 [L2] 1 point

- (●) 1
- ( ) 2
- ( ) 3
- ( ) 4

Clear selection

Constant voltage source is CO1 [L2] 1 point

- ( ) active and bilateral
- ( ) passive and bilateral
- (●) active and unilateral
- ( ) passive and unilateral

Clear selection

If the voltage-current characteristics are a straight line through the origin, then the element is said to be? CO1 [L2] 1 point

- (●) Linear element
- ( ) Non-linear element
- ( ) Unilateral element
- ( ) Bilateral element

Clear selection

The current law represents a mathematical statement of fact that CO1 [L2] 1 point

- ○ voltage cannot accumulate at node
- ◉ charge cannot accumulate at node
- ○ charge at the node is infinite
- ○ none of the mentioned

Clear selection

An electric current of 10 A is the same as CO1 [L2] 1 point

- ○ 10 J/C
- ○ 10 V/C
- ◉ 10C/sec
- ○ 10 W/sec

Clear selection

In which of the following cases is Ohm's law not applicable? CO1 [L2] 1 point

- ○ Electrolytes
- ○ Arc lamps
- ◉ Insulators
- ○ Vacuum ratio values

Clear selection

In a network consisting of linear resistors and ideal voltage source, if the value of resistors are doubled, then voltage across each resistor CO1 [L2] 1 point

- ○ increases four times
- ◉ remains unchanged
- ○ doubled
- ○ halved

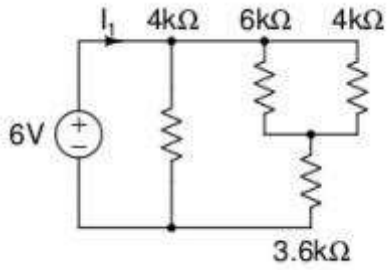
Clear selection

If a current source is to be neglected, the terminals across the source are CO1 [L2] 1 point

- ○ replaced by a source resistance
- ◉ open circuited
- ○ replaced by a capacitor
- ○ short circuited

Clear selection

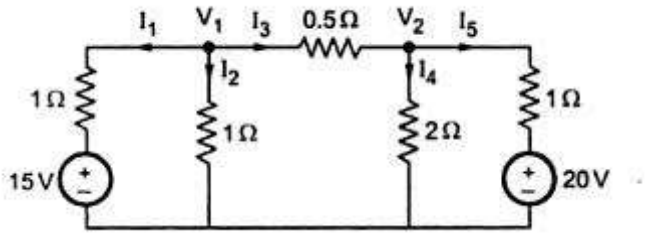
Determine the current I1 in the given circuit CO1 [L2] 4 points



- 2mA
- 2.5mA
- 1mA
- 2.25mA

Clear selection

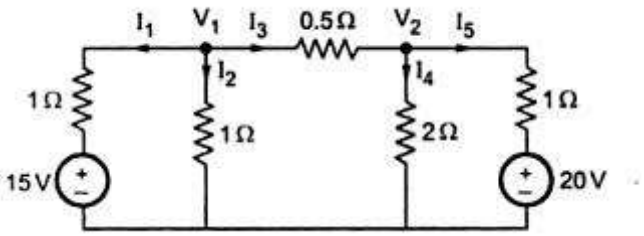
Using nodal analysis, determine the node 1 voltage in the network shown in the figure CO1 [L3] 4 points



- 9.21V
- 9.42V
- 9.45V
- 9.25V

Clear selection

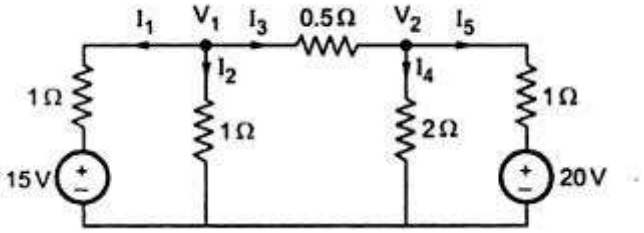
Using nodal analysis, determine the node 2 voltage in the network shown in the figure CO1 [L3] 3 points



- 11.3V
- 11.25V
- 11V
- 11.37V

Clear selection

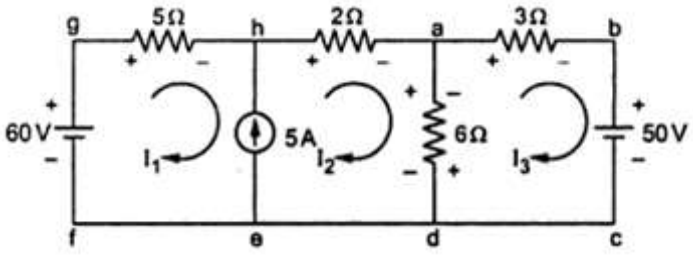
Using nodal analysis, determine the current through 1Ω resistor in the network shown in the figure CO1 [L3] 4 points



- 9A
- 9.5A
- -9 A
- -9.5A

Clear selection

Write the mesh equation 1 for the given problem CO1 [L3] 3 points



$5I_1 + 8I_2 - 6I_3 = 60$

Option 1

$5I_1 - 8I_2 - 6I_3 = 60$

Option 2

$-5I_1 - 8I_2 - 6I_3 = 60$

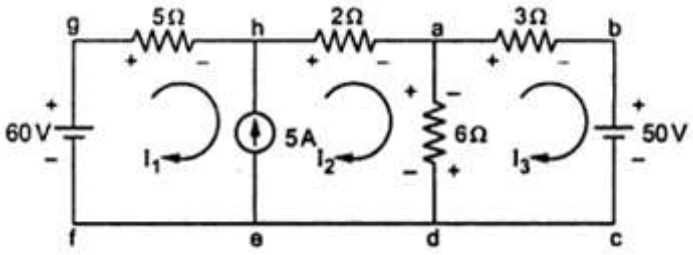
Option 3

$-5I_1 - 8I_2 + 6I_3 = 60$

Option 4

Clear selection

Write the mesh equation 2 for the given problem CO1 [L3] 3 points



$-6I_2 - 9I_3 = -50$

Option 1

$-6I_2 + 9I_3 = -50$

Option 2

$6I_2 - 9I_3 = -50$

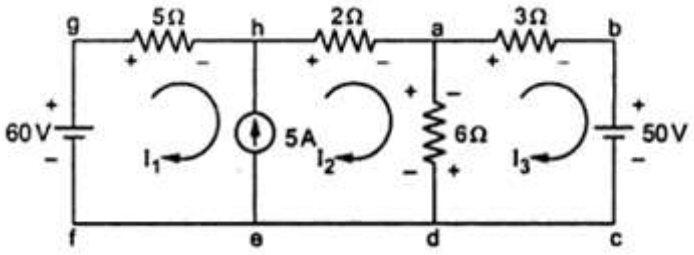
Option 3

$6I_2 + 9I_3 = -50$

Option 4

Clear selection

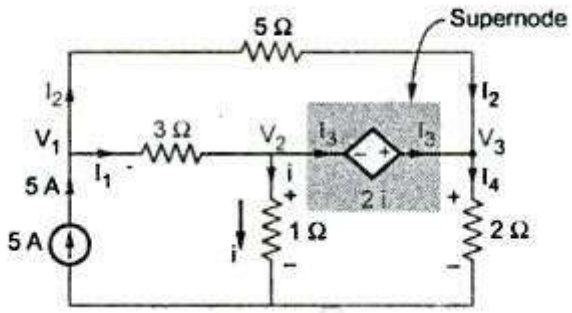
Find the current through a-b using mesh analysis CO1 [L3] 3 points



- 1.72A
- 1.73A
- 1.78A
- 1.7A

Clear selection

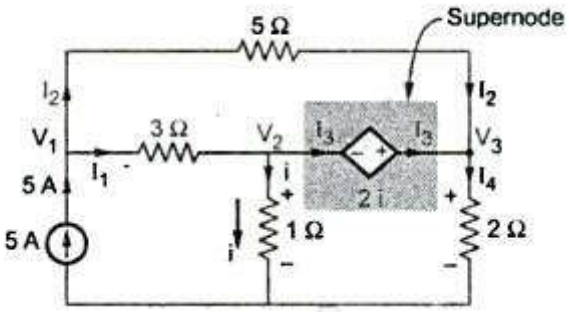
Using nodal analysis, determine the node 1 voltage in the network shown in the figure CO1 [L3] 3 points



- -8.1V
- 8.1V
- -8.12V
- -8.13V

Clear selection

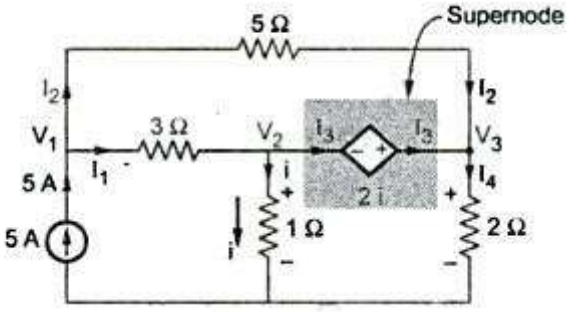
Using nodal analysis, determine the node 2 voltage in the network shown in the figure CO1 [L3] 3 points



- -10.5V
- -10.15V
- -10V
- -10.25V

Clear selection

Using nodal analysis, determine the current through 5Ω resistor in the network shown in the figure CO1 [L3] 3 points



- 4.372A
- 4.373A
- 4.375A
- 4.378A

Clear selection

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