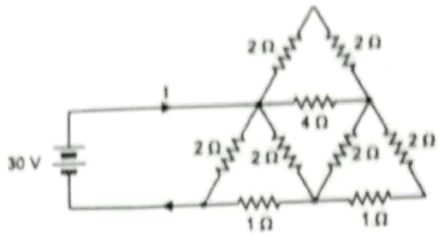
1. Find the power supplied by the voltage source

$R_{eq} = 1.055\ \Omega$

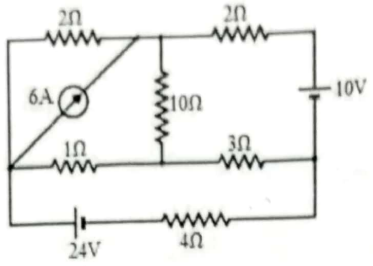
$I = 28.45\ A$

$P = 853.6\ W$.



2. Determine current in 4Ω resistance using Kirchhoff's laws

$I_{4\Omega} = 4.1\ A$



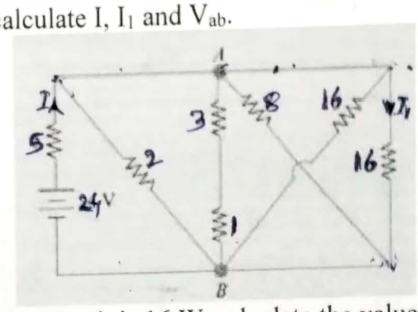
3. In the circuit shown in figure, calculate I, I_1 and V_{ab}.

$I = 4\ A$

$I_1 = 0.25\ A$

$V_{AB} = 4\ V$.

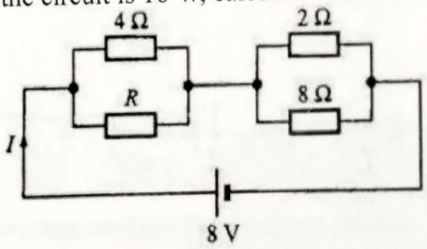
$R_{eq} = 6\ \Omega$



4. If the total power dissipated in the circuit is 16 W, calculate the value of 'R' & the total current.

$R = 6\ \Omega$

$I = 2\ A$



5. Determine the voltage across and current through each resistor in the circuit.

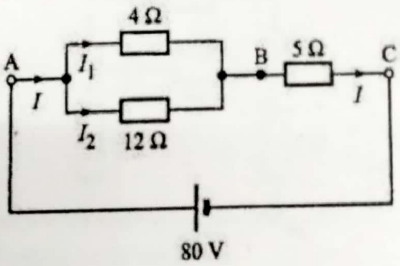
$V_1 = V_2 = 30\ V$.

$V_3 = 50\ V$.

$I_1 = 7.5\ A$

$I_2 = 2.5\ A$.

$I = 10\ A$

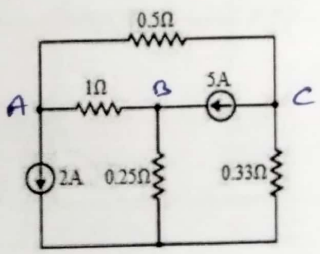


6. Using nodal analysis find the current in different resistances

$V_A = -1.5\ V$

$V_B = 0.7\ V$.

$V_C = -1.6\ V$.



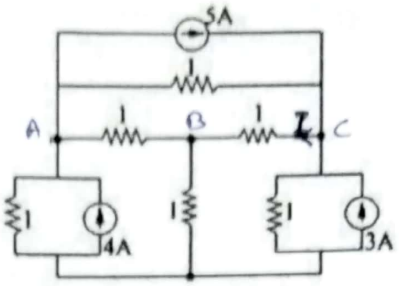
7. Find the current I using nodal analysis. All resistances are given in Ω

$V_A = 1.5\ V$

$V_B = 1.75\ V$

$V_C = 3.75\ V$

$I = 2\ A$

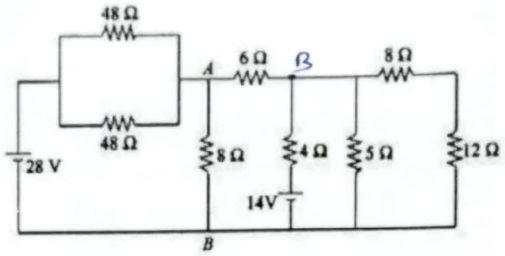


8. Using nodal analysis find the power supplied by 14V battery

$V_A = 7\ V.$

$V_B = 7\ V.$

$I_{4\Omega} = \frac{7}{4}\ A$

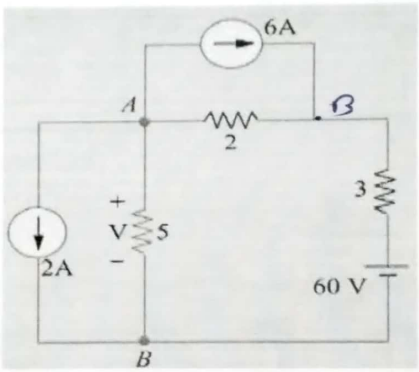


9. Find the voltage v using Nodal analysis

$V = 19\ V.$

$V_A = 19\ V$

$V_B = 42.6\ V.$

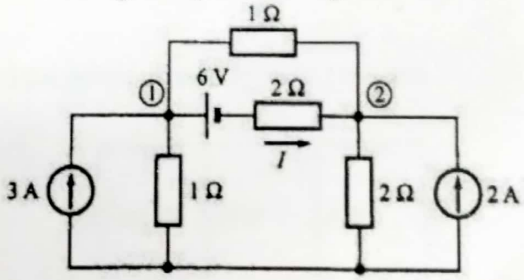


10. Find the current 'I' using node-voltage analysis for the given circuit.

$V_1 = 3.82\ V$

$V_2 = 2.36\ V.$

$I = -2.27\ A.$

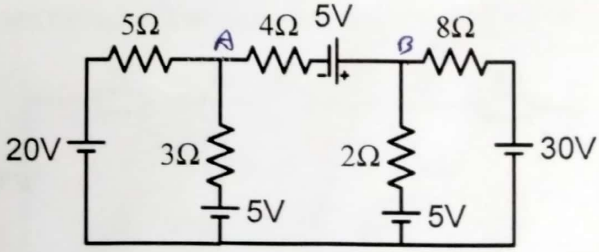


11. Evaluate current in 4Ω resistance using nodal analysis

$V_A = 9.2\ V.$

$V_B = 11.2\ V.$

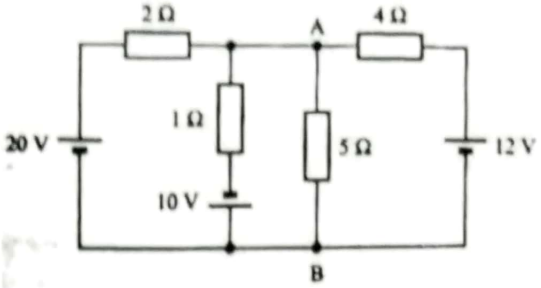
$I = 0.75\ A.$



12. Using nodal analysis find the current in 5 Ω resistance.

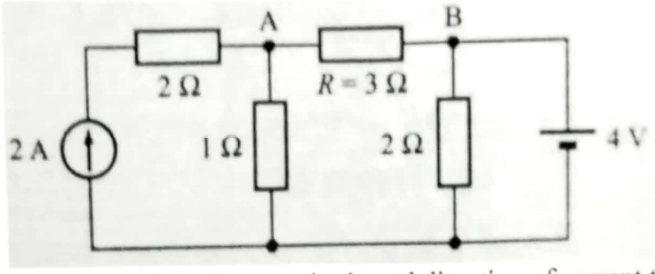
$I = 0.307\,A$

$V_A = 1.535\,V.$



13. Using nodal analysis find the current in 3Ω resistance.

$I = 0.5\,A.$

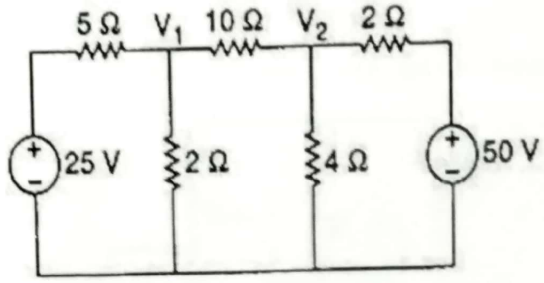


14. Using nodal voltage method calculate the magnitude and direction of current through 10 Ω resistor.

$V_1 = 10.07\,V$

$V_2 = 30.59\,V.$

$I = 2.05\,A.$



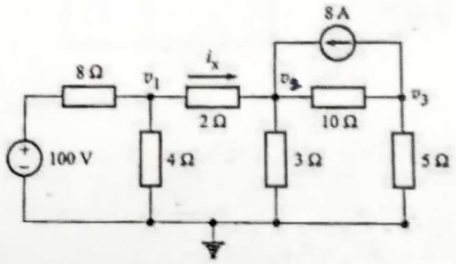
15. Using nodal analysis find the current i_x.

$V_1 = 25.89\,V.$

$V_2 = 20.31\,V.$

$V_3 = -19.89\,V.$

$I_x = 2.79\,A.$



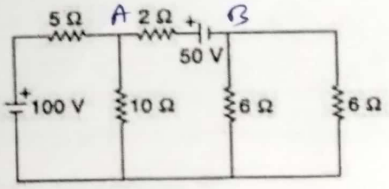
16. Using nodal analysis, find the power dissipated in 2 Ω resistor.

$V_A = 60\,V$

$V_B = 6\,V.$

$I = 2A$

$P = 8\,W.$

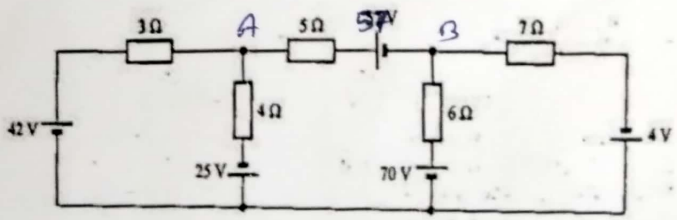


17. Find the value of current through 5Ω using node voltage method.

$V_A = 27\,V.$

$V_B = 10\,V.$

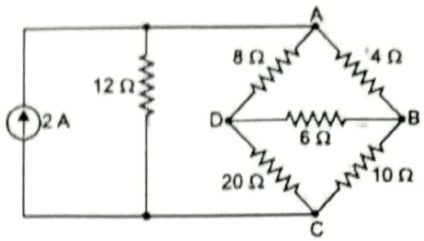
$I_{5\Omega} = 8\,A$



18. Using mesh analysis find the current in 4Ω and 20Ω resistance

$I_{4\Omega} = 0.75\,A$

$I_{20\Omega} = 0.375\,A$



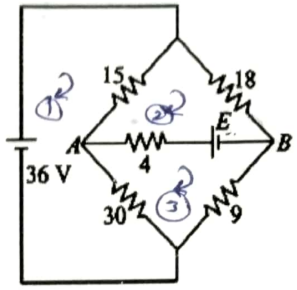
19. Find the value of E such that the current in 4Ω resistance is 0A. Use mesh analysis method

$E = 12\,V$

$I_1 = 2.13\,A$

$I_2 = 1.33\,A$

$I_3 = 1.33\,A$



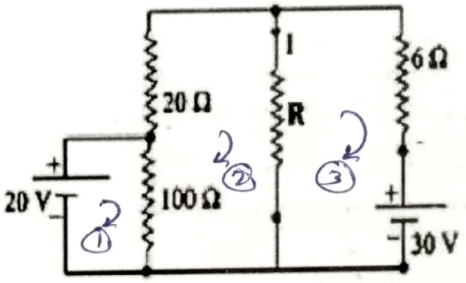
20. Using mesh analysis to find the unknown resistance R such that the current I is 2.88A

$I_1 = 0.48\,A$

$I_2 = 0.28\,A$

$I_3 = -2.6\,A$

$R = 5\,\Omega$



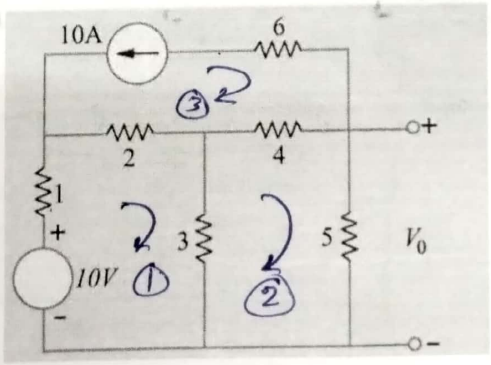
21. Find the voltage V_0 by using mesh analysis

$V_0 = -21.43\,V.$

$I_1 = -3.81\,A$

$I_2 = -4.29\,A$

$I_3 = -10\,A$

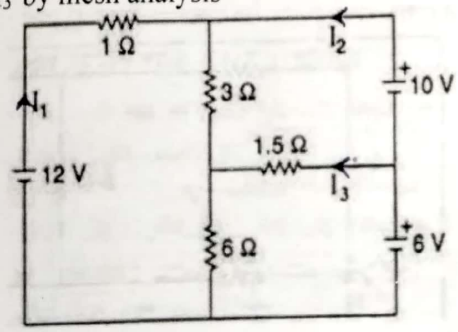


22. Calculate the current I_1, I_2 & I_3 by mesh analysis

$I_1 = -4\,A$

$I_2 = 6.67\,A$

$I_3 = -1.34\,A$



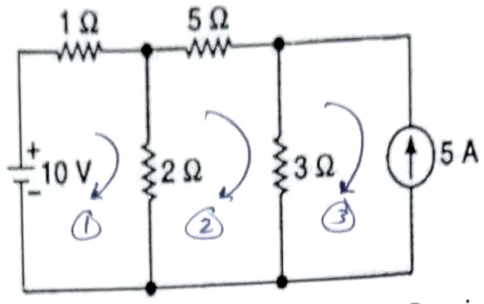
23. Using mesh method, calculate the current through 2 Ω resistor.

$I_1 = 2.69\,A$

$I_2 = -0.961\,A$

$I_3 = -5\,A.$

$I_{2\Omega} = 3.651\,A.$



24. Using mesh analysis, find the current through 6 Ω, 12 Ω and 30 Ω resistor.

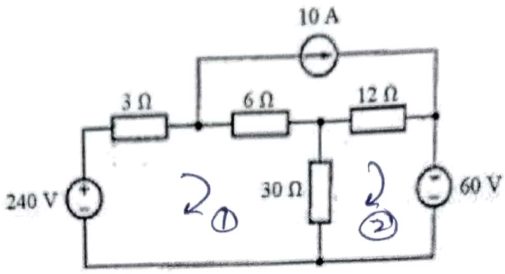
$I_1 = 19.51\,A$

$I_2 = 15.37\,A$

$I_6 = 9.51\,A$

$I_{12} = 5.37\,A$

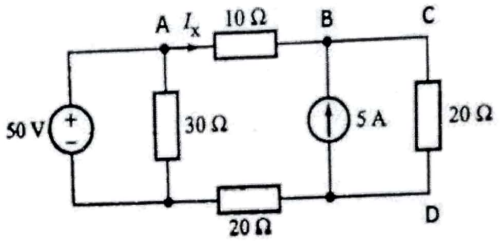
$I_{30} = 4.14\,A.$



25. Determine the current Ix through 10 Ω resistor (AB branch) and power in 20 Ω resistor (CD branch) using mesh analysis.

$I_x = 1\,A.$ (AB)

$P = 320\,W.$ (CD)

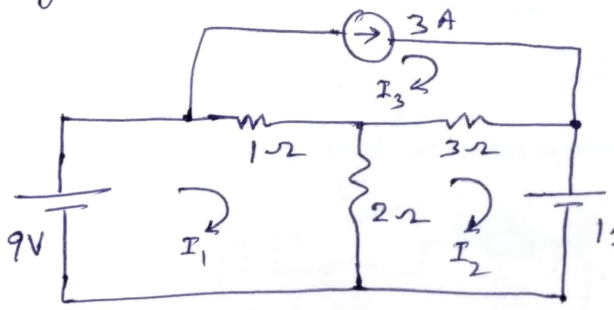


26. Using mesh analysis find I_1, I_2 & I_3.

$I_{1\Omega} = 1.91\,A$

$I_{2\Omega} = 3.55\,A$

$I_{3\Omega} = 1.64\,A$

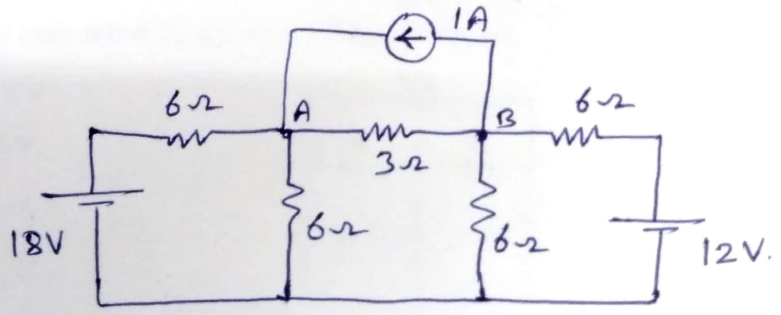


$I_1 = 4.91\,A$

$I_2 = 1.36\,A$

$I_3 = 3\,A.$

27. Using nodal analysis find current in 3Ω.



$V_A = 9\,V.$

$V_B = 6\,V.$

$I = 1\,A.$