

Tutorial 1-02-c

Question 1

4.2 Evaluate the following determinant:

$$\begin{vmatrix} 8 & -9 & 4 \\ 3 & -2 & 1 \\ 6 & 5 & -4 \end{vmatrix}$$

Question 2

4.4 Use Cramer's rule to solve for the unknowns in

$$\begin{aligned} 10I_1 - 2I_2 - 4I_3 &= 10 \\ -2I_1 + 12I_2 - 6I_3 &= -34 \\ -4I_1 - 6I_2 + 14I_3 &= 40 \end{aligned}$$

Question 3

4.5 Transform the voltage sources shown in Fig. 4-4 to current sources

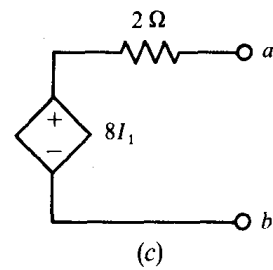
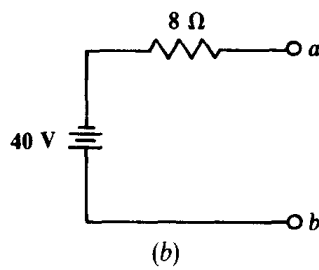
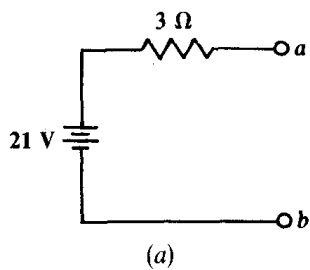


Fig. 4-4

Question 4

4.10 Determine the mesh currents in the circuit shown in Fig. 4-13.

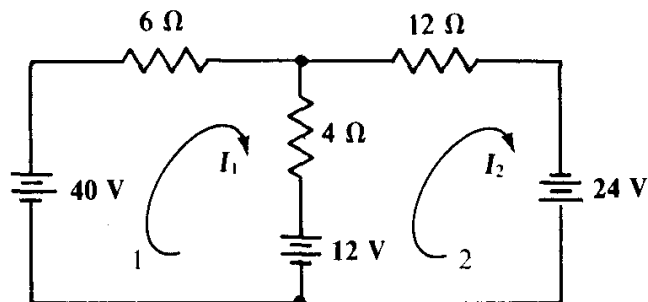


Fig. 4-13

Question 5

Find the mesh currents in the circuit shown in Fig. 4-15.

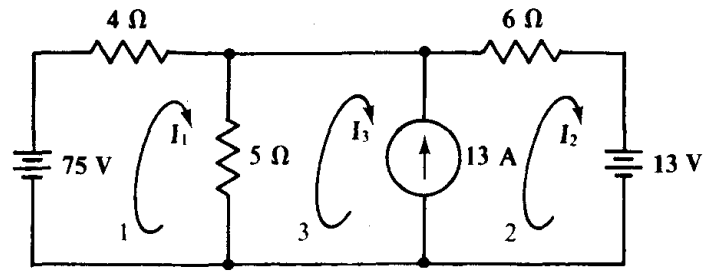


Fig. 4-15

Question 6

Use loop analysis to find the current flowing to the right through the 5-kΩ resistor in the circuit shown in Fig. 4-21.

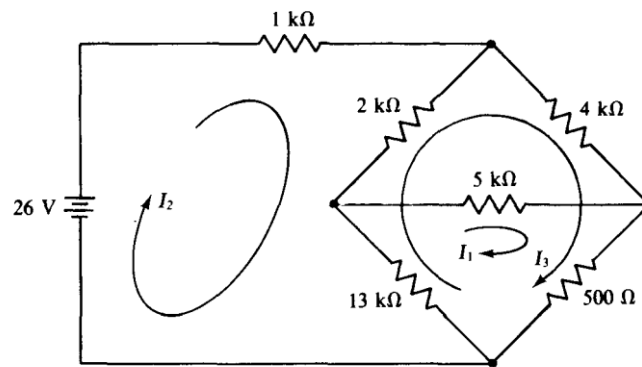


Fig. 4-21

Question 7

Use nodal analysis in finding I in the circuit of Fig. 4-25.

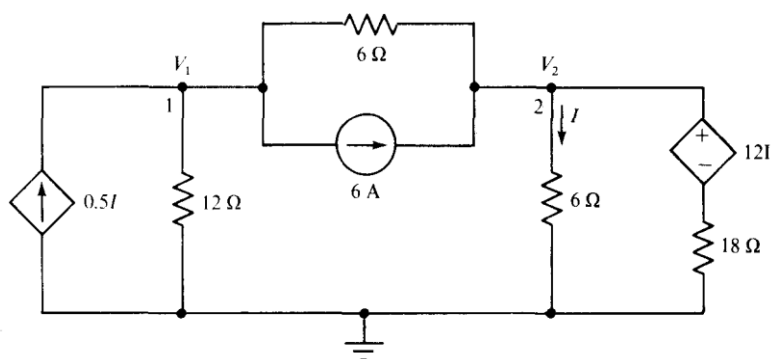


Fig. 4-25