

Question #1 A

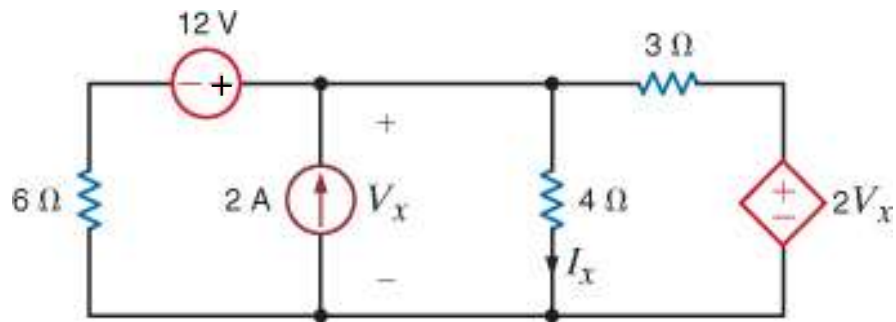


Fig. 1

In the circuit in Fig 1, determine V_x and I_x .

Question #1 B

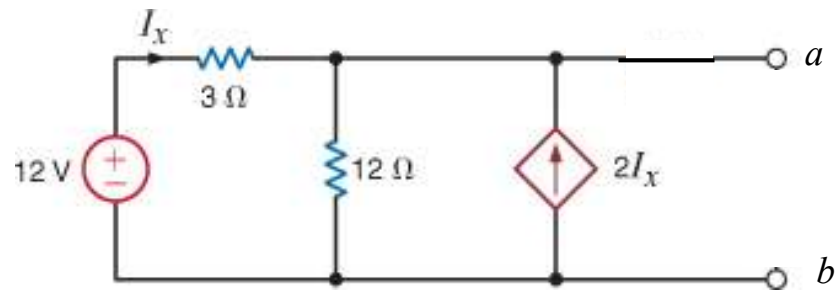


Fig. 2

In the circuit shown in Fig 2,

- i) With terminals a , and b open, determine the open-circuit voltage.
- ii) With terminals a , and b shorted together, determine the short-circuit current.
- iii) Determine the Thvenin equivalent voltage V_{Th} .
- iv) Determine the Thvenin equivalent resistance R_{Th} .

Question # 2 A

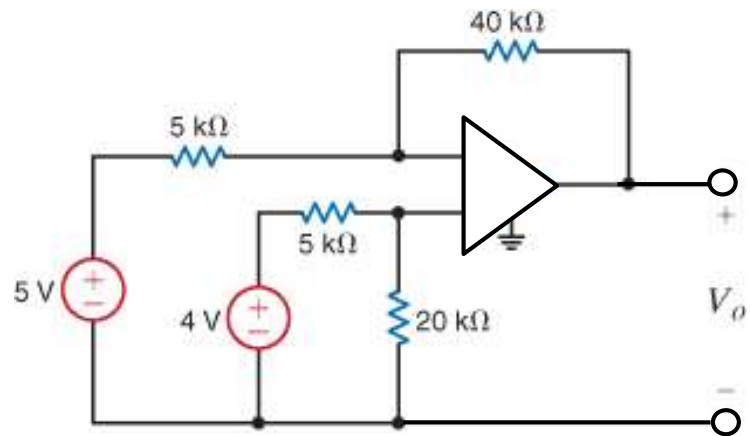


Fig. 3

In the circuit shown in Fig 3, determine V_o .

Question # 2 B

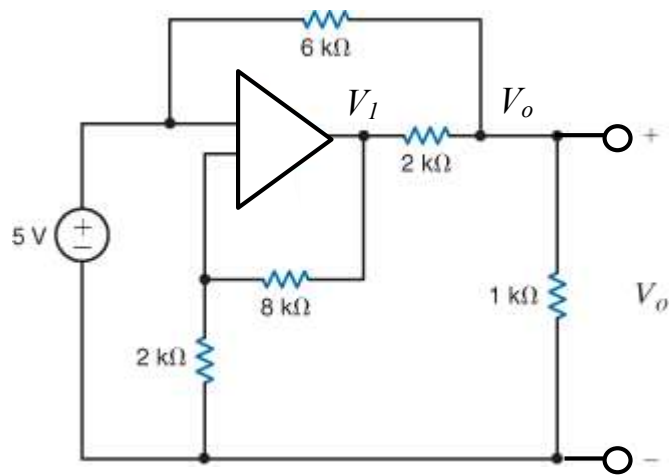


Fig. 4

In the circuit shown in Fig. 4, determine V_I and V_o .

Question #3 A

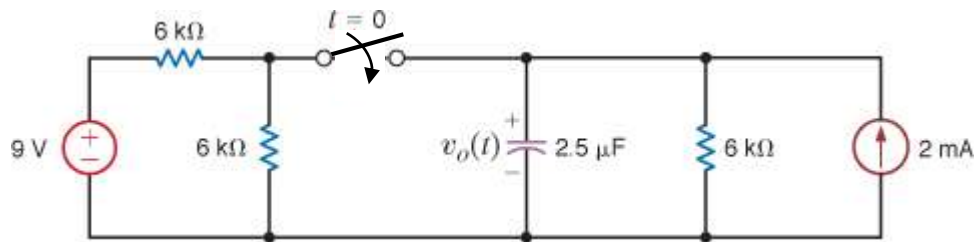


Fig. 5

In the circuit shown in Fig, 5 the switch has been open for a long time. It is closed at $t = 0$.

- Determine the initial capacitor voltage $v_o(0)$ with the switch open for a long time,
- Determine the final capacitor voltage $v_o(\infty)$ with the switch closed for a long time.
- In the expression for $v_o(t) = F + E e^{-t/\tau}$ determine F , E and τ .

Question #3 B

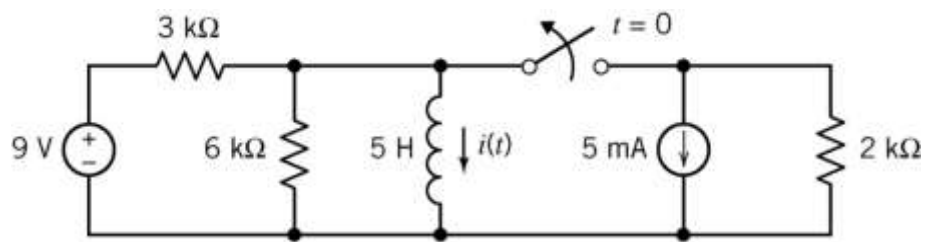


Fig. 6

In the circuit shown in Fig 6 the switch has been closed for a long time. It is opened at $t = 0$.

- Determine the initial inductor current $i(0)$ with switch closed for a long time,
- Determine the final inductor current $i(\infty)$ with switch open for a long time.
- Sketch variation of $i(t)$ with time after opening the switch.
- In the expression for $i(t) = F + E e^{-t/\tau}$ determine F , E and τ .