

- 1.8** The current flowing past a point in a device is shown in Fig. 1.25. Calculate the total charge through the point.

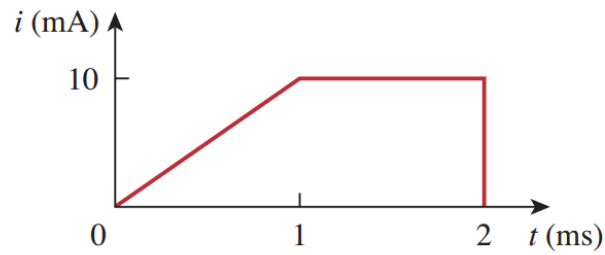


Figure 1.25

For Prob. 1.8.

- 1.12** If the current flowing through an element is given by

$$i(t) = \begin{cases} 3t\text{A}, & 0 \leq t < 6\text{ s} \\ 18\text{A}, & 6 \leq t < 10\text{ s} \\ -12\text{A}, & 10 \leq t < 15\text{ s} \\ 0, & t \geq 15\text{ s} \end{cases}$$

Plot the charge stored in the element over $0 < t < 20$ s.

- 1.14** The voltage v across a device and the current i through it are

$$v(t) = 10 \cos 2t \text{ V}, \quad i(t) = 20(1 - e^{-0.5t}) \text{ mA}$$

Calculate:

- the total charge in the device at $t = 1$ s
- the power consumed by the device at $t = 1$ s.

1.16 Figure 1.27 shows the current through and the voltage across an element.

- Sketch the power delivered to the element for $t > 0$.
- Find the total energy absorbed by the element for the period of $0 < t < 4\text{s}$.

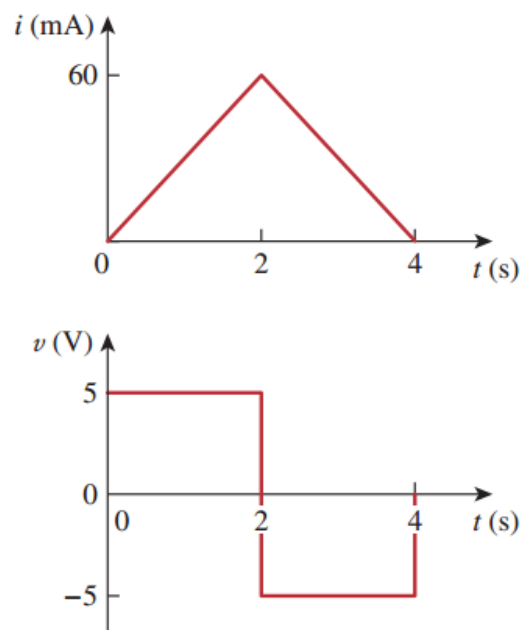


Figure 1.27

For Prob. 1.16.

2.14 Given the circuit in Fig. 2.78, use KVL to find the branch voltages V_1 to V_4 .

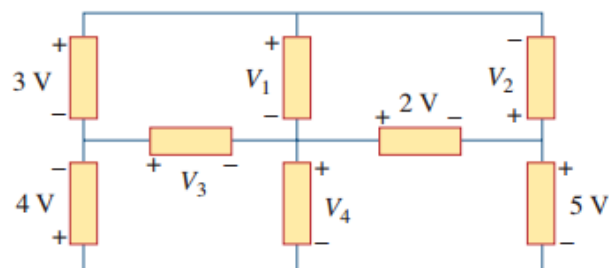


Figure 2.78

For Prob. 2.14.

2.20 Determine i_o in the circuit of Fig. 2.84.

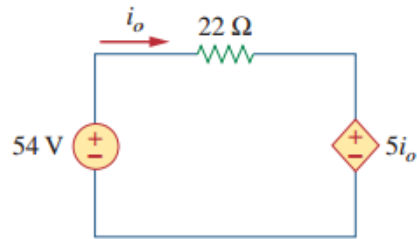


Figure 2.84
For Prob. 2.20.

2.32 Find i_1 through i_4 in the circuit in Fig. 2.96.

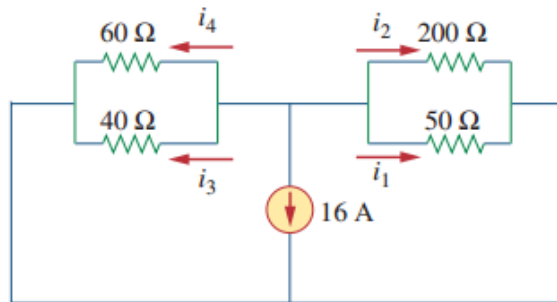


Figure 2.96
For Prob. 2.32.

2.46 Find I in the circuit of Fig. 2.110.

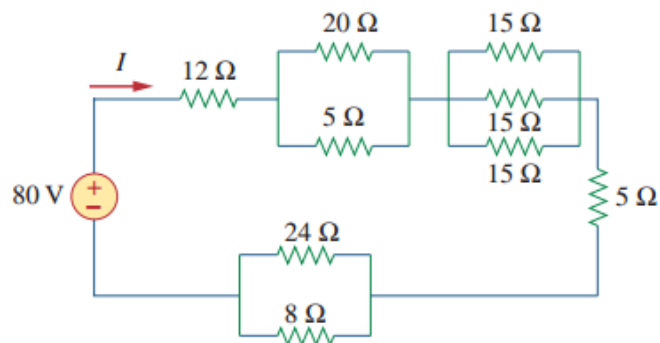


Figure 2.110
For Prob. 2.46.