VE215 FA2017 Assignment 1

1.6 The charge entering a certain element is shown in Fig. 1.23. Find the current at:

(a) $t = 1$ ms (b) $t = 6$ ms (c) $t = 10$ ms

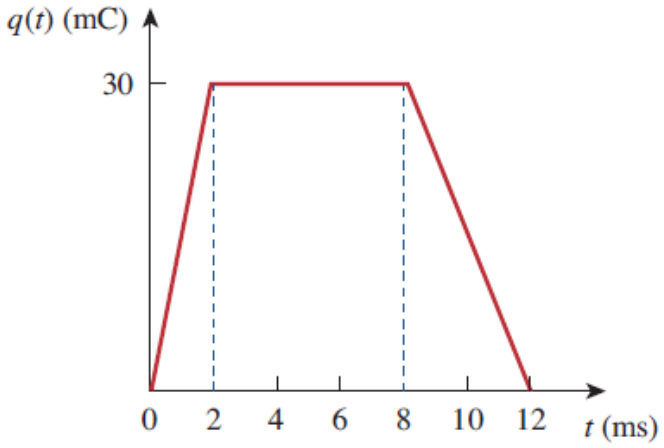


Figure 1.23
For Prob. 1.6.

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

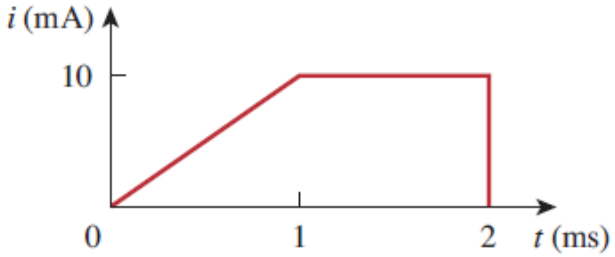


Figure 1.25
For Prob. 1.8.

1.10 A lightning bolt with 10 kA strikes an object for 15 μs. How much charge is deposited on the object?

1.17 Figure 1.28 shows a circuit with five elements. If $p_1 = -205$ W, $p_2 = 60$ W, $p_4 = 45$ W, $p_5 = 30$ W, calculate the power p_3 received or delivered by element 3.

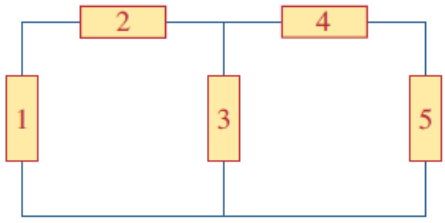


Figure 1.28
For Prob. 1.17.

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

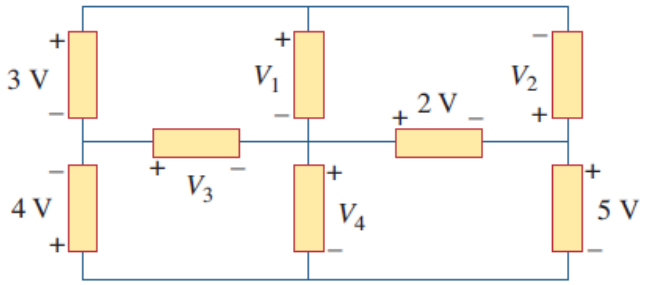


Figure 2.78
For Prob. 2.14.

2.21 Find V_x in the circuit of Fig. 2.85.

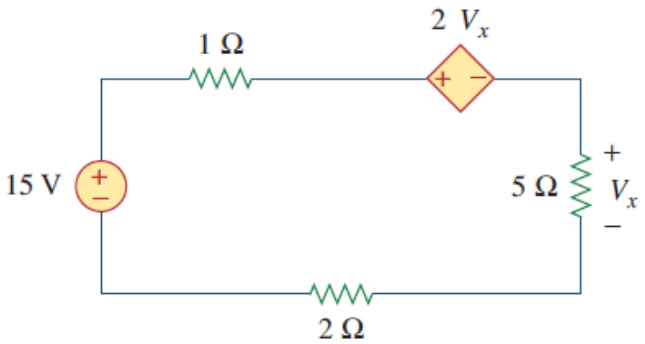


Figure 2.85
For Prob. 2.21.

2.37 Find R for the circuit in Fig. 2.101.

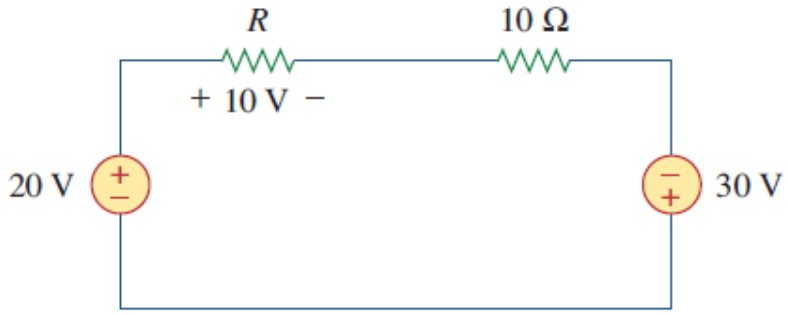


Figure 2.101
For Prob. 2.37.

2.46 Find I in the circuit of Fig. 2.110.

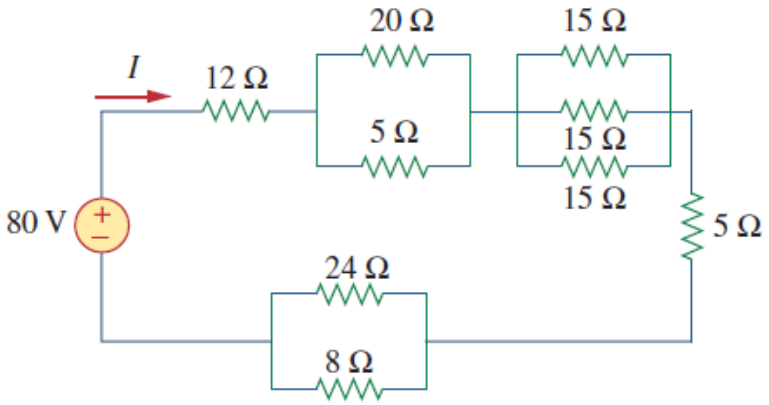
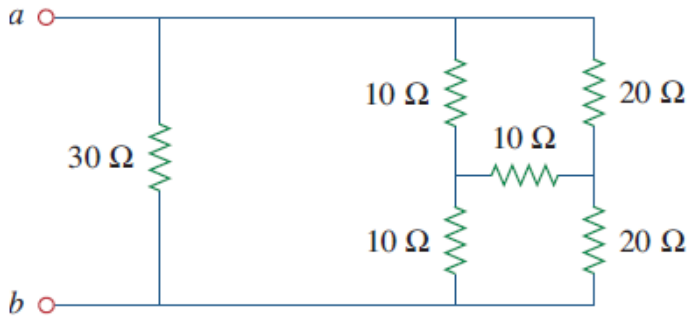
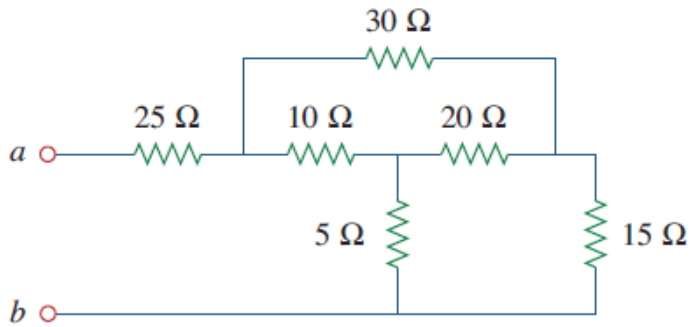


Figure 2.110
For Prob. 2.46.

2.51 Obtain the equivalent resistance at the terminals *a*-*b* for each of the circuits in Fig. 2.115.



(a)



(b)

Figure 2.115
For Prob. 2.51.