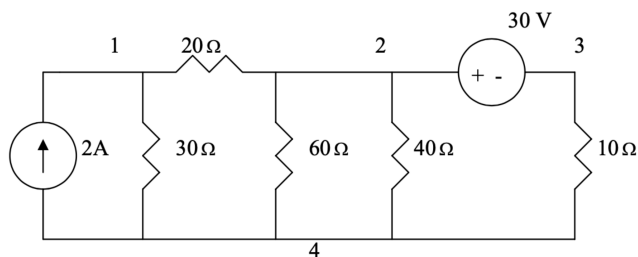


- 1. Find the hot resistance of a lightbulb rated 60 W, 120 V.

2.

Determine the number of branches and nodes in the circuit.



Calculate the power dissipated in the 5-Ω resistor in the circuit of Fig. 2.82.

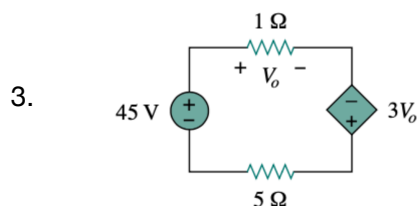


Figure 2.82 For Prob. 2.18.

Find V_o in the circuit in Fig. 2.83 and the power dissipated by the controlled source.

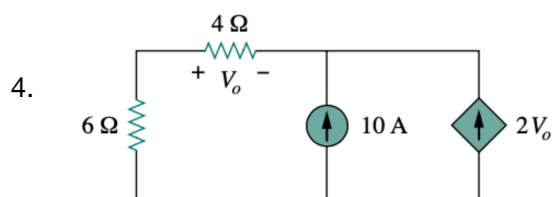
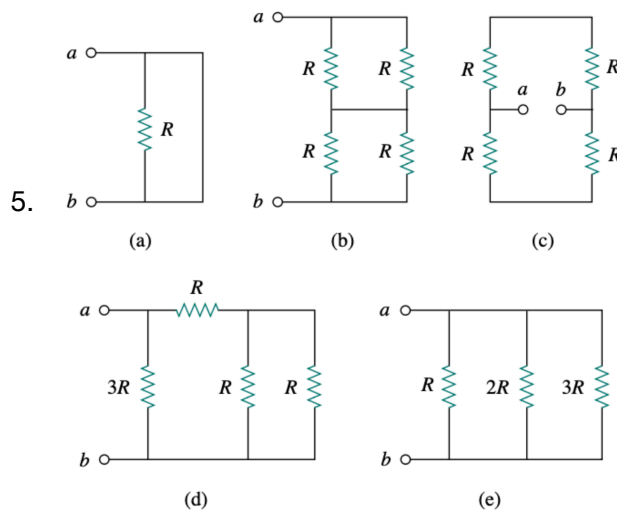


Figure 2.83 For Prob. 2.19.

2.35 Find the equivalent resistance at terminals a - b for each of the networks in Fig. 2.99.



As a design engineer, you are asked to design a lighting system consisting of a 70-W power supply and two lightbulbs as shown in Fig. 2.118. You must select the two bulbs from the following three available bulbs.

$R_1 = 80 \, \Omega$, cost = \$0.60 (standard size)

$R_2 = 90 \, \Omega$, cost = \$0.90 (standard size)

$R_3 = 100 \, \Omega$, cost = \$0.75 (nonstandard size)

6. The system should be designed for minimum cost such that $I = 1.2 \, \text{A} \pm 5 \text{ percent}$.

