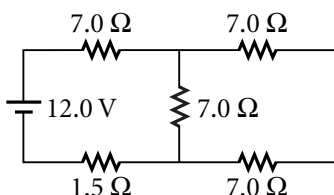
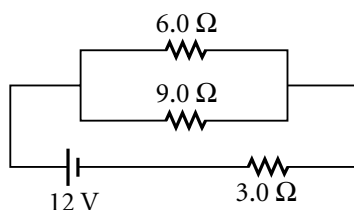


24. Find the equivalent resistance of the circuit shown in the figure below.

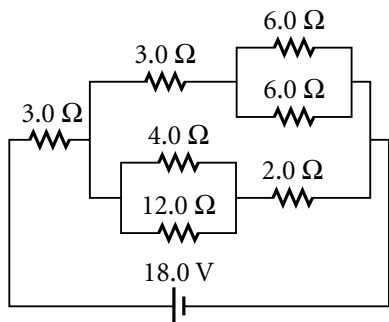


For problems 25–26, see Sample Problem D.

25. For the circuit shown below, determine the current in each resistor and the potential difference across each resistor.



26. For the circuit shown in the figure below, determine the following:
- the current in the $2.0\ \Omega$ resistor
 - the potential difference across the $2.0\ \Omega$ resistor
 - the potential difference across the $12.0\ \Omega$ resistor
 - the current in the $12.0\ \Omega$ resistor



MIXED REVIEW

27. An $8.0\ \Omega$ resistor and a $6.0\ \Omega$ resistor are connected in series with a battery. The potential difference across the $6.0\ \Omega$ resistor is measured as 12 V. Find the potential difference across the battery.

28. A $9.0\ \Omega$ resistor and a $6.0\ \Omega$ resistor are connected in parallel to a battery, and the current in the $9.0\ \Omega$ resistor is found to be 0.25 A. Find the potential difference across the battery.

29. A $9.0\ \Omega$ resistor and a $6.0\ \Omega$ resistor are connected in series to a battery, and the current through the $9.0\ \Omega$ resistor is 0.25 A. What is the potential difference across the battery?

30. A $9.0\ \Omega$ resistor and a $6.0\ \Omega$ resistor are connected in series with an emf source. The potential difference across the $6.0\ \Omega$ resistor is measured with a voltmeter to be 12 V. Find the potential difference across the emf source.

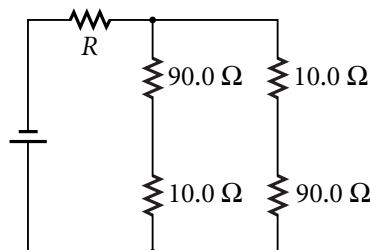
31. An $18.0\ \Omega$, $9.00\ \Omega$, and $6.00\ \Omega$ resistor are connected in series with an emf source. The current in the $9.00\ \Omega$ resistor is measured to be 4.00 A.

- Calculate the equivalent resistance of the three resistors in the circuit.
- Find the potential difference across the emf source.
- Find the current in the other resistors.

32. The stockroom has only $20\ \Omega$ and $50\ \Omega$ resistors.

- You need a resistance of $45\ \Omega$. How can this resistance be achieved using three resistors?
- Describe two ways to achieve a resistance of $35\ \Omega$ using four resistors.

33. The equivalent resistance of the circuit shown below is $60.0\ \Omega$. Use the diagram to determine the value of R .



34. Two identical parallel-wired strings of 25 bulbs are connected to each other in series. If the equivalent resistance of the combination is $150.0\ \Omega$ and it is connected across a potential difference of 120.0 V, what is the resistance of each individual bulb?