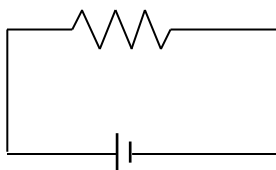


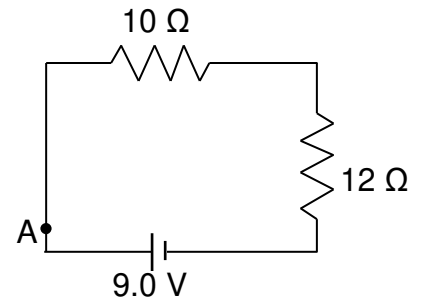
1. What is an electric circuit? (Use the definition in the book.)
2. Draw the diagram below:
 - a. Label the positive side of the battery with a + and the negative side with a -.
 - b. Indicate the electron flow with an arrow.
 - c. Indicate the direction of conventional current with a different arrow.



3. Explain what happens to the circuit when you turn a switch off.
4. A lamp connected to a 120-volt source with a short extension cord is brighter than the same lamp connected with a very long extension cord. Explain what causes the difference.
5. What units are used to measure:
 - a. Current
 - b. Resistance
 - c. Power
6. Write Ohms Law in words.
7. The current in a circuit is 1.2 amps and the resistance of the load is $15\ \Omega$. What is the voltage?
8. A flashlight uses a 1.5-volt battery and its bulb has a resistance of $40\ \Omega$. What is the current in the circuit?
9. A $25\ \Omega$ resistor draws 0.8 amps of current. How much power does it draw?
10. A fan draws 450 Watts of power. If it uses a 120-volt power source, what current does it draw?
11. Two 60-watt light bulbs are connected in series. If one bulb burns out, what happens to the brightness of the other bulb?
12. Two 60-watt light bulbs are connected in parallel. If one bulb burns out, what happens to the brightness of the other bulb?
13. Draw a circuit with two resistors and one battery:
 - a. In series.
 - b. In parallel.

14. For the circuit to the right:

- Determine the effective resistance.
- Calculate the current at Point A.
- Calculate the power drawn by the circuit.

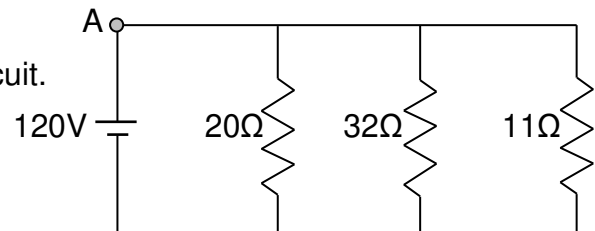


15. Resistor A is $20\ \Omega$ and Resistor B is $50\ \Omega$. Find the effective resistance if they are connected:

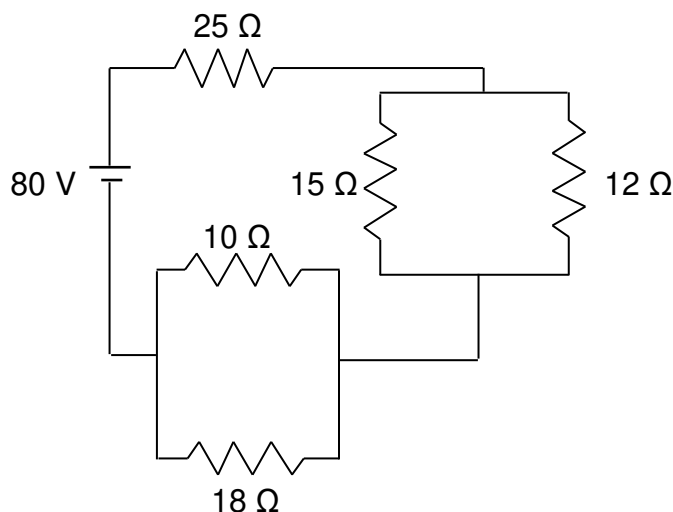
- In series
- In parallel

16. For the circuit to the right:

- Calculate the effective resistance.
- Find the current at point A.
- Calculate the power drawn by the circuit.



17. Calculate the power drawn by this circuit.

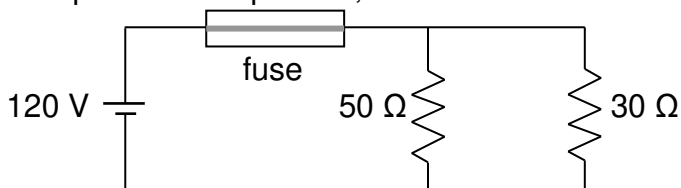


20. What do fuses do? Where are they used?

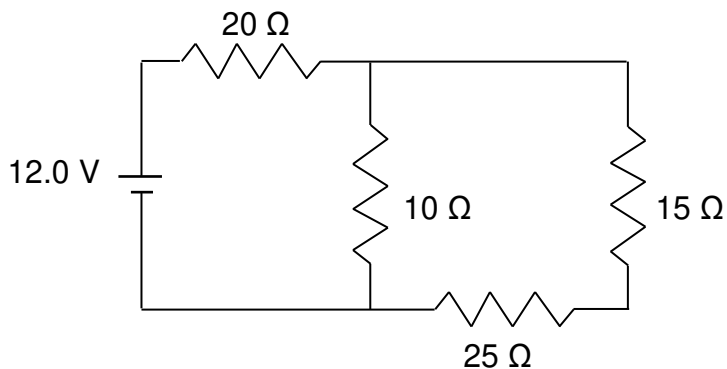
21. What's the difference between a fuse and a circuit breaker?

22. Does the electrical system in your home use fuses or circuit breakers?

23. If an electrician has 1 amp, 5 amp and 10 amp fuses, which should be used to protect this circuit?



24. Honors: For the circuit shown below, determine the current through each resistor.



25. Honors: Calculate the current through each resistor.

