

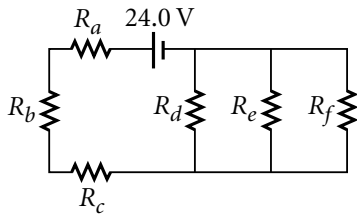
Section  
**20-3**

HOLT PHYSICS

# Concept Review

## Complex Resistor Combinations

1. The resistors in the circuit below are identical and equal  $12.0\ \Omega$ . The battery has a potential difference of  $24.0\ \text{V}$ . Ignore the internal resistance of the battery. (Sketch schematic diagrams of the intermediate circuits as you reduce the complex circuit to a simpler one.)



- a. Determine the equivalent resistance for this circuit.

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- b. Find the current in and the voltage across each resistor.


2. Resistor  $R_f$  is removed from its present position and connected in series between  $R_a$  and the battery.

- a. Sketch a diagram of the new circuit.

- b. Find the equivalent resistance of the new circuit and the current in each resistor.
