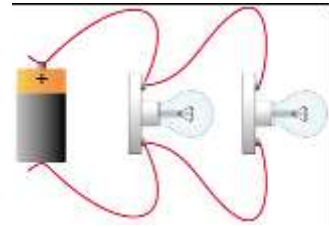
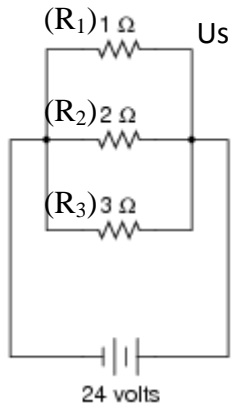


1. In the parallel circuit to the right, label the resistance (R), the potential difference (V), and the current (I).



2. Using the parallel circuit pictured below, answer questions (a) - (d).



- a. What is the voltage across each bulb?
- b. What is the current in each branch?
- c. What is the total current provided by the battery?
- d. Use the total current and the total voltage to calculate the equivalent resistance of the circuit.

3. As more and more resistors are added in parallel to a circuit, the equivalent resistance of the circuit \_\_\_\_\_ (*increases, decreases*) and the total current of the circuit \_\_\_\_\_ (*increases, decreases*).

4. A parallel circuit has 4 resistors each on different paths connected to a 120 V potential difference. The resistors have resistances of 15 Ω, 45 Ω, 60 Ω, and 80 Ω?

- a. Draw a picture of the circuit.
- b. What is the total resistance of the circuit?
- c. What is the total current flowing through the circuit?
- d. Which resistor has the most current flowing through it?

4. A parallel circuit has 3 resistors each on different paths connected to a 120 V potential difference. The resistors have resistances of 5.0  $\Omega$ , 7.5  $\Omega$ , and 9.8  $\Omega$ ?

a. Draw a picture of the circuit.

d. What is the current flowing through the 9.8  $\Omega$  resistor?

b. What is the current flowing through the 5.0  $\Omega$  resistor?

e. What is the total current flowing through the circuit?

c. What is the current flowing through the 7.5  $\Omega$  resistor?

f. What is the total resistance of the circuit?

5. A parallel circuit has 4 resistors each on different paths connected to a 45.0 V potential difference. The resistors have resistances of 5.0  $\Omega$ , 8.0  $\Omega$ , 10.0  $\Omega$ , and 12.0  $\Omega$ ?

a. Draw a picture of the circuit.

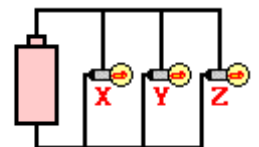
e. If another 5.0 resistor was connected on a separate parallel path, describe what would happen to the circuit's resistance?

b. What is the total resistance of the circuit?

c. What is the current flowing through the 8.0  $\Omega$  resistor?

f. If another 5.0 resistor was connected on a separate parallel path, describe what would happen to the circuit's total current?

d. What is the drop in potential difference through the 10.0  $\Omega$  resistor?



5. Which adjustments could be made to the circuit on the right that would decrease the current in the cell? Circle all that apply.

a. Increase the resistance of bulb X.

d. Decrease the resistance of bulb Z.

b. Decrease the resistance of bulb X.

e. Increase the voltage of the cell (somehow).

c. Increase the resistance of bulb Z.

f. Decrease the voltage of the cell (somehow).