

## Unit 11 – Exercise 2

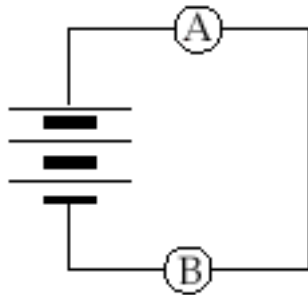


Figure 1a

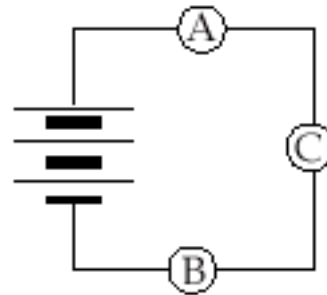
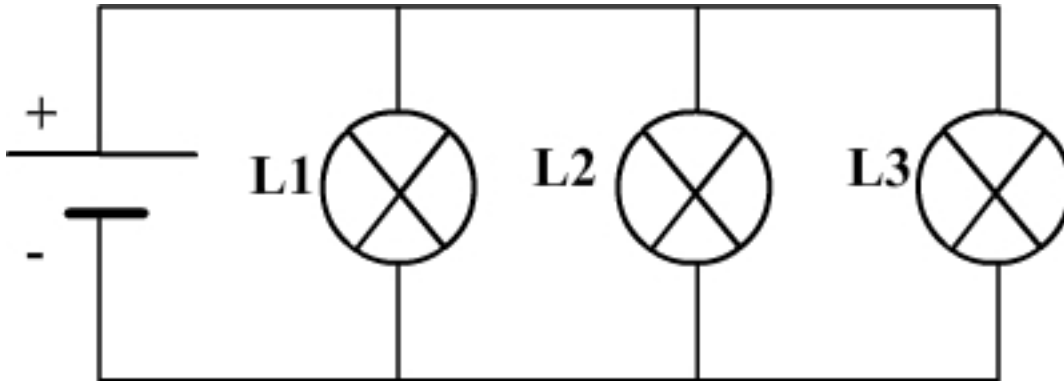


Figure 1b

- In the circuit shown in Figure 1a, bulb A and bulb B are identical and have high resistance.
  - Compared to Bulb A in Figure 1a, Bulb A in Figure 1b will be \_\_\_\_  
(1) become brighter (2) become dimmer (3) stay the same.
  - Compared to Bulb B in Figure 1a, Bulb B in Figure 1b will be \_\_\_\_  
(1) become brighter (2) become dimmer (3) stay the same
- Mark each of the following statements as True or False using Figure 1a and Figure 1b. *If the statement is false edit/alter the statement so that it becomes true.*
  - \_\_\_ a. More charge flows through the two bulb circuit than through the three bulb circuit.
  - \_\_\_ b. Charge flows at a greater rate through the two bulb circuit than through the three bulb circuit.
  - \_\_\_ c. The two bulbs in Figure 1a shine brighter than any bulbs in Figure 1b.
  - \_\_\_ d. The total resistance of the three bulbs is greater than that of the two bulbs.
  - \_\_\_ e. A compass would show a larger deflection for Figure 1a than for Figure 1b.

3. Given three of the same kind of bulb, how could you combine them to obtain the maximum resistance? The minimum resistance?



4. Use the image below to answer the following questions.

a. If bulb L2 burned out or was unscrewed, what would happen to the remaining bulbs? Justify your answer.

b. If an additional branch with a bulb, L4, was added what would happen to the overall resistance in the circuit?

c. If an additional branch with a bulb, L4, was added what would happen to the amount of current flowing in the circuit?

5. Based on your experience with series and parallel circuits, which type of circuit do you think is more useful in homes? Explain why.