

## Homework Questions – Section 2

1. In the circuits shown all bulbs are identical and have high resistance.

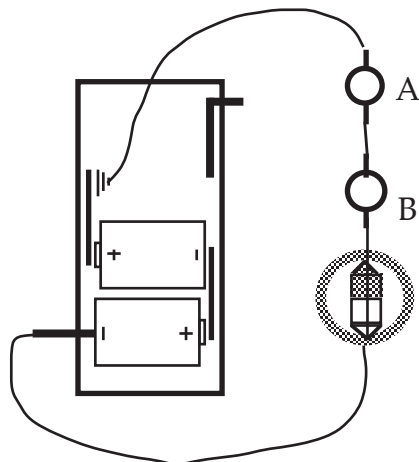


Figure 1a

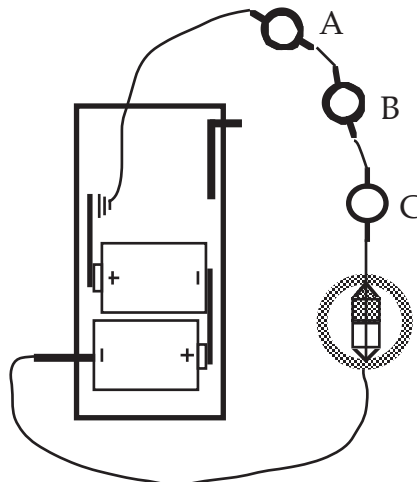


Figure 1b

(A) Draw arrowtails and starbursts on the bulbs in Figure 1a.

(B) A third identical bulb C is added to the circuit as shown in Figure 1b. Draw arrowtails and starbursts on Figure 1b, and fill in the blanks below:

(C) As the third bulb is added:

Bulb A will \_\_\_\_ (1) become brighter (2) become dimmer (3) stay the same.

Bulb B will \_\_\_\_ (1) become brighter (2) become dimmer (3) stay the same.

2. Suppose you are given two new bulbs (Brand X) which are different from the round and long bulbs you have been using. Design an experiment which you could use to determine how the resistance of these new bulbs compares to that of the round and long bulbs. Describe how you will interpret the results of the experiment.

3. List in order of resistance from lowest to highest: round bulbs, long bulbs, connecting wires. Describe the experimental evidence for your choices.

4. Refer to the circuit at the right. Originally it contained two bulbs (A and B).

(A) When bulb C was added, the brightness of bulb A –

Increased    Decreased    Remained the Same

(B) When bulb C was added, the compass needle deflection –

Increased    Decreased    Remained the Same

(C) When bulb C was added, the charge flow through the battery –

Increased    Decreased    Remained the Same

