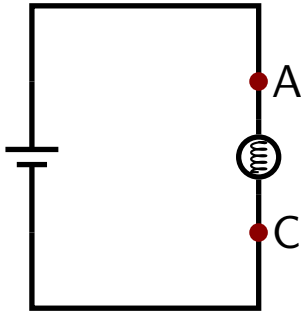


# Question 1

A bulb is connected to a battery as illustrated.

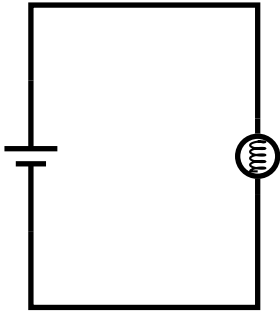


Which of the following is true for the currents at different points?

1.  $I_A = I_{\text{bulb}} = I_C$
2.  $I_A > I_{\text{bulb}} > I_C$
3.  $I_A = I_C > I_{\text{bulb}}$
4.  $I_A < I_{\text{bulb}} < I_C$

## Question 2

A bulb is connected to a battery as illustrated.



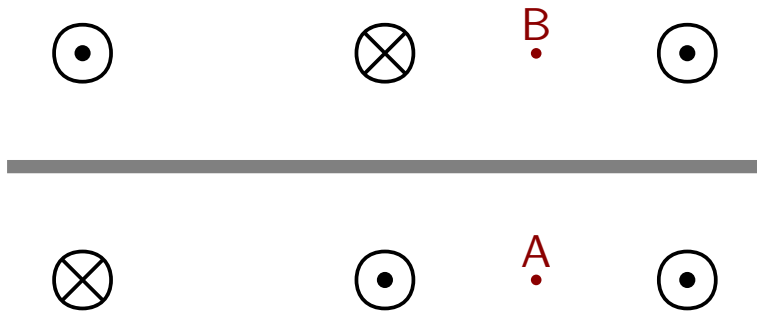
The wires offer negligible resistance.

The bulb is replaced by another with a greater resistance. Which of the following is true after this has been done?

1. Current is the same and power is the same.
2. Current decreases and power decreases.
3. Current decreases and power is the same.
4. Current increases and power increases.
5. Current increases and power is the same.

## Question 3

In two separate scenarios, three current carrying wires point out of the page as illustrated. The currents are equal in magnitude.

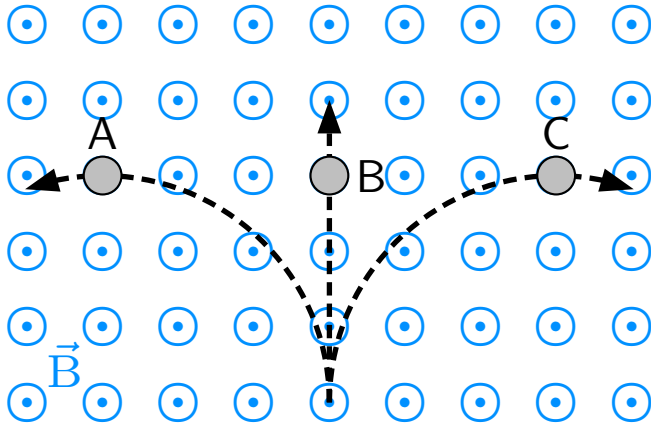


Which of the following is true?

1. The magnetic field at A is larger than at B.
2. The magnetic field at A is smaller than at B.
3. The magnetic field at A is the same as B.

## Question 4

A negatively charged particle moves with constant speed in a region containing a uniform and constant magnetic field. Three possible trajectories viewed from above are as illustrated.

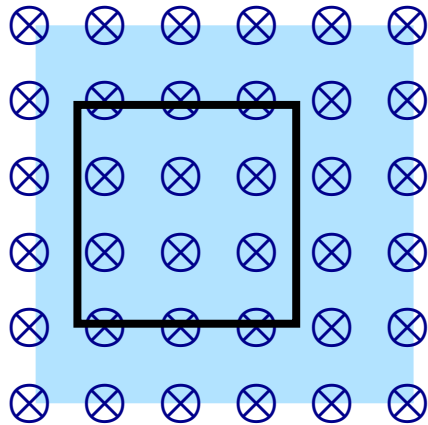


Which is a possible trajectory for the particle?

1. A
2. B
3. C

## Question 5

A loop is stationary in a region of uniform magnetic field as illustrated. The field strength decreases at a steady rate.



While the field decreases, the current in the loop is:

1. Counter-clockwise
2. Clockwise
3. Zero
4. None of the above/not enough info.