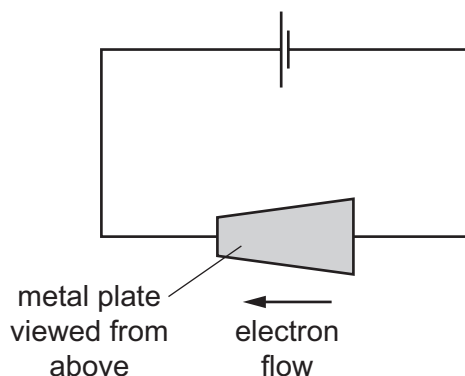


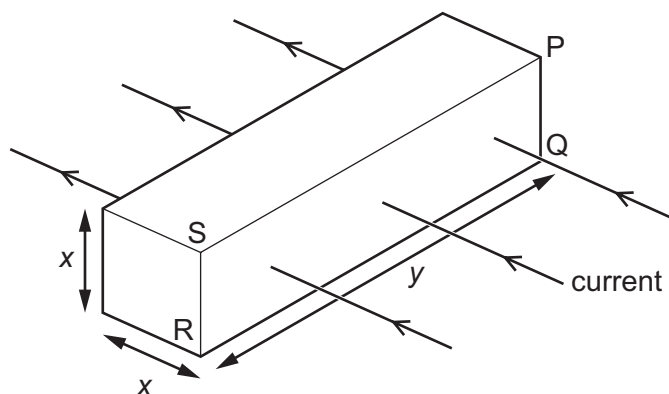
- 30 A metal plate of uniform thickness is connected to a cell as shown.



Electrons move clockwise around the circuit.

Which statement about the metal plate is correct?

- A The average drift speed of the conduction electrons decreases as they move from right to left through the plate.
  - B The average drift speed of the conduction electrons increases as they move from right to left through the plate.
  - C The number density of the conduction electrons decreases from right to left through the plate.
  - D The number density of the conduction electrons increases from right to left through the plate.
- 31 The diagram shows the direction of the current in a metal block. The charge carriers enter the block through the face PQRS and leave the block through the opposite face.



The number density of charge carriers is  $n$ . Each charge carrier has charge  $e$ . The average drift speed of the charge carriers is  $v$ .

Which expression gives the current in the block?

- A  $envx^2$
- B  $envxy$
- C  $envx^3y^2$
- D  $envx^4y$