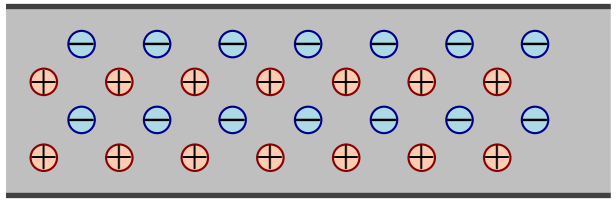
Question 1

A cross section of a wire is illustrated showing the positive atomic nuclei and negative electrons. The charges are at rest.

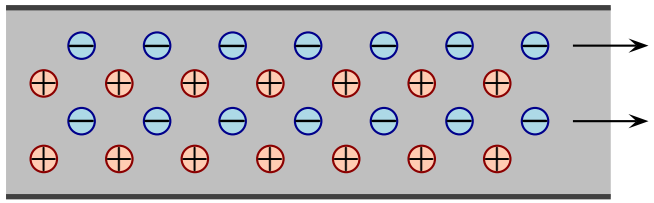


Which of the following is true?

1. The charge in the wire is neutral. There is *no* current.
2. The charge in the wire is neutral. There is *some* current.
3. The charge in the wire is not neutral. There is *no* current.
4. The charge in the wire is not neutral. There is *some* current.

Question 2

A cross section of a wire is illustrated showing the positive atomic nuclei and negative electrons. The electrons move and the protons are at rest.

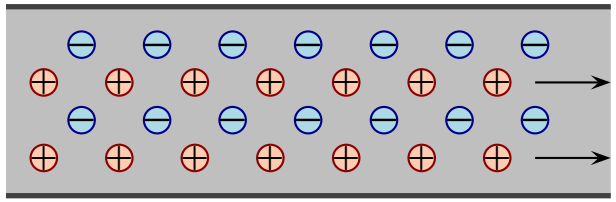


Which of the following is true?

1. The charge in the wire is neutral. There is *no* current.
2. The charge in the wire is neutral. There is *some* current.
3. The charge in the wire is not neutral. There is *no* current.
4. The charge in the wire is not neutral. There is *some* current.

Question 3

A cross section of a wire is illustrated showing the positive atomic nuclei and negative electrons. The protons move and the electrons are at rest.



Which of the following is true?

1. The charge in the wire is neutral. There is *no* current.
2. The charge in the wire is neutral. There is *some* current.
3. The charge in the wire is not neutral. There is *no* current.
4. The charge in the wire is not neutral. There is *some* current.

Question 4

Two wires are parallel and carry identical currents. The wires are observed to attract each other.

Which of the following is true?

1. The total charge of each wire is not zero and the type of charge is the same.
2. The total charge of each wire is not zero and the type of charge is different.
3. The total charge of each wire is zero.