

Question 1

Consider three electrons:

Electron A: At rest.

Electron B: Moves with high speed far from all other objects.

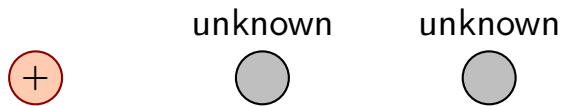
Electron C: Moves with moderate speed near a proton.

Which of the following is true?

1. Charge of B larger than charge of C, larger than charge of A.
2. Charge of C larger than charge of B, larger than charge of A.
3. Charge of B same as C, larger than charge of A.
4. All have same charge.

Question 2

Three charged particles are located as illustrated. The sizes of the charges are all the same.

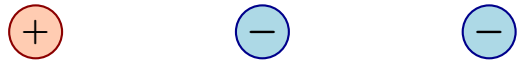


It is observed that there is no force on the middle charge. Which (choose one) of the following is true?

1. The rightmost charge is negative and the middle charge is positive.
2. The rightmost charge is positive and the middle charge is positive.
3. The rightmost charge is negative and the middle charge is negative.

Question 3

Three charged particles are located as illustrated. The sizes of the charges are all the same.

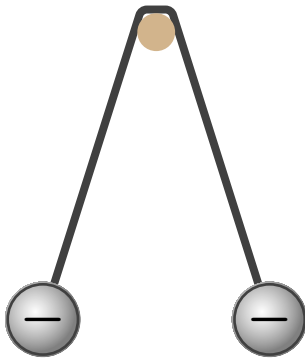


If the rightmost particle is initially at rest and is then released, which way will it eventually move?

1. The rightmost charge moves right.
2. The rightmost charge moves left.
3. The rightmost charge moves up.
4. The rightmost charge moves down.
5. The rightmost charge will not move.

Question 4

Two negatively charged metal balls are connected by a metal wire and suspended over a wooden (insulating) peg as illustrated.



A negatively charged rod is brought near to but not touching the peg.

Which of the following best occurs as the rod approaches the peg?

1. The balls stay in the same place.
2. The balls move closer together.
3. The balls move further apart.