

Question 1

A metal plate is charged with a total charge of -3.2×10^{-11} C. The charge is produced entirely by excess electrons (more than the number of protons in the metal).

Approximately how many excess electrons are there on the metal plate?

1. 3.2×10^{-11}
2. 3.2×10^{11}
3. 3.2×10^{-8}
4. 3.2×10^8

Question 2

A 5.0 m wire has uniformly distributed charge with linear charge density λ .

Which of the following represents the charge in a segment of length 2.0 m?

1. 0.20λ
2. 0.40λ
3. λ
4. 2.0λ
5. 4.0λ
6. 5.0λ

Question 3

A wire with length L has uniformly distributed charge with linear charge density λ_i . The wire is stretched so that the total charge never changes and it always remains uniformly distributed.

Suppose that the wire is stretch to length $4L$. Which of the following is the linear charge density once this has been done?

1. $\lambda_i/4$
2. λ_i
3. $4\lambda_i$