Coulomb's Law (Two charges)

A proton and an electron are 2.0×10^{-10} m apart. Calculate the magnitude of the electrostatic force between them.

The charge of a proton is $q_1 = 1.6 \times 10^{-19}$ C.
The charge of an electron is $q_2 = -1.6 \times 10^{\square}$ C.
The Coulomb constant is approximately $k = \square.0 \times 10^9$ N · m²/C².

By Coulomb's law, the electrostatic force is:

$$F = k\frac{|q_1 q_2|}{\square^2}$$

Plugging in values, the magnitude of the force is:

$$F = 5.\square \times 10^{-\quad} \quad \text{N}$$

LIVEWORKSHEETS