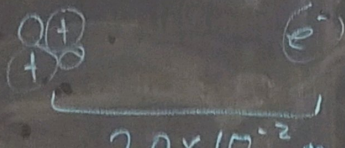
Classwork Pt 1

Find the electric force between an alpha particle & an electron that are 2.0 cm apart



2×10^{-2} m

$q_1 = 3.2 \times 10^{-19}$ C

$q_2 = -1.6 \times 10^{-19}$ C

Coulomb's Law $F_e = \frac{k q_1 q_2}{r^2}$

Electric Force $= \frac{(\text{Coulomb's constant})(\text{charge 1})(\text{charge 2})}{(\text{Distance between charges})^2}$

$k = 8.99 \times 10^9 \frac{N m^2}{C^2}$

$$F_e = \frac{(8.99 \times 10^9 \frac{Nm^2}{C^2})(3.2 \times 10^{-19} C)(-1.6 \times 10^{-19} C)}{(2 \times 10^{-2} m)^2}$$

$$F_e = \boxed{-1.15 \times 10^{-24} N}$$