

$$\textcircled{1} \quad \text{Electrons} = \frac{-1.602 \times 10^{-19} \text{ C}}{+1.602 \times 10^{-19} \text{ C}} = \frac{1e}{+1.602 \times 10^{-19}}$$

$$\text{Electrons} = 6.24 \times 10^{18}$$

$$\text{Microcoulomb} = 1 \mu\text{C} = 10^{-6} \text{ C}$$

$$2.00 \mu\text{C} = 2 \times 6.24 \times 10^{18} \times 10^{-6}$$

$$= 12.48 \times 10^{12}$$

$$\approx 1.25 \times 10^{13}$$

$$\textcircled{2} \quad \text{Force} = k \frac{q_1 q_2}{r^2}$$

$$1 \text{ N} = \frac{9 \times 10^9 \text{ N} \cdot \text{m}^2 / \text{C}^2 \times 1.0 \text{ C} \times q_2}{15 \text{ m}^2}$$

$$q_2 = \frac{225}{9 \times 10^9}$$

$$= 25 \times 10^{-9} \text{ C}$$

$$= 25 \text{ nC}$$