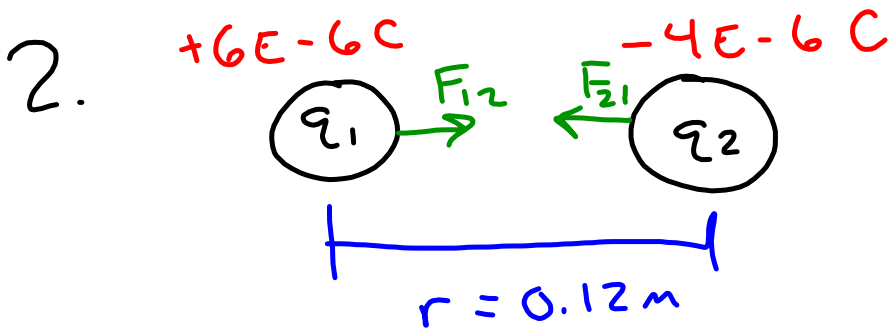


Coulomb's Law PS

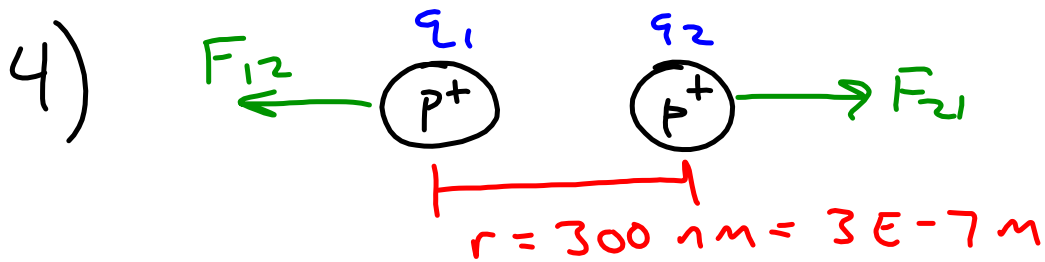


$$F_{21} = \frac{k q_1 q_2}{r^2}$$

$$= \frac{(9 \times 10^9 \frac{\text{N} \cdot \text{m}^2}{\text{C}^2})(6 \times 10^{-6} \text{ C})(4 \times 10^{-6} \text{ C})}{(0.12 \text{ m})^2}$$

$$= 15 \text{ N}$$

$$\vec{F}_{21} = 15 \text{ N left}$$



$$F_{12} = \frac{k q_1 q_2}{r^2}$$

$$= \frac{(9 \times 10^9 \frac{\text{N} \cdot \text{m}^2}{\text{C}^2}) (1.6 \times 10^{-19} \text{ C}) (1.6 \times 10^{-19} \text{ C})}{(3 \times 10^{-7} \text{ m})^2}$$

$$= 2.56 \times 10^{-15} \text{ N}$$

$$\vec{F}_{12} = 2.56 \times 10^{-15} \text{ N} \quad \text{left}$$

ELECTRIC FIELDS

- Charged particles have electric fields
 - Field points towards negative charges
 - Field points away from positive charges

