

$$q_A = q_B = +1.0 \mu\text{C} = +1.0 \times 10^{-6} \text{C}$$

$$q_C = -1.0 \mu\text{C} = -1.0 \times 10^{-6} \text{C}$$

$$r_{AB} = r_{BC} = .50 \text{ m}$$

$$r_{AC} = 1.0 \text{ m}$$

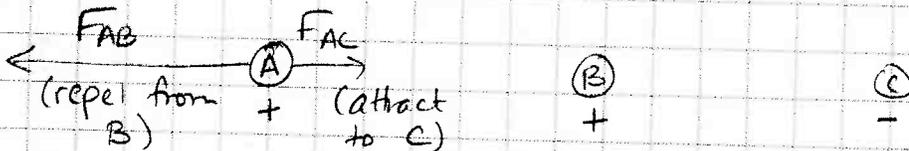
a) Calculate F_{AB} and F_{AC}

$$F_{AB} = \frac{k \cdot q_A \cdot q_B}{r_{AB}^2} = \frac{(9.0 \times 10^9 \text{ N} \cdot \text{m}^2/\text{C}^2)(+1.0 \times 10^{-6} \text{ C})(+1.0 \times 10^{-6} \text{ C})}{(.5 \text{ m})^2}$$

$$F_{AB} = .036 \text{ N}$$

$$F_{AC} = \frac{k \cdot q_A \cdot q_C}{r_{AC}^2} = \frac{(9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{C}^2)(+1.0 \times 10^{-6} \text{ C})(-1.0 \times 10^{-6} \text{ C})}{(1.0 \text{ m})^2}$$

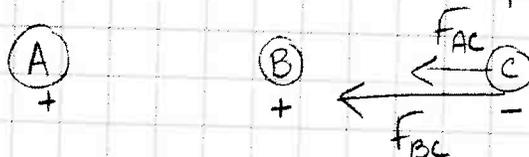
$$F_{AC} = .009 \text{ N}$$



$$F_{\text{net}} = .036 \text{ N} - .009 \text{ N}$$

$$F_{\text{net}} = .027 \text{ N} \text{ (left)}$$

b) $F_{BC} = .036 \text{ N}$ (same amount as F_{AB})
 $F_{AC} = .009 \text{ N}$ (same as part a)



(Both forces
are attracted
to +)

$$F_{\text{net}} = .036 + .009$$

$$F_{\text{net}} = .045 \text{ N} \text{ (left)}$$