



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

F_1 and F_2 are forces on the charge Q since two charges of 2 nC .

$$F_1 = 9 \times 10^9 \cdot \text{N} \cdot \text{m}^2 / \text{C}^2 \left(\frac{(2 \text{ nC})(5.8 \text{ nC})}{\left(1 \text{ cm} \left(\frac{10^{-2} \text{ m}}{1 \text{ cm}}\right)\right)^2} \right) = 1.04 \times 10^{-3} \text{ N}$$

$$F_2 = 9 \times 10^9 \cdot \text{N} \cdot \text{m}^2 / \text{C}^2 \left(\frac{(2 \text{ nC})(5.8 \text{ nC})}{\left(1 \text{ cm} \left(\frac{10^{-2} \text{ m}}{1 \text{ cm}}\right)\right)^2} \right) = 1.04 \times 10^{-3} \text{ N}$$

$$F = F_1 \sin 60^\circ + F_2 \sin 60^\circ$$

$$= (1.04 \times 10^{-3} \text{ N}) \sin 60^\circ + (1.04 \times 10^{-3} \text{ N}) \sin 60^\circ$$

$$= 2(1.04 \times 10^{-3} \text{ N}) \sin 60^\circ$$

$$= .001801$$

$$\approx \boxed{1.8 \times 10^{-3} \text{ N}}$$