Coulomb Force in One Dimension (1)

Find net force on charge q_0 due to charges q_1 and q_2.

Consider x-component of force.

$$F_0 = +k\frac{|q_1 q_0|}{(3.5\text{m})^2} - k\frac{|q_2 q_0|}{(1.5\text{m})^2} = +3.67 \times 10^{-7}\text{N} - 7.99 \times 10^{-7}\text{N} = -4.32 \times 10^{-7}\text{N}.$$

Find net force on charge q_2 due to charges q_1 and q_0.

$$F_2 = -k\frac{|q_1 q_2|}{(2.0\text{m})^2} + k\frac{|q_2 q_0|}{(1.5\text{m})^2} = -5.62 \times 10^{-7}\text{N} + 7.99 \times 10^{-7}\text{N} = +2.37 \times 10^{-7}\text{N}.$$