

## Electric Field Strength Math Help

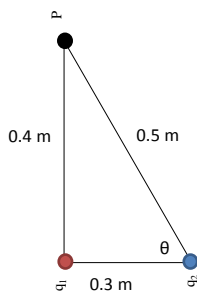
$$E = K \frac{q}{r^2}$$

A charge of  $7 \times 10^{-6}$  C is at the origin and a charge of  $-5 \times 10^{-6}$  C is on the x-axis at 0.3 meters. (See below) Find the electric field strength at point "P", which is 0.4 meters above charge 1 on the y-axis.

$$q_1 = 7 \times 10^{-6} \text{ C}$$

$$q_2 = -5 \times 10^{-6} \text{ C}$$

$$E = K \frac{q_A}{r^2}$$



Givens:

$$r_{1,2} = 0.3 \text{ meters}$$

$$r_{1,p} = 0.4 \text{ meters}$$

$$r_{2,p} = 0.5 \text{ meters}$$

$$q_1 = 7 \times 10^{-6} \text{ C}$$

$$q_2 = -5 \times 10^{-6} \text{ C}$$

$$K_C = 8.99 \times 10^9 \text{ N}\cdot\text{m}^2/\text{C}^2$$

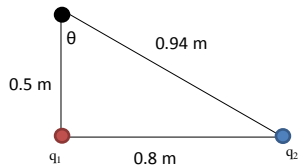
$$\theta = 53.1^\circ$$

$$E_p = \underline{\hspace{2cm}}$$

A charge ( $q_1$ ) of  $5 \times 10^{-6}$  C is at the origin and a second charge ( $q_2$ ) of  $-3 \times 10^{-6}$  C is located 0.8 meters to the right. What is the electric field at a point on the y-axis that is 0.5 m above  $q_1$ ?

$$q_1 = 5 \times 10^{-6} \text{ C} \quad q_2 = -3 \times 10^{-6} \text{ C}$$

$$E = K \frac{q}{r^2}$$



Givens:

$$r_{1,2} = 0.8 \text{ meters}$$

$$r_{1,p} = 0.5 \text{ meters}$$

$$r_{2,p} = 0.94 \text{ meters}$$

$$q_1 = 5 \times 10^{-6} \text{ C}$$

$$q_2 = -3 \times 10^{-6} \text{ C}$$

$$K_c = 8.99 \times 10^9 \text{ N}\cdot\text{m}^2/\text{C}^2$$

$$\theta = 58^\circ$$

$$E_p = \underline{\hspace{2cm}}$$