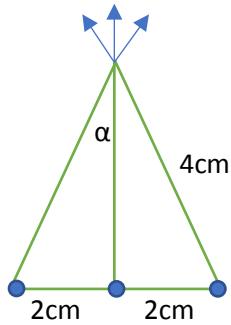


Answer on Question #69554, Physics / Electromagnetism

Question: q1,q2,q3 charges placed on a bisector triangle in a straight line q1,q3 at edges and q2 at center P is a point placed at top of the triangle. q1=q2=-q3=2uc. distance between q1q2=q2q3=2cm,pq1=pq3= 4cm.determine the magnitude and the direction of the electric field at point P.

Solution:



$$\vec{E} = \vec{E}_1 + \vec{E}_2 + \vec{E}_3.$$

$$E = E_1 + 2E_2 \cos\alpha = \frac{kq}{r_1^2} + \frac{2kq}{r_2^2} \frac{\sqrt{12}}{2} = 9 * 10^9 * 2 * \frac{10^{-6}}{4*10^{-4}} + 9 * 10^9 * 4 * \frac{10^{-6}}{16*10^{-4}} \frac{\sqrt{12}}{2} = (4.5 + 3.89) * 10^7 = 8.39 * 10^7 \frac{N}{C} \text{ (upwards)}$$

Answer: $8.39 * 10^7 \frac{N}{C}$ (upwards)

Answer provided by <https://www.AssignmentExpert.com>