



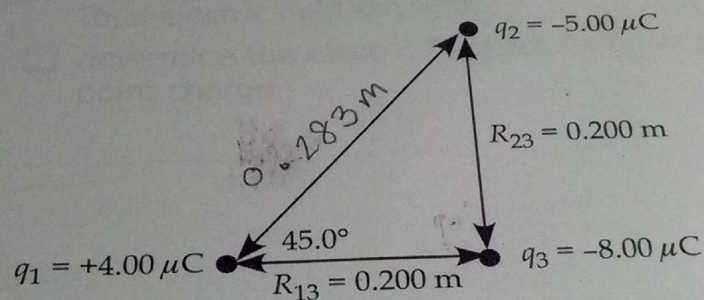
Assignment 7.3

Coulomb's Law in Two Dimensions (6 MARKS)

The following assignment must be submitted to your tutor/ marker for evaluation. Be sure to show all your work and explain the method of arriving at your answers. Submit this assignment, along with all the other assignments from Modules 6 and 7, after you have completed Module 7.

The physics of three charges in a plane

Three charges, q_1 , q_2 , and q_3 , lie in a plane, as shown below.



Find the net force on charge q_2 .

$$R_{12}^2 = R_{13}^2 + R_{23}^2$$

$$R_{12}^2 = (0.200)^2 + (0.200)^2$$

$$\sqrt{R_{12}^2} = \sqrt{0.0800}$$

$$R_{12} = 0.283 \text{ m}$$

Assignment 7.3: Coulomb's law in Two Dimensions (continued)

Method of Assessment

The total of six marks for this assignment will be determined as follows:

- 1 mark for determining R_{12}
- 1 mark for determining the force \vec{F}_{21}
- 1 mark for determining the force \vec{F}_{23}
- 1 mark for determining the x -component of the net force
- 1 mark for determining the y -component of the net force
- 1 mark for determining the total net force