

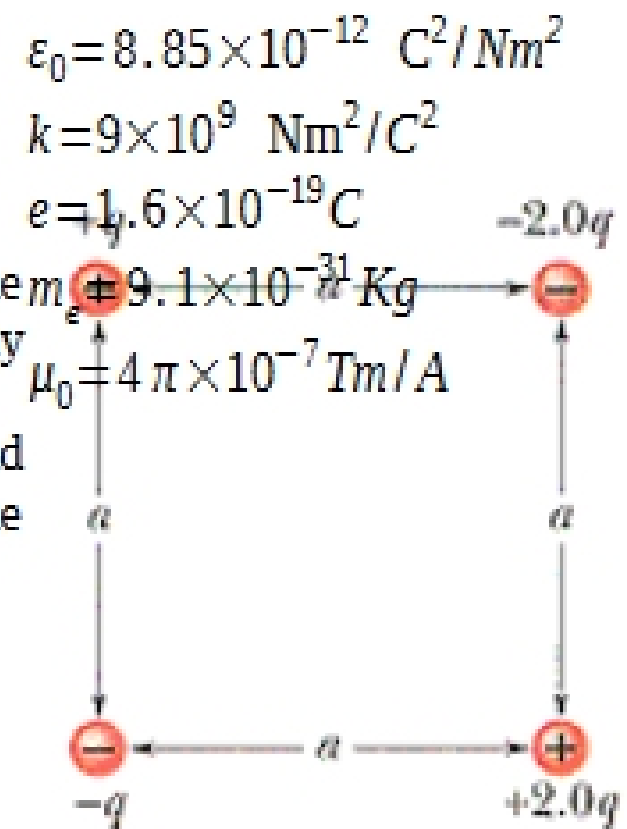
Phy2049 – Physics for Engineers and Scientists II

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EXAMINATION #1

PROBLEM #1

- (a) What are the magnitude and direction of the electric field at the center of the square of the figure below in terms of q , a and any other constants that you need. [20]
- (b) Suppose that by magic the positive charges in the upper left and the lower right of the diagram suddenly went on vacation to the Planet Mongo. Now what is the Electric Field at the center? [10]

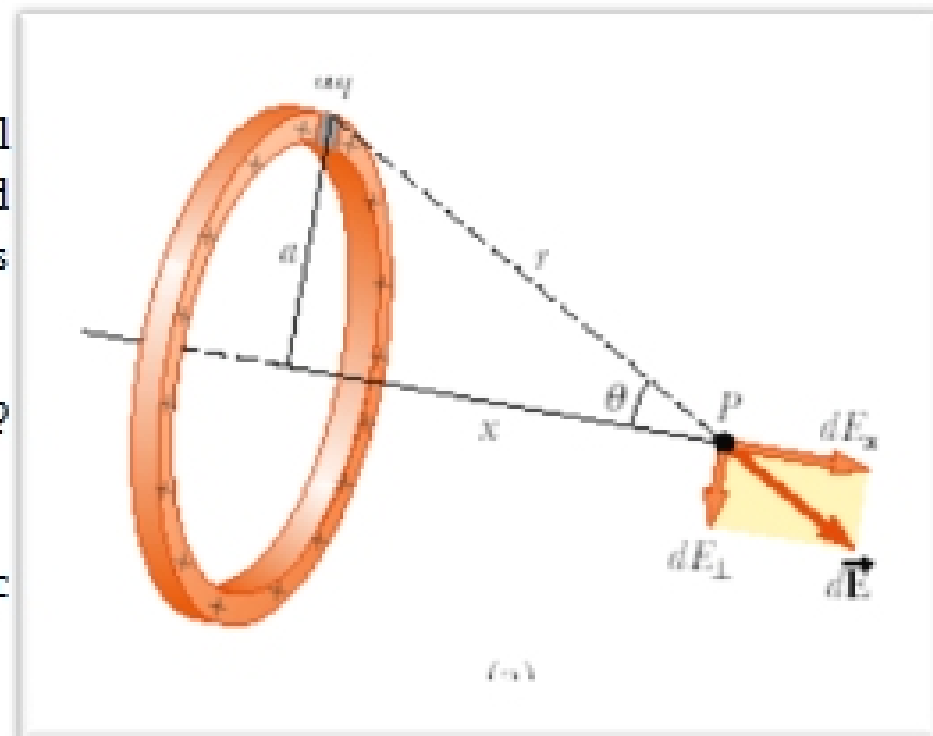


PROBLEM #2

Consider a thin ring of charge of radius a with a total charge Q residing on it as shown in an exaggerated fashion in the figure to the right. Point P is on the axis of the ring a distance x from the plane of the ring.

(a) What is the linear charge density λ along the ring? [10]

(b) What are the x and y components of the electric field at point P ? [25]



Name _____ PID _____

PROBLEM #4

The electrons in a particle beam have a kinetic energy K . What are the magnitude and direction of the Electric Field that will stop these electrons in a distance d ? [10]