# Chapters 22/23 (021)

A uniform electric field exists in a region between two oppositely charged plates. An electron, released from rest from the negative plate, strikes the other plate with a speed of 1.2*10**6 m/s, 15 nanoseconds after its release.
What is the distance between the plates?

   A1 0.90 cm
   A2 1.1 cm
   A3 1.4 cm
   A4 1.7 cm
   A5 2.0 cm

Four point charges are placed at the corners of a square as shown in figure 2.What is the magnitude of the electric field at the center of the square?

   A1 5.66*k*q/(a**2(
   A2 2.83*k*q/(a**2(
   A3 22.6*k*q/(a**2(
   A4 1.41*k*q/(a**2(
   A5 zero
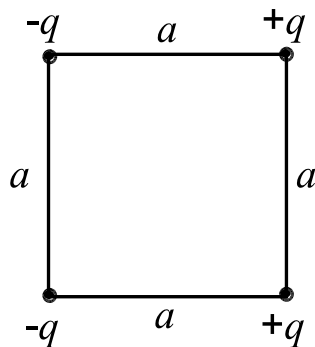
Charges q1 and q2 are on the x-axis. q1 is at x = a and q2 is at x = 2a. The net force on a third charge at the origin is zero.
Which of the following is TRUE?

  A1 q2 = -4*q1
  A2 q2 = -2*q1
  A3 q2 = -q1
  A4 q2 = 2*q1
  A5 q2 = 4*q1

An electric dipole has a dipole moment of magnitude 2.0*10**-9 C.m. The dipole is placed in an external electric field whose strength is 300 N/C, with its dipole moment initially perpendicular to the field.

The electric field rotates the dipole until it is aligned parallel to the field. How much work is done by the electric field?

  A1 +6.0*10**(-7) J
  A2 -6.0*10**(-7) J
  A3 +12*10**(-7) J
  A4 -12*10**(-7) J
  A5 zero