A potential difference of 10,000 V exists between two parallel plates which are separated by 10 cm. An electron is released from the negative plate at the same instant a proton is released from the positive plate.

(a) What is the kinetic energy of each particle as they reach the opposite sides? State your answer in units of Joules and electron volts.

(b) With what velocity does each of the particles hit the opposite plates?

(c) What is the electric field strength between the plates?

(d) What is the acceleration of each particle?

(e) How far from the positive plate do the two particles pass each other?