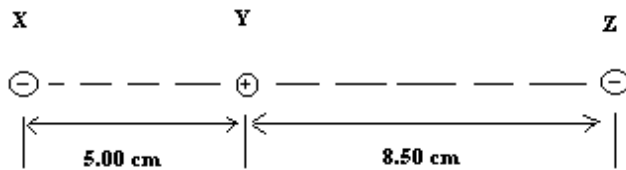
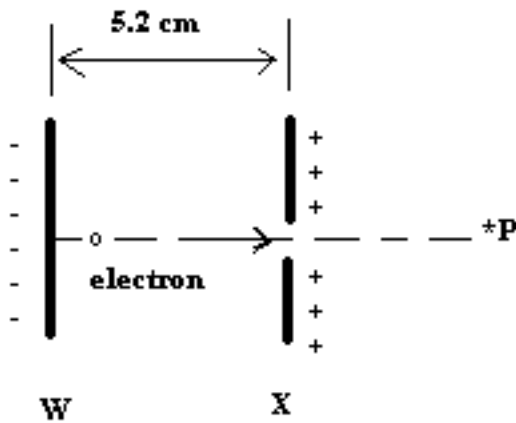


## 12 Physics Assignment Chapter 7

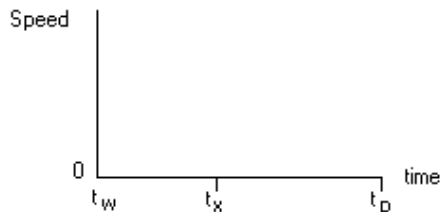
- In a Millikan-type experiment, two horizontal parallel plates are 3.5 cm apart. A sphere of mass  $4.2 \times 10^{-17}$  kg remains stationary when the potential difference between the plates is 5.00 V with the upper plate positive.
  - Is the sphere positively or negatively charged? Explain.
  - Calculate the magnitude of charge on the sphere.
  - How much excess or deficit of electrons does the sphere have?
- Charged spheres X and Y are in a set position and have charges  $-2.4 \times 10^{-3}$  C and  $+3.3 \times 10^{-2}$  C, respectively. Calculate the net force on sphere Z, of charge  $-1.7 \times 10^{-6}$  C.



- Two parallel plates labelled W and X are separated by 5.2 cm. The electric potential between the plates is 150 V. An electron starts from rest at time  $t_w$  and reaches plate X at time  $t_x$ . The electron continues through the opening and reaches point P at time  $t_p$ . (Remember:  $e = -1.6 \times 10^{-19}$  C and the mass of an electron is  $9.1 \times 10^{-31}$  kg.)



- Sketch the speed-time graph on the axes below.



- Determine the kinetic energy of the electron as it arrives at plate X.