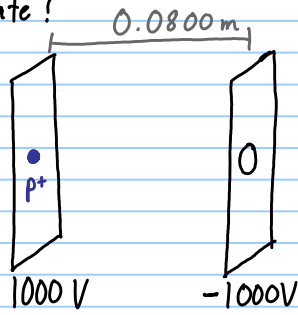
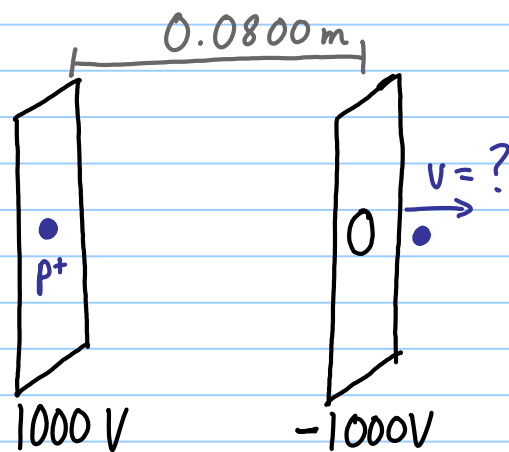


1) A proton is accelerated from rest by the charged plates as shown. At what speed does it leave the right hand plate?





$$\Delta E_k = -\Delta E_p \quad \checkmark$$

$$= 3.2 \times 10^{-16} \text{ J}$$

$$\Delta E_p = \Delta V q \quad \checkmark$$

$$= (-2000 \text{ V})(1.6 \times 10^{-19} \text{ C})$$

$$= -3.2 \times 10^{-16} \text{ J} \quad \checkmark$$

$$\Delta E_k = E_{kf} = \frac{1}{2} m v_f^2 \quad \checkmark$$

$$v_f = \sqrt{\frac{2 E_k}{m}} = \sqrt{\frac{2(3.2 \times 10^{-16})}{(1.67 \times 10^{-27})}} = 6.19 \times 10^5 \text{ m/s} \quad \checkmark$$