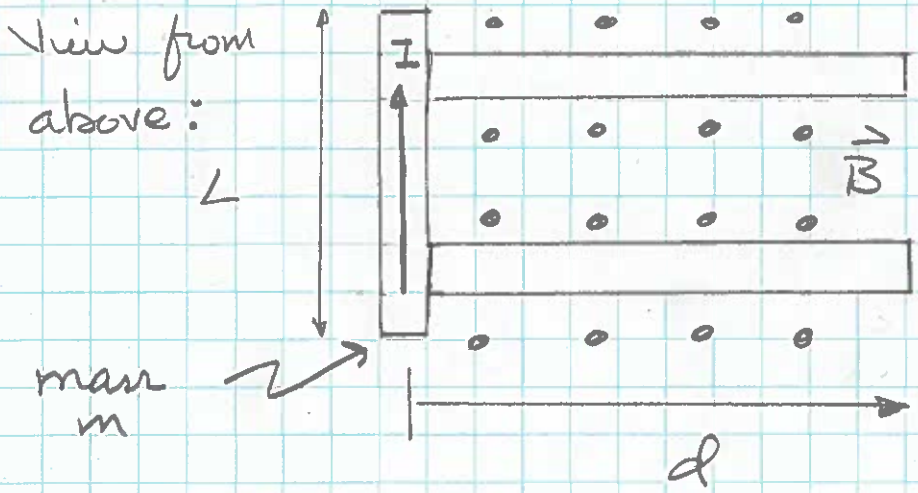


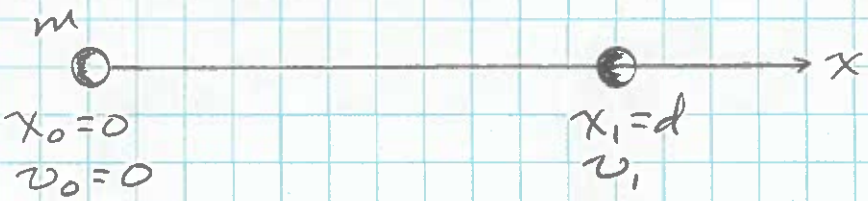
a.) $\vec{F} = I\vec{L} \times \vec{B}$ $\Rightarrow$ current in up in this sketch (into page in text) for force to the right.

b.) $\vec{F} = I\vec{L} \times \vec{B} = (ILB, \text{right})$

$\vec{F} = m\vec{a} \Rightarrow \vec{a} = \left(\frac{F}{m}, \text{right}\right)$

So: $a = \frac{ILB}{m}$ = constant

Now 1D kinematics:



$v_1^2 = v_0^2 + 2a\Delta x$ $\qquad \Delta x = x_1 - x_0 = d$

$= 2\frac{ILB}{m}d$

$\therefore \quad v_1 = \sqrt{\frac{2ILBd}{m}}$