

Physics 11**Lecture Problem 2 Solution**

(a) By the right hand rule: fingers in direction of \mathbf{v} and \mathbf{B} out of the palm—force is initially up, so the proton is deflected up.

(b) Use the force formula:

$$qB = \frac{mv}{r} \longrightarrow r = \frac{mv}{qB} = \frac{(1.67 \times 10^{-27})(4.2 \times 10^6)}{(1.6 \times 10^{-19})(.22)} = 0.2 \text{ m}$$