

6(a)	$F_B = F_E$
	<i>either:</i> $Bqu = qE$ and $E = V/d$ leading to $u = V/Bd$ <i>or:</i> $Bqu = qV/d$ leading to $u = V/Bd$
6(b)	$E_k = \frac{1}{2}mu^2$
	$u = \sqrt{[(2 \times 4.1 \times 10^{-17}) / (3.2 \times 10^{-27})]}$ $= 1.6 \times 10^5 \text{ms}^{-1}$
	$B = 980 / (3.6 \times 10^{-2} \times 1.6 \times 10^5)$ $= 0.17 \text{ T}$
6(c)	expression is independent of mass and charge
6(d)	<i>either:</i> electric <u>force</u> is downwards so magnetic force is upwards <i>or:</i> no resultant <u>force</u> so magnetic force is upwards
	(positive ions so) current is from left to right
	from (Fleming's) left-hand rule, magnetic field is into the page
6(e)	curved path inside plates with consistent direction of curvature and with no discontinuity at entry or in curvature
	direction of deflection is upwards