

1. a) • See lecture 1 slides

• "to a small constant"

= You might be off by  $\times 3$ ,  
depending on  $\Lambda$   
definition

b) • See lecture 2 slides

2. • Start from the  
Lorentz force eq.

• What do you know  
about motion parallel  
to  $B$ , which simplifies  
problem?

• They are not given,  
so you need to fix  
initial velocity and position

3. • What quantities  
are conserved?

4. a) • Max drift velocity  
 $\Rightarrow v_{||} = ?$

b), c), d) • No hints