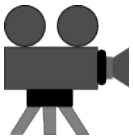
How was the exam last night?

A) *Way* too hard - no fair!
B) Hard, but fair
C) Reasonable...
D) Seemed like a good test (as tests go)



Filming Next Class

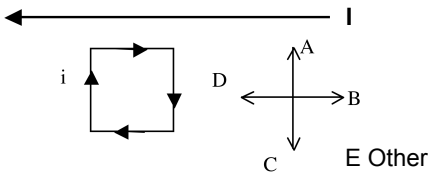
We will have visitors filming our class Friday.

This is for use in a video (for other teachers / the public) on how to use the PhET simulations in teaching.

IF YOU DO *NOT* WISH TO BE FILMED
sit on the upper-left hand side of the room (as you're facing me).

Questions? Email Stephanie.Chasteen@colorado.edu

A rectangular loop of wire (with CW current i) is near a long straight wire carrying current I. What is the direction of the net force on the rectangular loop, due to the B-field from the long, straight wire?



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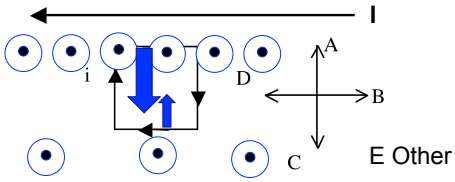
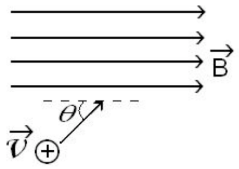


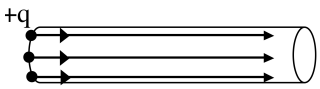
A proton enters a uniform B field. The proton makes an angle with the B field. What path will the proton follow?



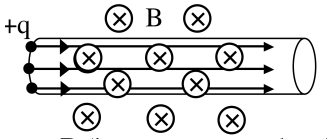
A. Helical motion
B. Straight line
C. Circular motion
D. This situation is impossible. The velocity of the proton should always be perp to B

TRUE (A) or FALSE (B): While a charged particle circles around in a spectrometer, the magnetic field is doing exactly zero work on it at all times.

Charges (+q) flows right through a narrow wire,

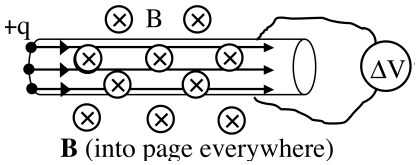


Charges (+q) flows right through a narrow wire, which sits in a uniform B field pointing INTO the page.



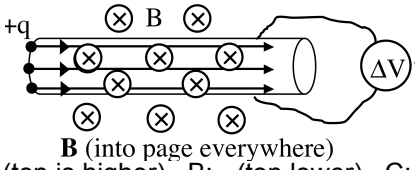
B (into page everywhere)

Charges (+q) flows right through a narrow wire, which sits in a uniform B field pointing INTO the page.



B (into page everywhere)

Charges (+q) flows right through a narrow wire, which sits in a uniform B field pointing INTO the page. ΔV between top and bottom of the tube is

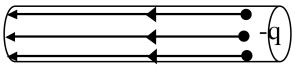


B (into page everywhere)

A: + (top is higher) B: - (top lower) C: 0

Hint: The B-field makes the + charges "pile up" somewhere. Where?

What if it was a stream of negative charges flowing *left* through the tube?



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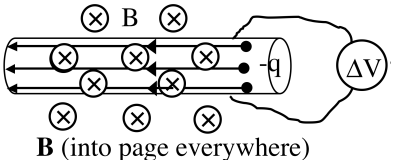

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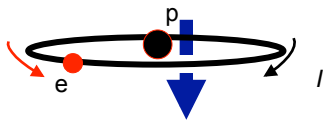
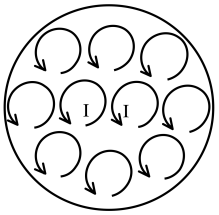
Simple view on the hydrogen atom
(Bohr model)



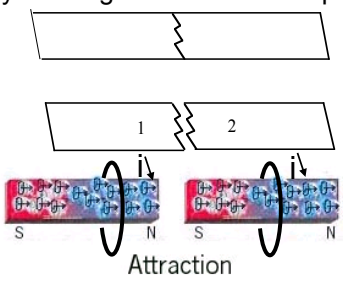
According to this model does the H atom have a magnetic moment?
A: Yes, the direction is up
B: Yes, the direction is down
C: No

A piece of wire (viewed "head on") has many atoms all lined up as shown. Do the B fields of the atoms...

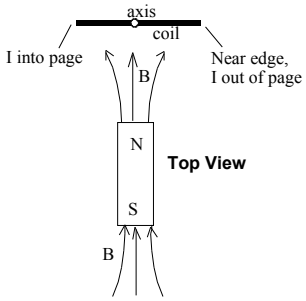


A) Add up B) Pretty much cancel out

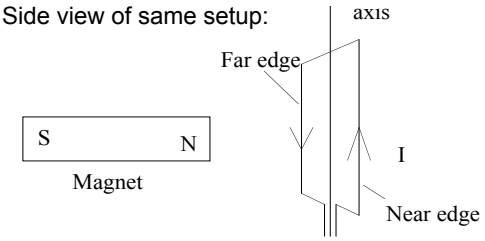
A permanent bar magnet is broken in half. Can you visualize WHY the pieces attract or repel by thinking about current loops inside?



A bar magnet is near a square current loop. The magnet is perpendicular to the plane of the loop. The loop can rotate freely about the axis.



Side view of same setup:



The loop tends to rotate so that the near edge moves: A: ➔ B: ← C: no motion