

# Class 13



PHY 232  
Spring 2003  
Prof. S. Billinge

# Announcements

- Quiz 2 – look at LONCAPA
  - If you see \* it means “1”
- Quiz 3 – should have heard from scoring office directly
- Exam 2 next Thursday
  - 50 minutes, Closed book
  - Bring #2 pencil, ID, calculator, 1x 8.5x11 handwritten sheet
  - Tibor will teach Tuesday class – will spend some time on review
  - Get help in helproom where possible

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# Concepts

1. Inductance
  1. Property of an inductor
  2. An inductor is a coil/solenoid
  3. Inductors are circuit components like capacitors and resistors
  4. Inductance is designated by  $L$ , units are the henry, H.
2. RL circuits
3. Energy stored in magnetic fields

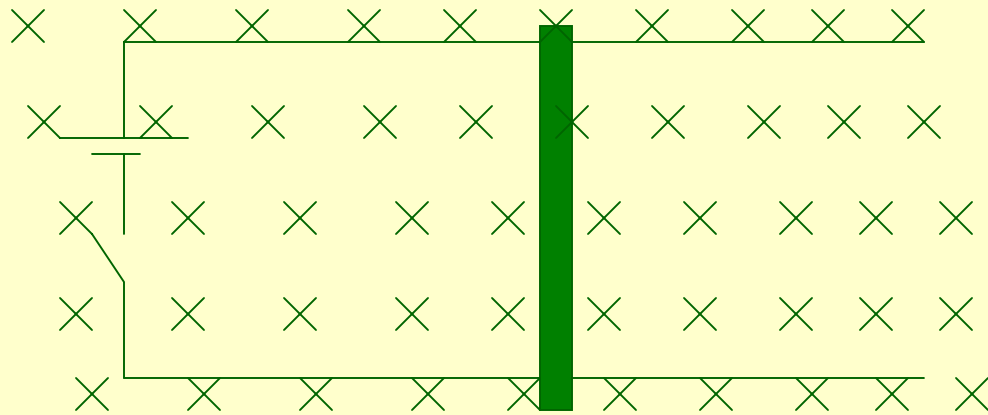


# Problem solving

- Inductance is important in circuits where current changes with time
- Behaves a bit like a capacitance, only different...remember the similarities and differences
- Use Lenz's law to help figure out what will happen



When I close the switch the  
moveable, conducting bar  
will:



1. Stay still
2. Begin moving to the right
3. Begin moving to the left

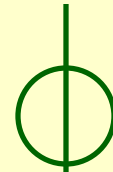
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You decide to steal electricity from the electric company inductively. You should:

1. Tape a coil flat against the mains line (and hire a lawyer)
2. Tape a coil perpendicular to the mains line (and hire a lawyer)
3. Wind a coil around the mains line (and hire a lawyer)
4. Forget it, pay your electric bill instead of the lawyer



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