

Hello, world!

Welcome to EE100  
for Spring 2005!

Today → Course Intro.

Waiting lists → Syllabus Grade

etc.  
Course homepage: <http://inst.eecs.berkeley.edu/~ee100>

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Note Title

1/20/2005

News goopi:

[http://groups-beta.google.com/  
group/ucherkelengclass00](http://groups-beta.google.com/group/ucherkelengclass00)

(E) Waitlist Issue: LabSpace!;

(1) M 3-6 is morning  
to W 5:30-8:30 pm

Tu } 8:00 AM  
W } - 11:00 AM  
Th }

Labs

meal

enrollment: TU 5:30 - 8:30 pm

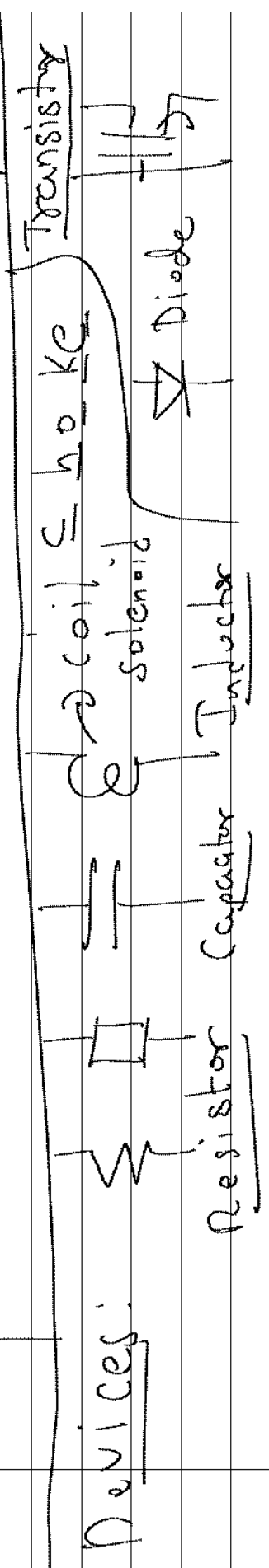
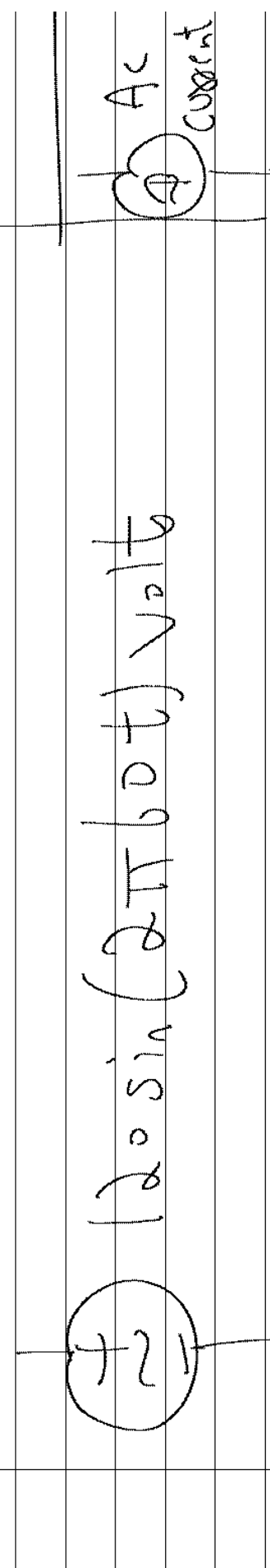
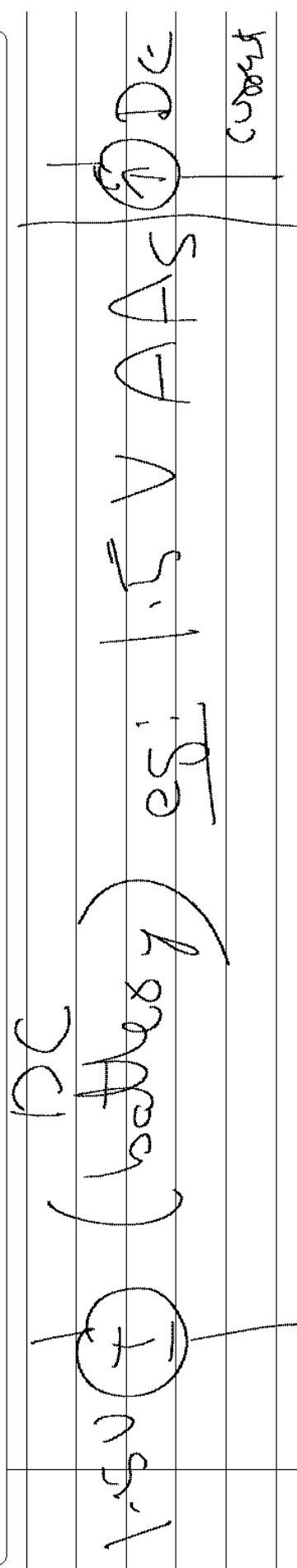
24

EE

Two laws' KCL, KVL

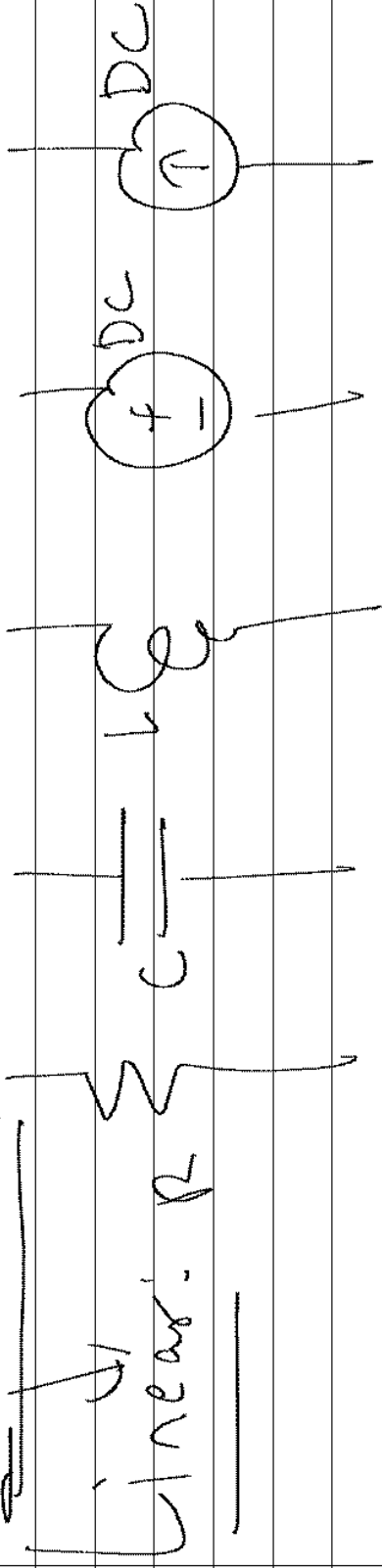
1/18/2005

Note Title

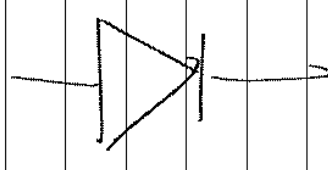


# Linear vs. Nonlinear

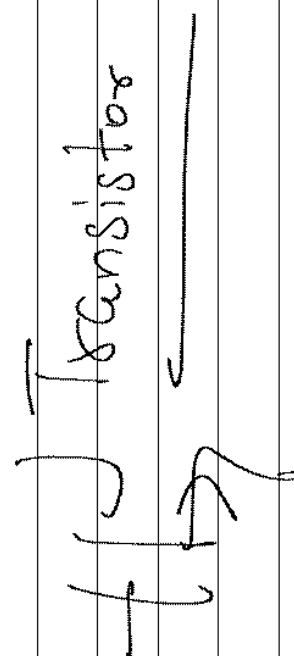
MIDTERM



Nonlinear



Diode



Transistor

[HARD!]

# Chapter 1 - Circuit Variables

↓  
is an interconnection of

circuit elements.

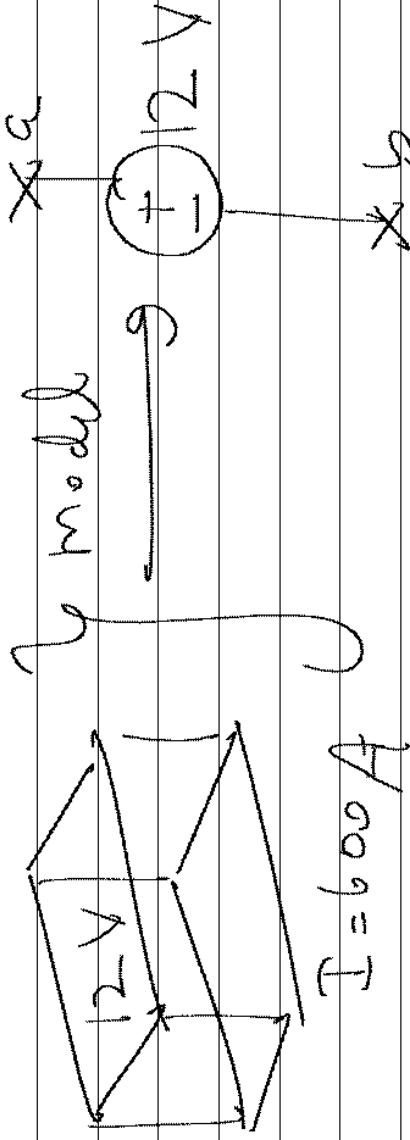
↓  
is a model for a physical device.

# Circuit elements

Note Title

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Example:



$$V_a - V_b = 12 \text{ V}$$

Battery

$$\Leftrightarrow V_b - V_a = -12 \text{ V}$$

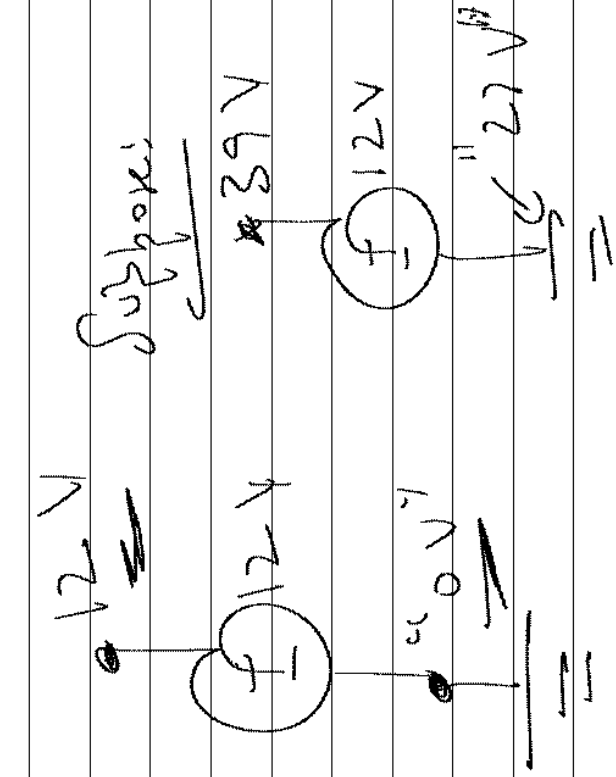
# Analogy to ME: Potential Energy

Note Title

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$$\Delta P.E = mgh$$

$$h = 0$$





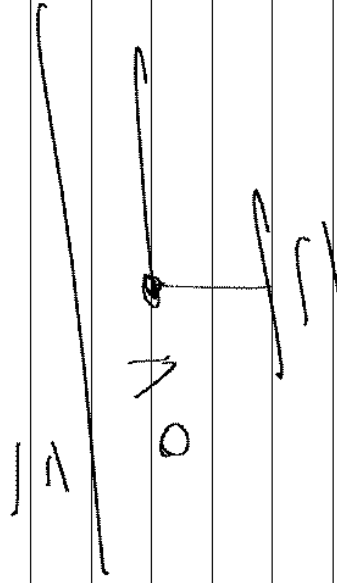
About  $\frac{1}{2}$

Note Title

1/18/2005

(W) Read Lab I

(2)  $\frac{1}{2} \sqrt{12-A}$

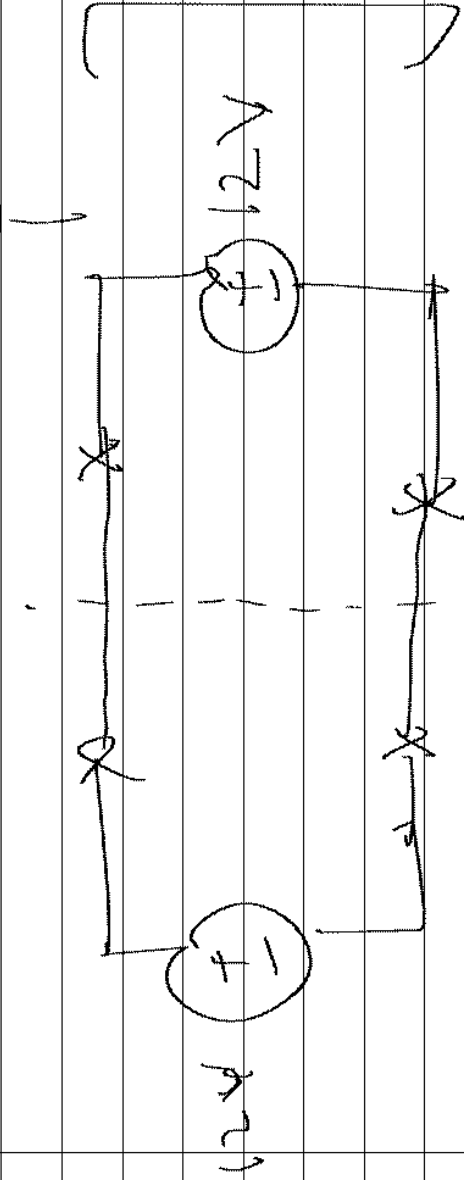


# Getting back to the battery

Note Title

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Circuit elements:  $\oplus$  12V

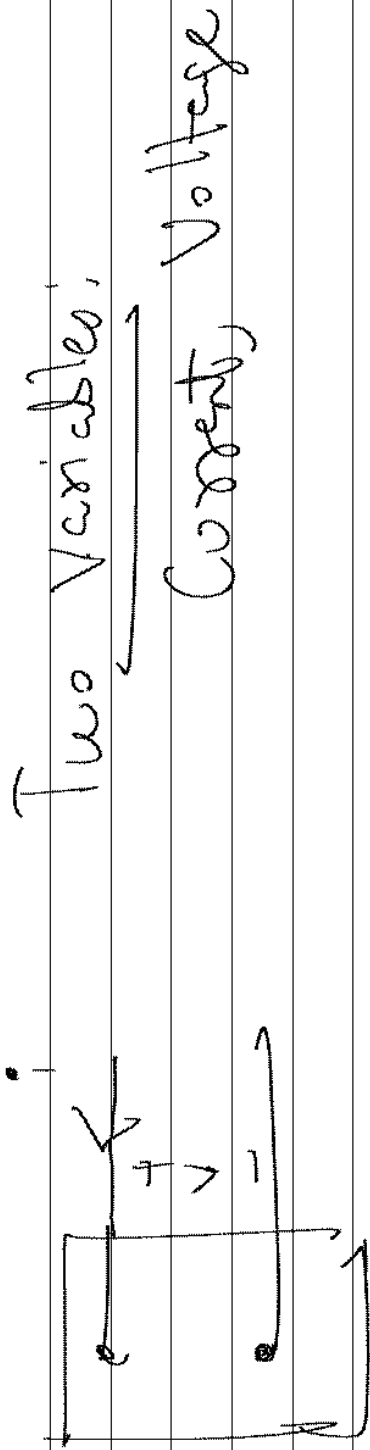


Car 1 | Car 2 | Mathematically,  
charging  $\rightarrow$  circuit theory deals with topology  $\times$

# Circuit Variables

Note Title

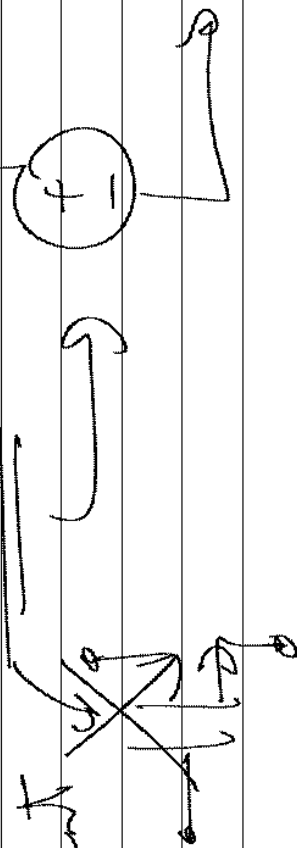
1/18/2005



"black box"

denotes some 2-terminal

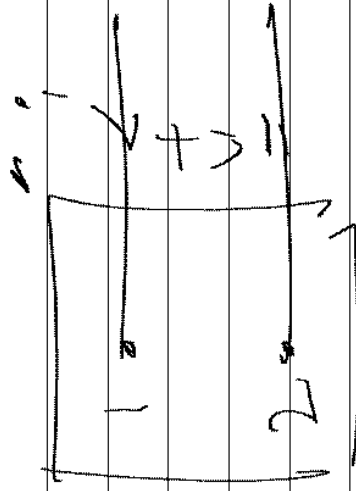
circuit element



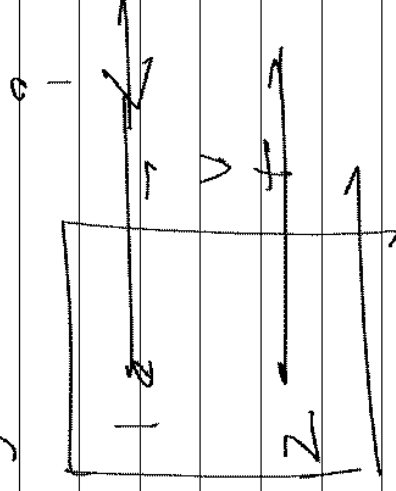
# Circuit Variables (contd.)

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$\infty$



Conventions:  $V = f(i)$

$V = -f(i)$

# Circuit Variables

Note Title

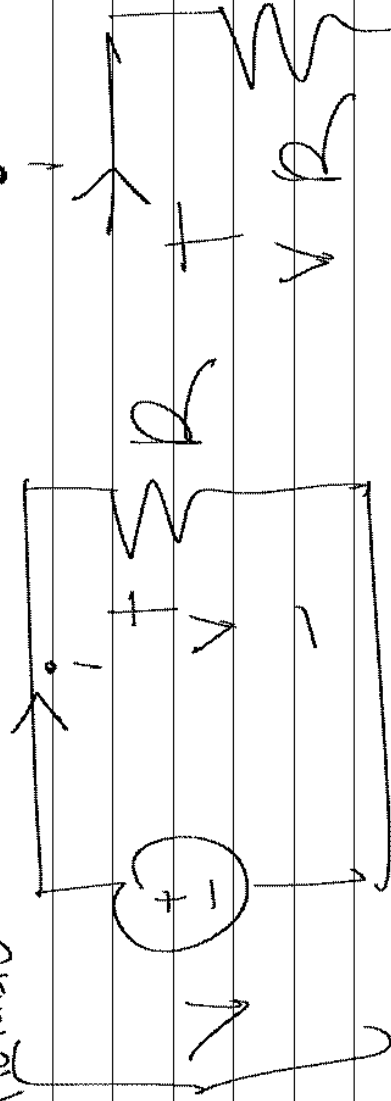
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Current is a flow of electrons

Ummm... not really tove

Device:

CONVENTIONAL  
FLOW



$$\Leftrightarrow V = iR$$

OHM'S

(Law)

ELLECTRON  
FLOW

