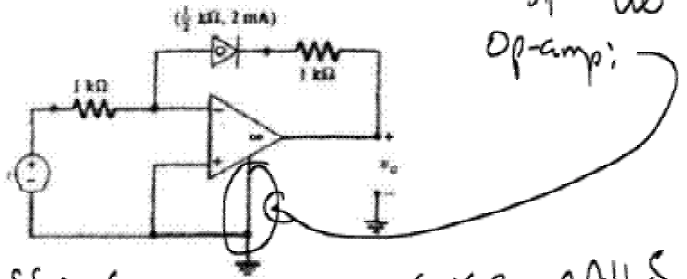
Lecture 26 — GRAPHICAL METHODS

Administrivia

- Last H.W set due on Friday 04/29 @ 1:00 pm
- Corrections → Problem 2, ignore the -ve rail of the op-amp;



ASSUME OP-AMP NEVER RAILS

- Semester is almost over!
  - Only one more lecture 😮
  - Your responsibility
    - Start checking your scores online, I will update them by Thursday morning. Error: POST ON GOOGLE GROUPS, DO NOT EMAIL ME! WE WILL NOT ACCEPT CORRECTIONS AFTER 5:00 pm, 05/06/05 !

↳ FINISH PROJECT. Although project report is due on 05/06/05 @5:00pm, all I need in the report (max. 2 pages):

- ↳ how to improve the project
- ↳ Difficulties encountered
- ↳ Qualitative explanation of how your circuit works.

Turn it into H.W box. (one / group)

Project is graded on neat wiring & how well your circuit works. Do TURN IN A REPORT, IF NOT I WILL ASSUME YOU DIDN'T DO THE PROJECT.

!!! TRY TO FINISH PROJECT BY THIS WEEK!!!

Note: Since final exam (Friday the 13th ☹) is cumulative, PREPARE!!!!! Do NOT slack off! → Talk next week

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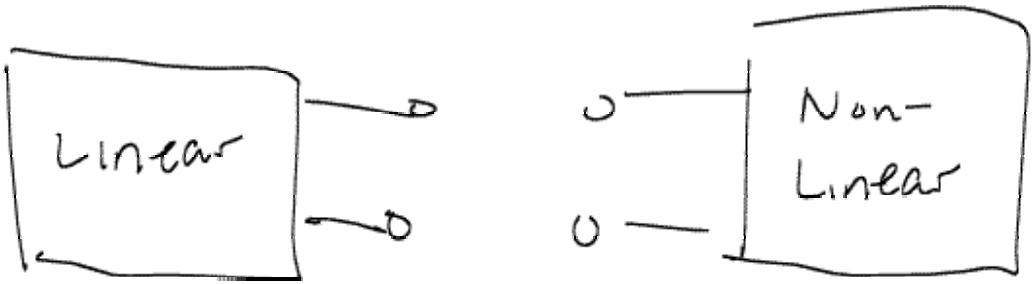
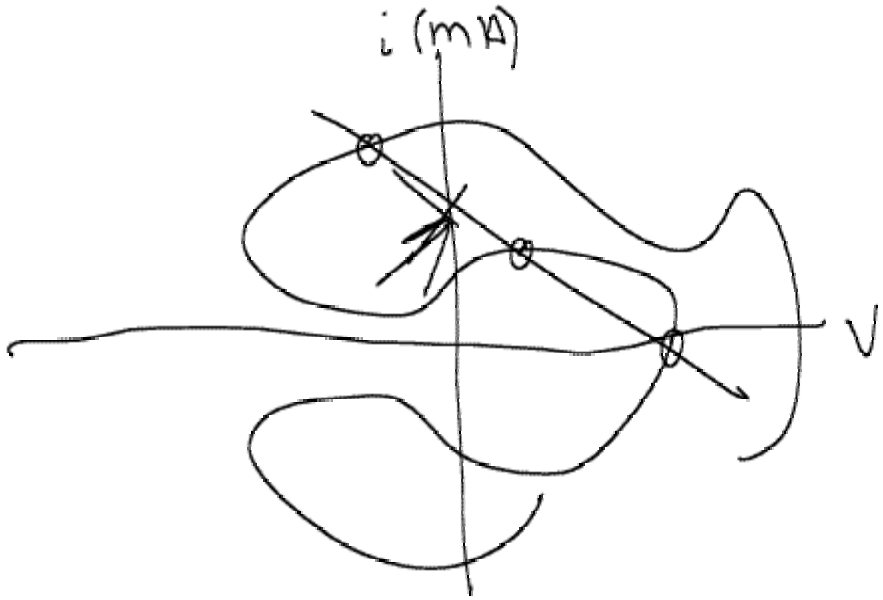
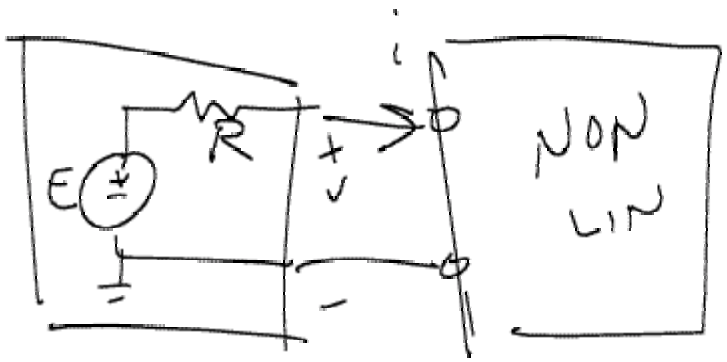
Load-line method:





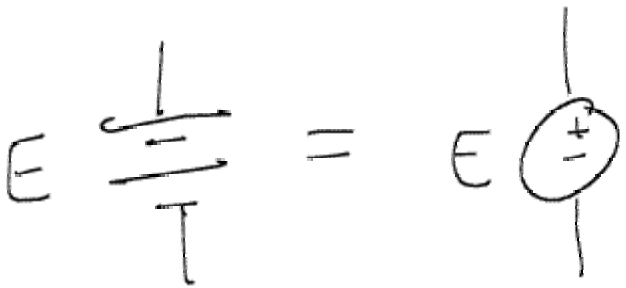


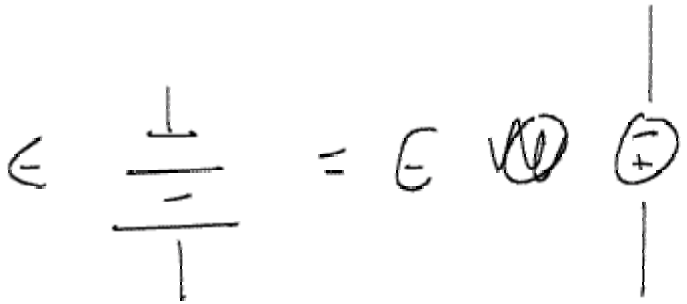
$$E - iR = V$$

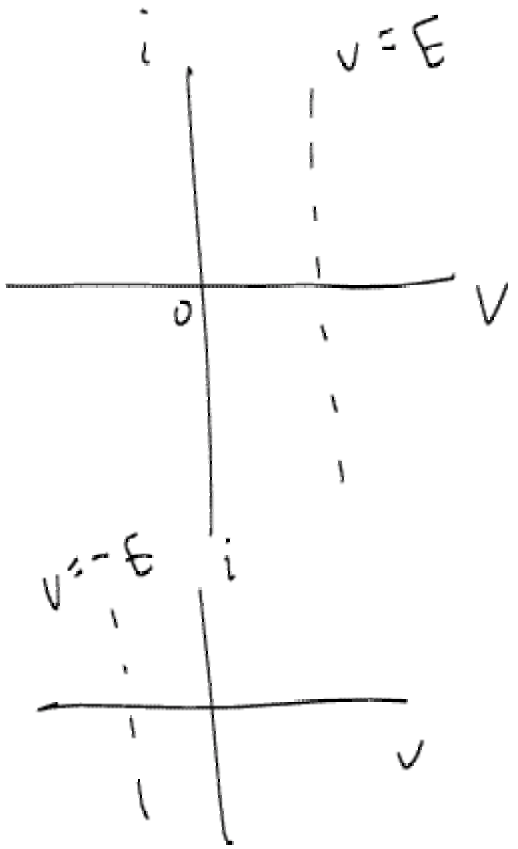
$$E - v = iR$$

$$i = \frac{1}{R}(E - v)$$

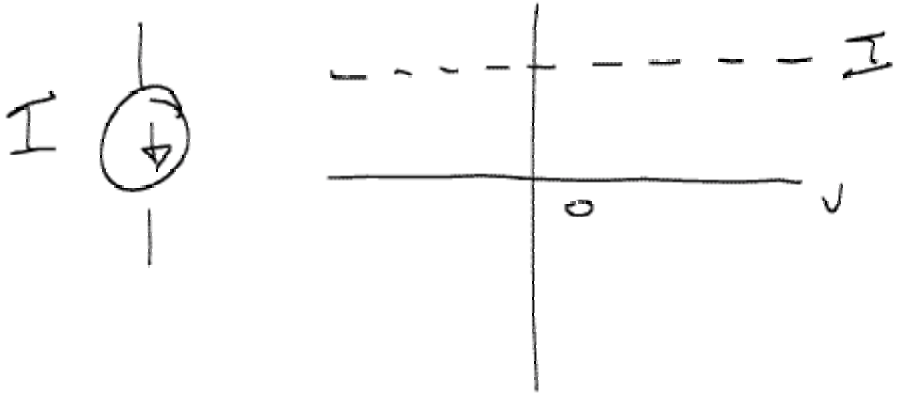
Graphical Method:

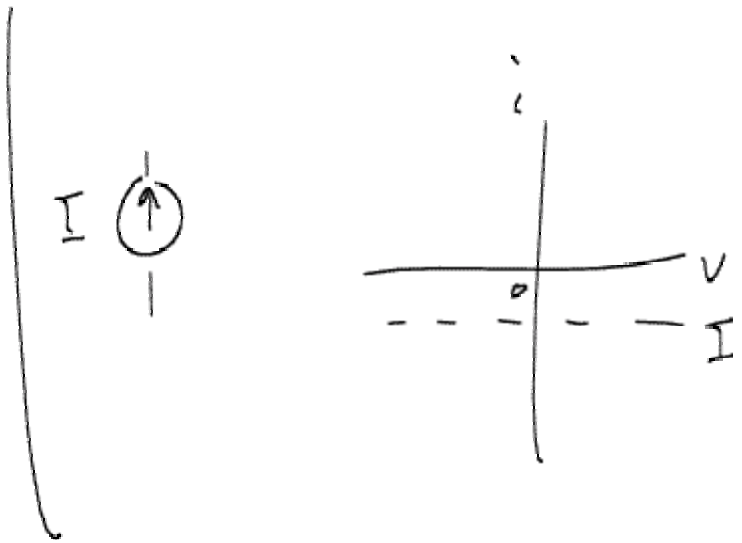






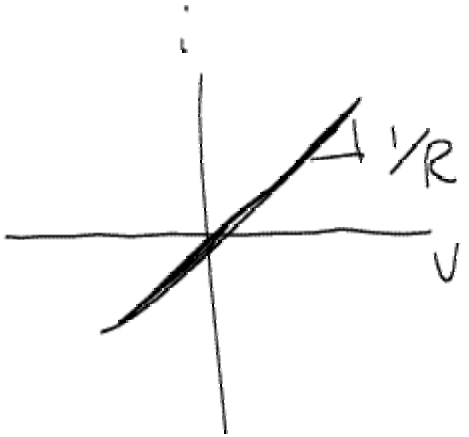
Current Sources



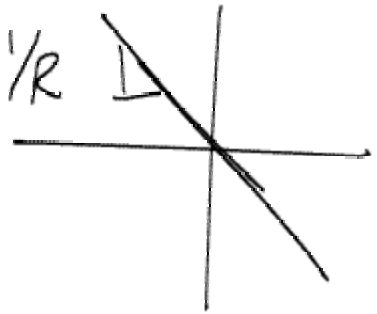


Resistors

$$i = \frac{V}{R}$$

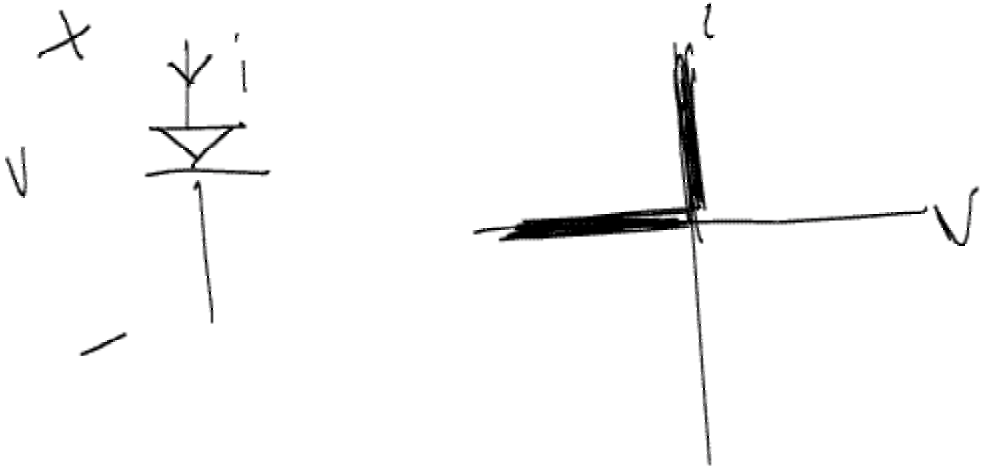


if R<0

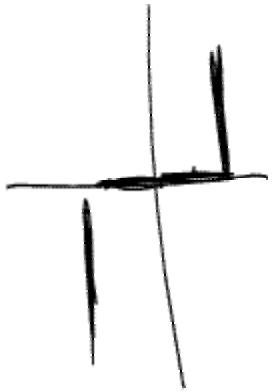


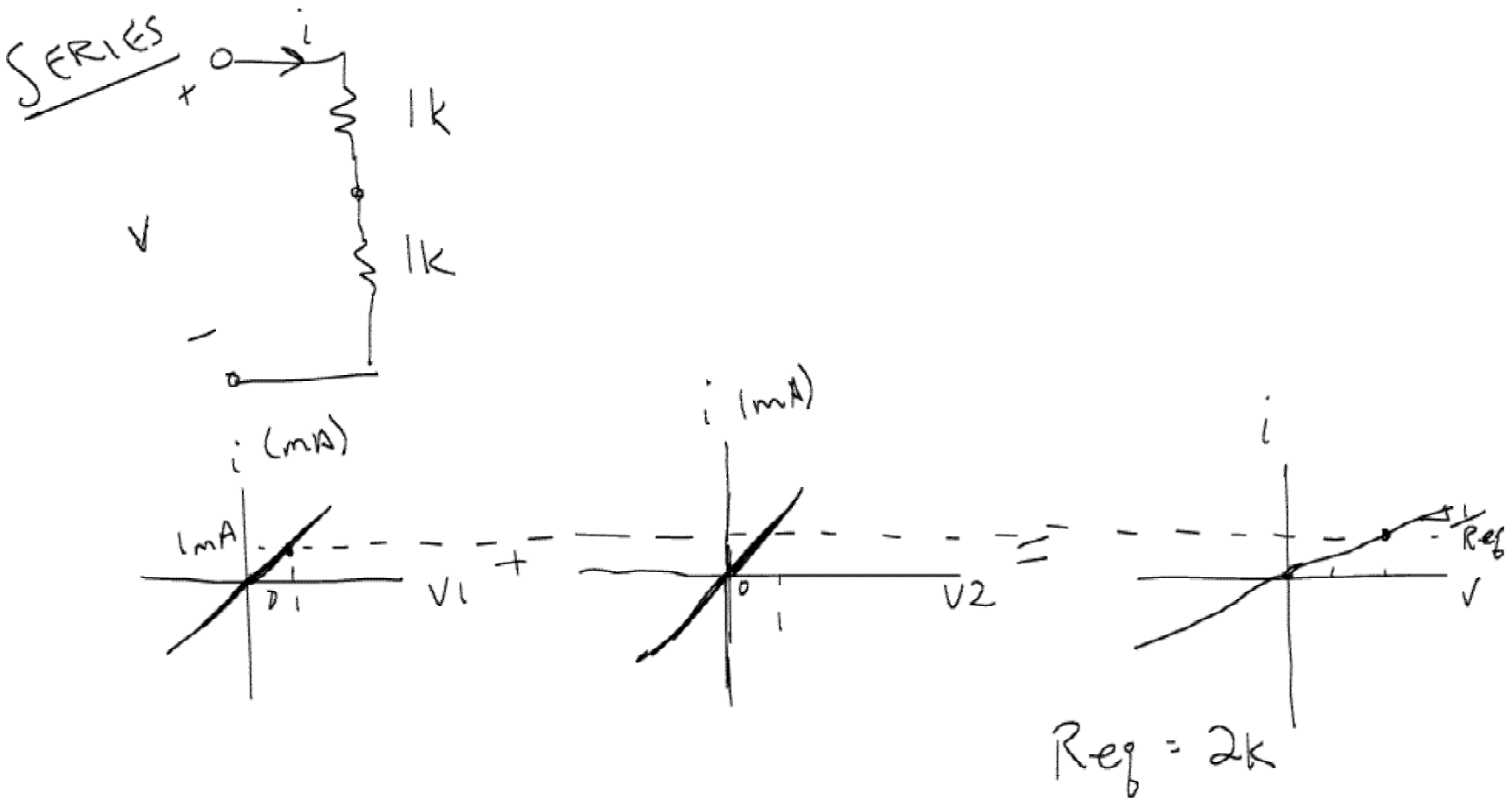
Diodes

Always ideal

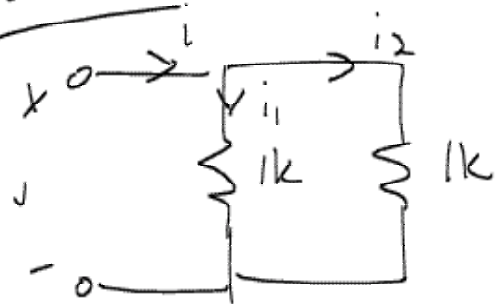


HW

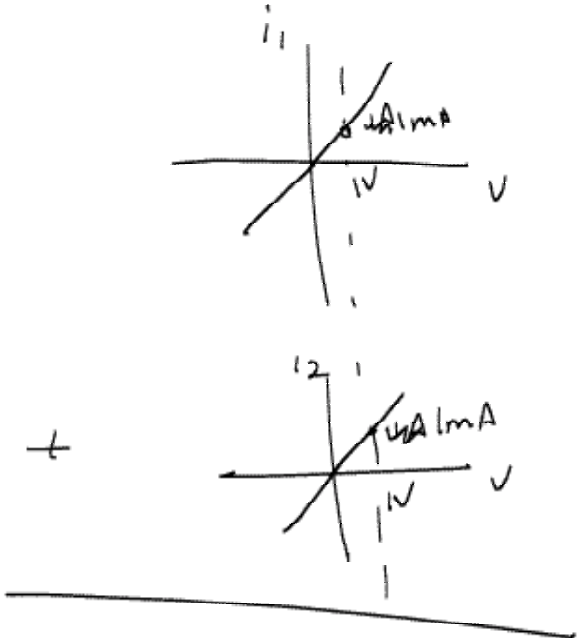



SERIES
+
V
−
i
1k
1k
i (mA)
1mA
1
V1
+
i (mA)
1
V2
=
i
1/Req
V
Req = 2k

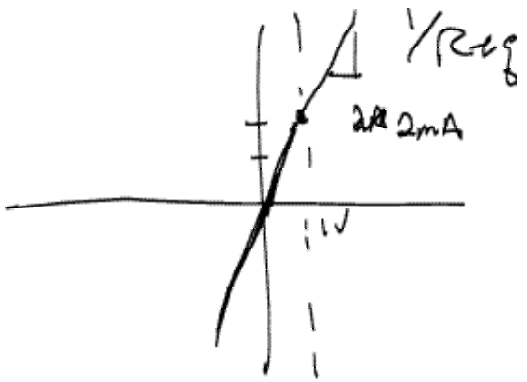
Parallel



$i = i_1 + i_2$



$R_{eq} = .5\ k\Omega$

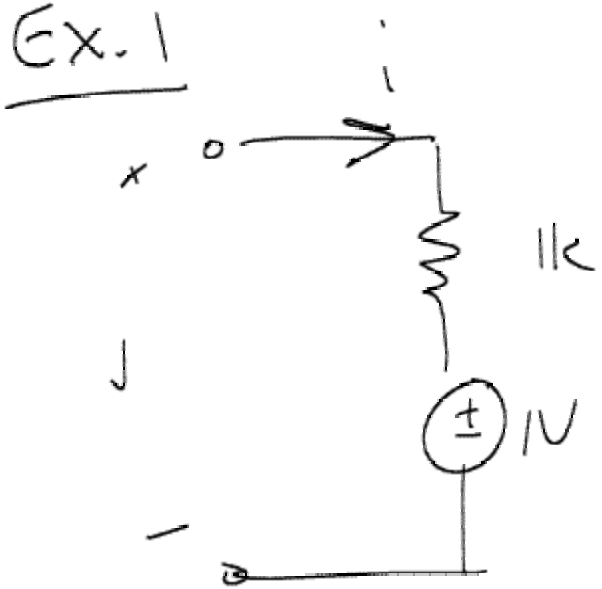


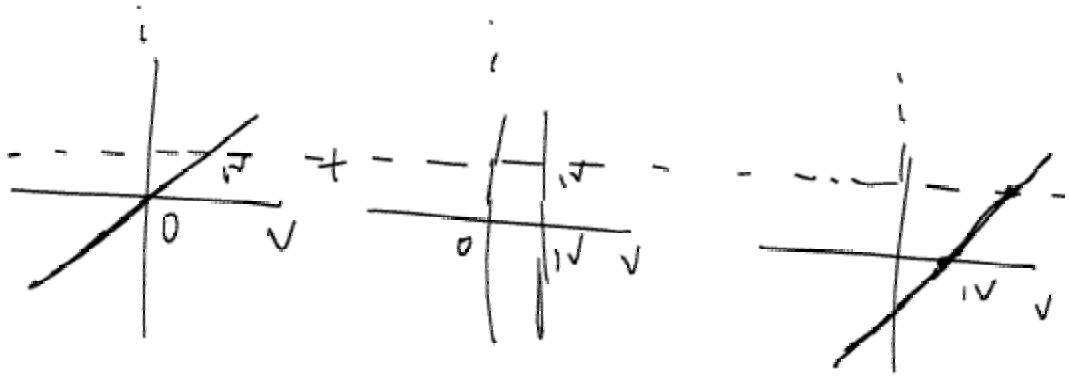
Conclusion:

Series: Add horizontally

Parallel: Add vertically

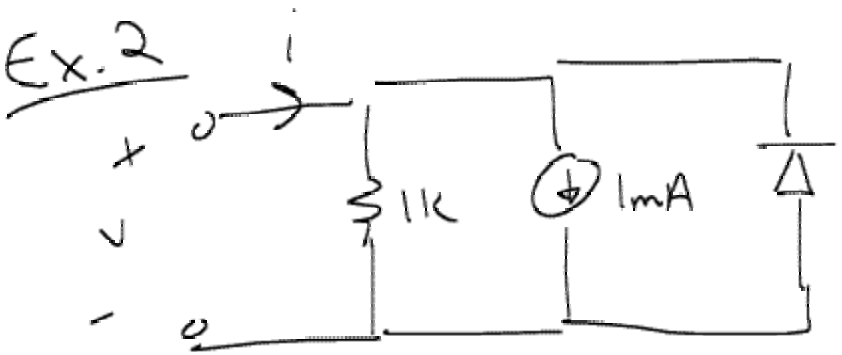
Ex. 1

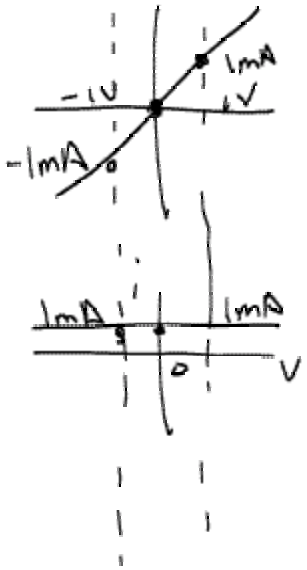


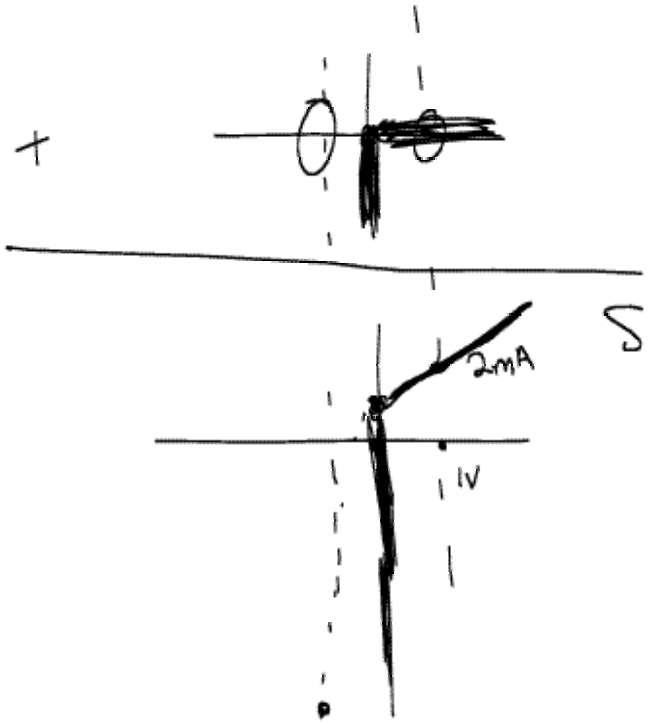


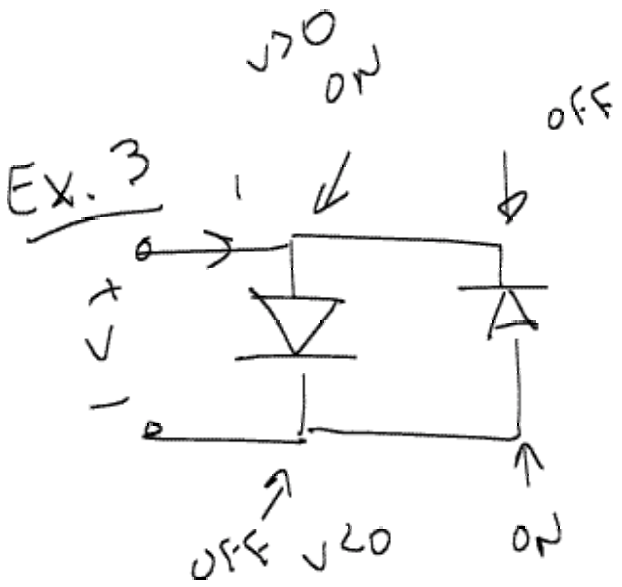
Slope = 1

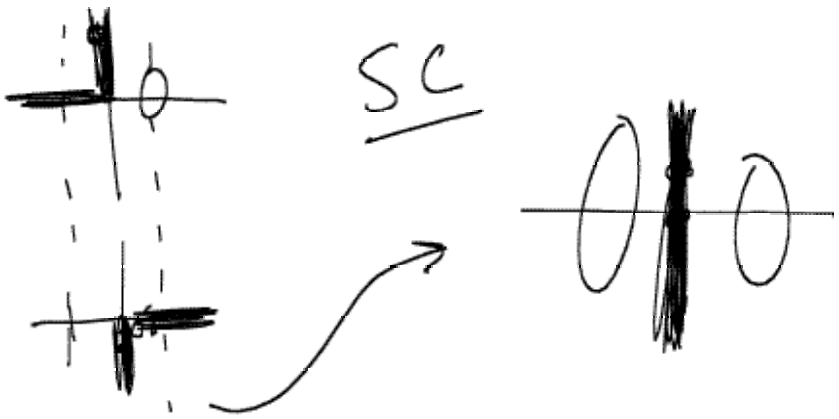
Ex. 2



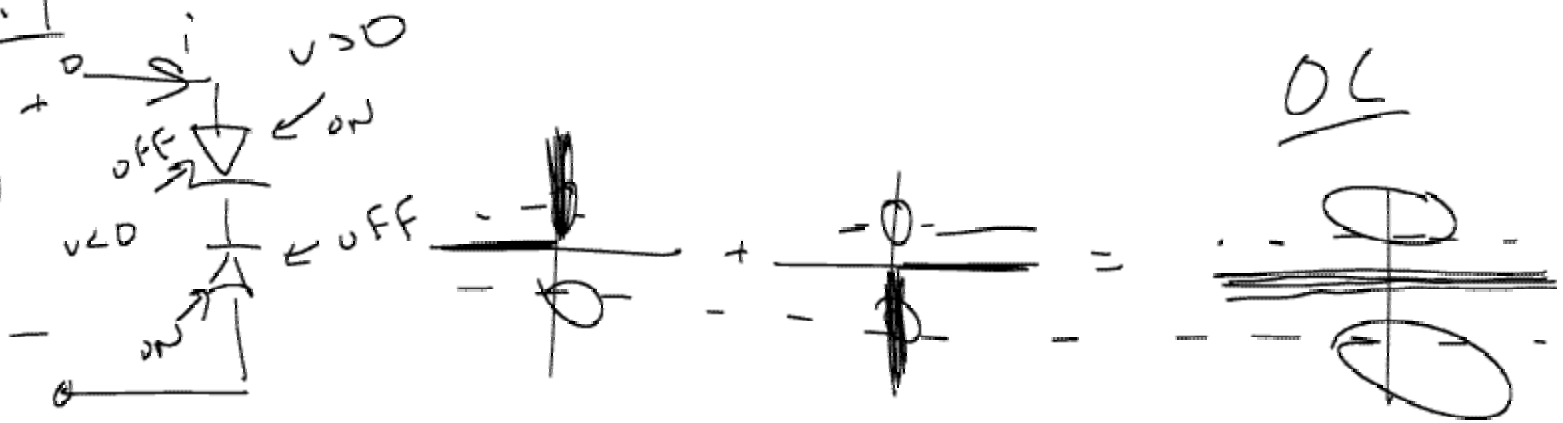



+
2mA
1V
Slope = 1

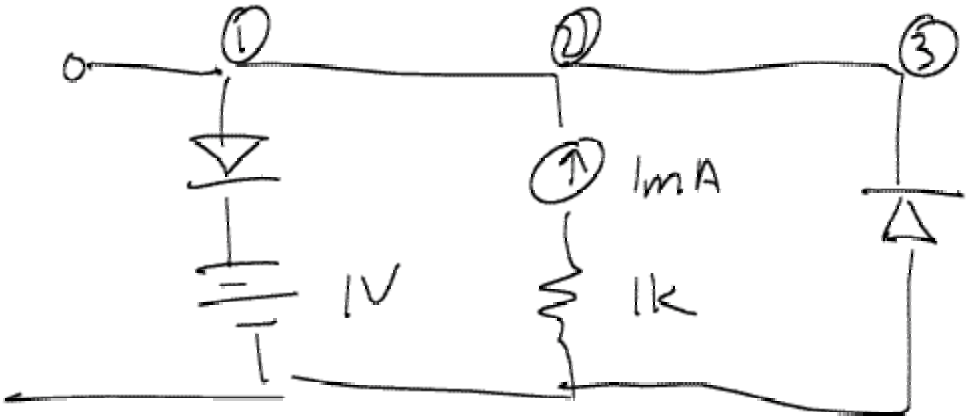

Ex. 3
V>0
ON
OFF
V
+
−
OFF V<0
ON

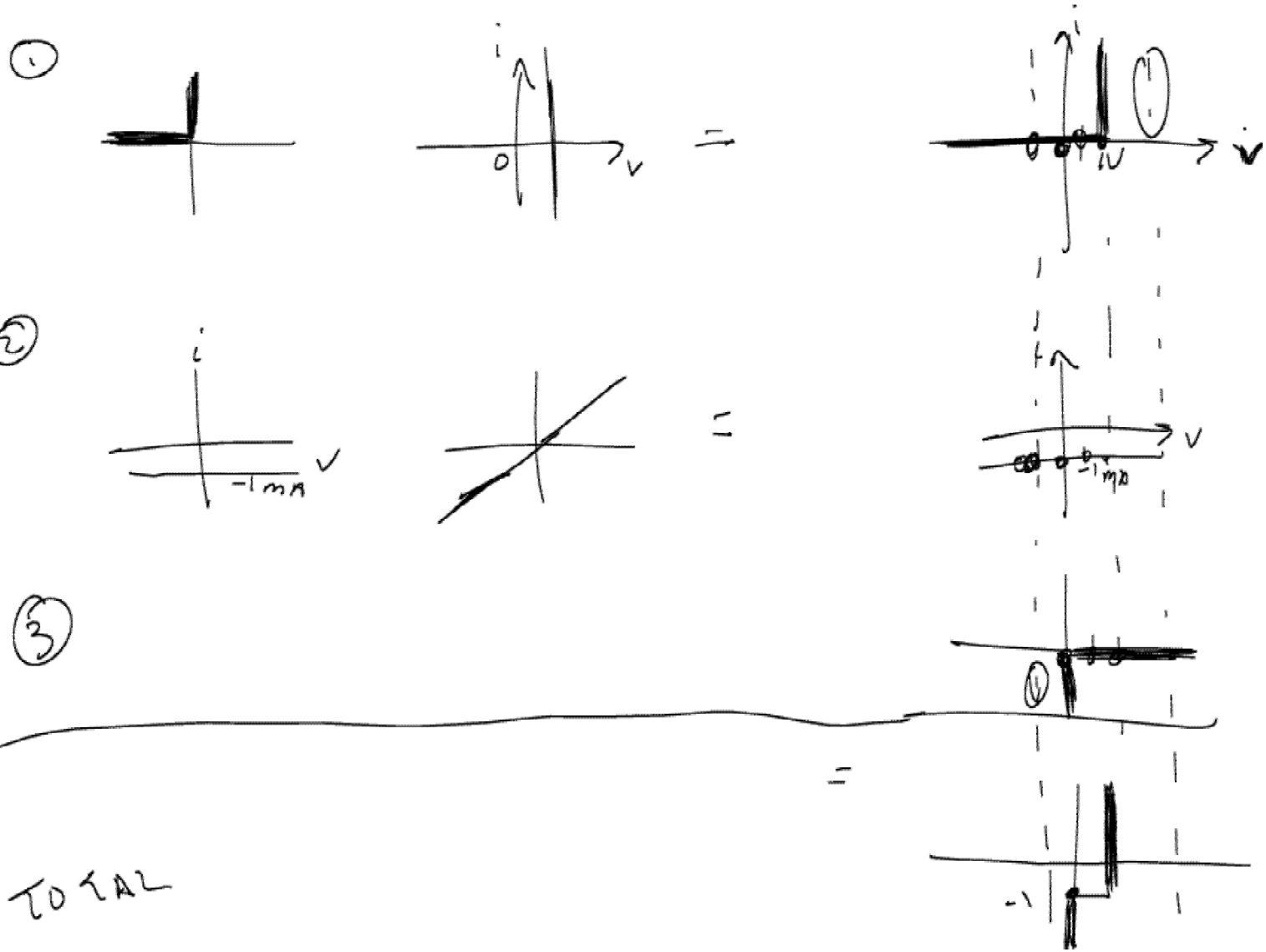

SC

Ex. 4

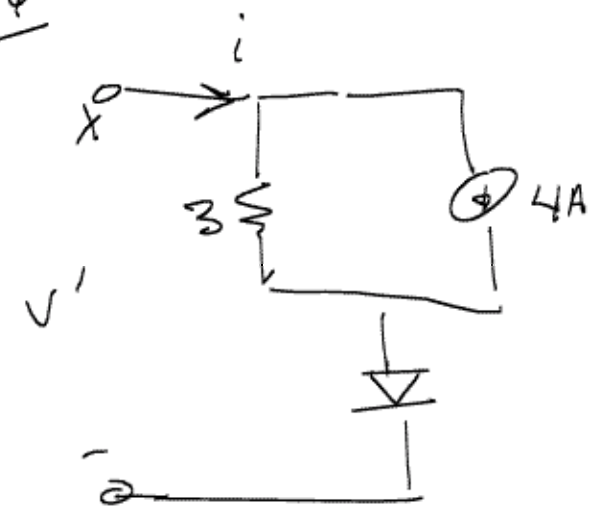


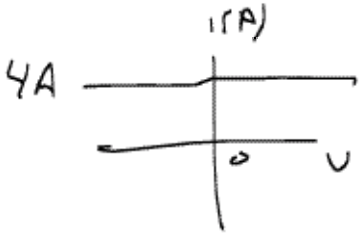
Ex. 5

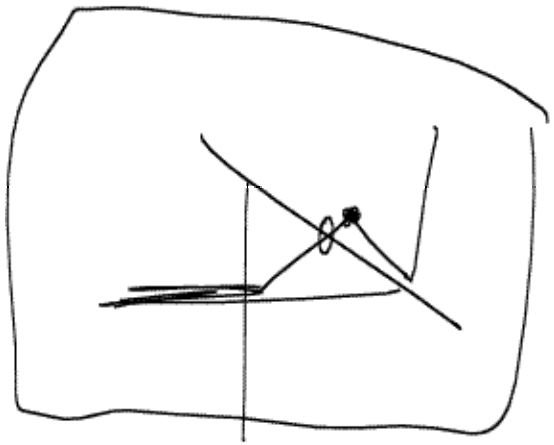
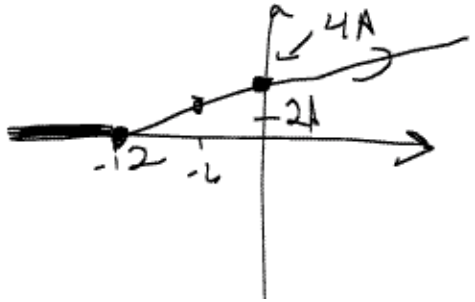



1
i
0
v
=
i
1V
v
2
i
-1mA
v
=
i
v
-1mA
3
=
-1
TOTAL

Ex. 6



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