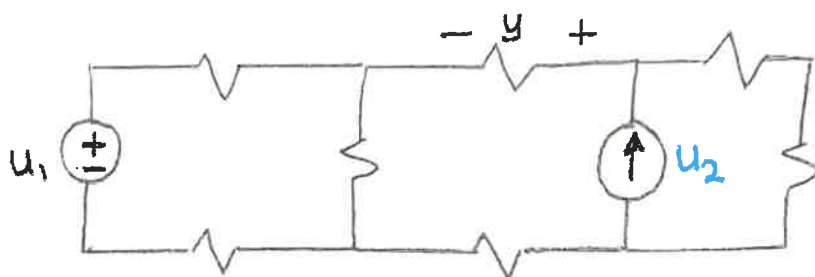


**EXAM RULES**

- 1) One 8.5" x 11" sheet permitted;  
otherwise closed books, closed notes, open minds!
- 2) Scientific calculator is permitted; no computers and no phone!
- 3) **NO PHONES !!!**  
Phones should not be visible at all!  
A visible phone will result in a zero grade for the exam!
- 4) Write FULL NAME legibly on each page provided.
- 5) **PLEASE SHOW ALL WORK !!!**  
**This is essential to receive partial credit!**
- 6) Please do not submit multiple answers. You must pick an answer!!
- 7) Write your solutions on the sheets provided.  
No other paper/sheets/pages should be used!
- 8) Clearly label voltages and currents on the circuits provided.
- 9) Use the variables provided!  
No additional variables should be used!
- 10) Unreadable work will receive NO CREDIT.
- 11) Please place important equations and answers within boxes as we have done in lecture.
- 12) Please be careful with your algebra, signs, etc.
- 13) Please turn in your solutions to me at the end of the period!
- 14) **PLEASE DO NOT CHEAT !!!**

## Problem #1

Relate  $y$  to  $u_1, u_2$   
(All  $R=1$ )

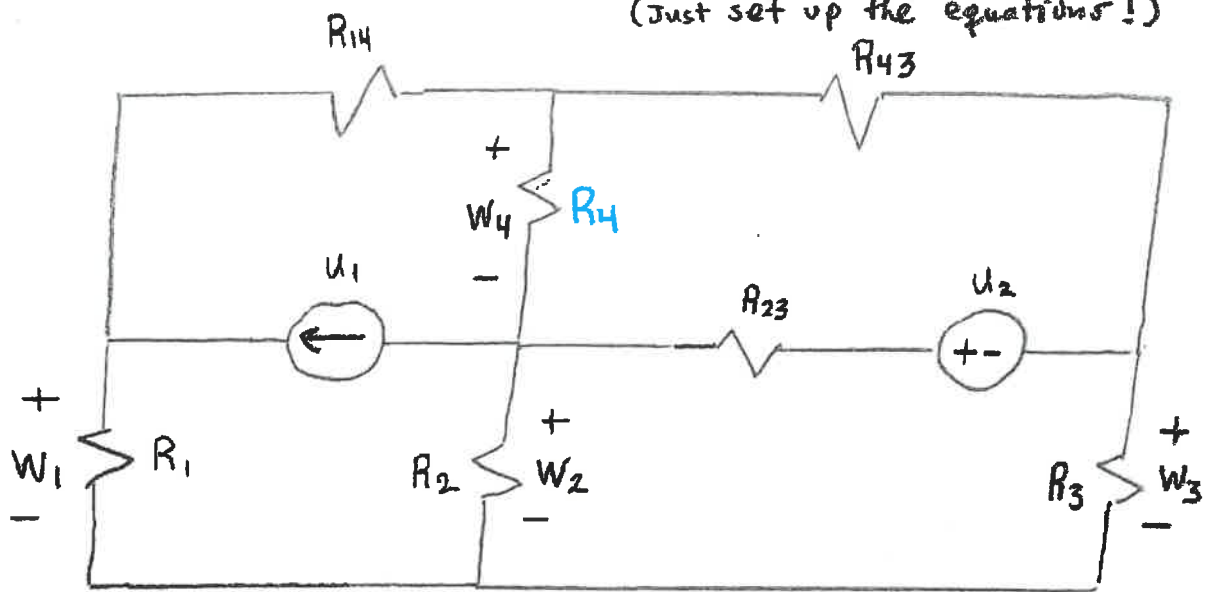


# Problem # 2

Relate  $w_1, w_2, w_3, w_4$  to  $u_1, u_2$   
(Just set up the equations!)

(Nodal Analysis)

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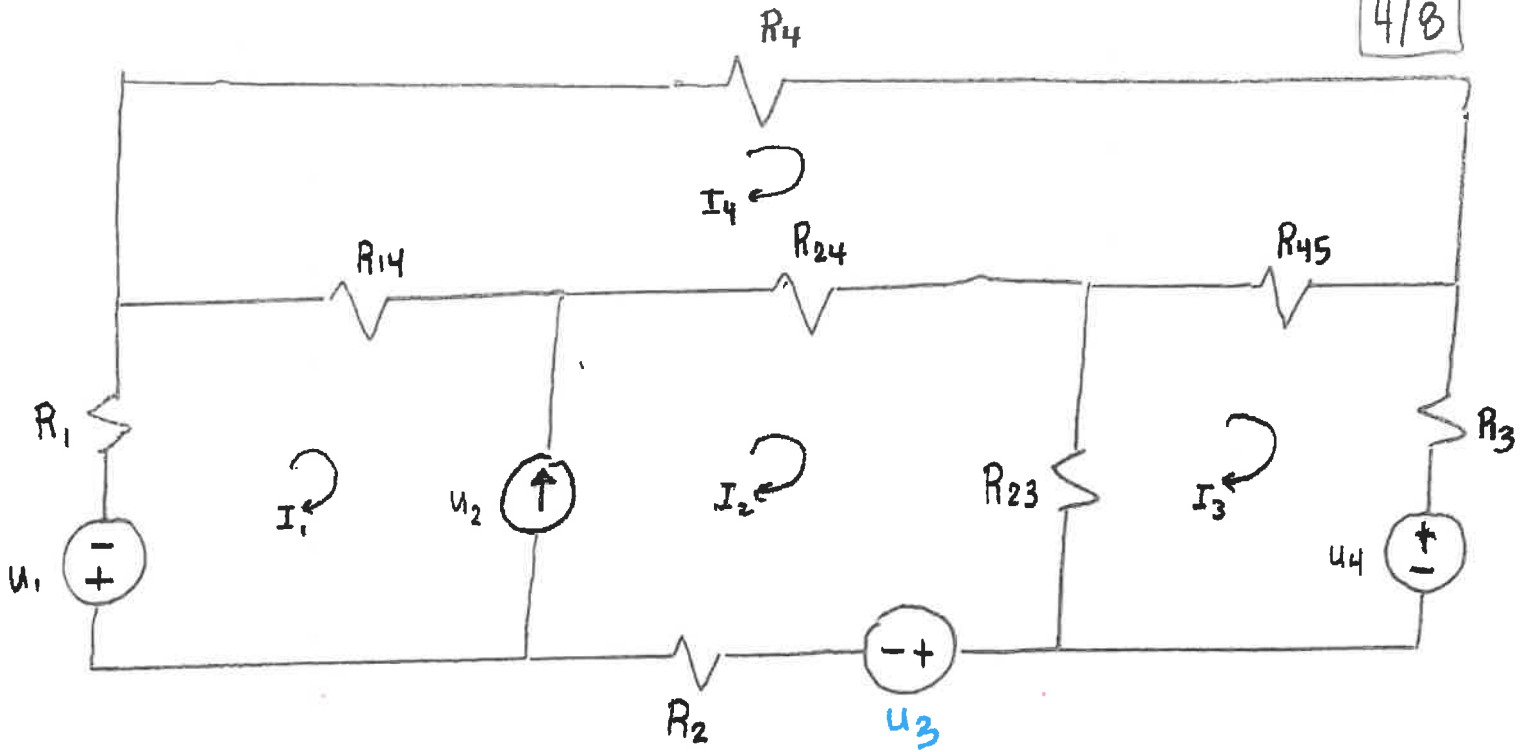


# Problem #3

Relate  $I_1, I_2, I_3, I_4$  to  $u_1, u_2, u_3, u_4$   
(Just set up the equations!)

Mesh Analysis

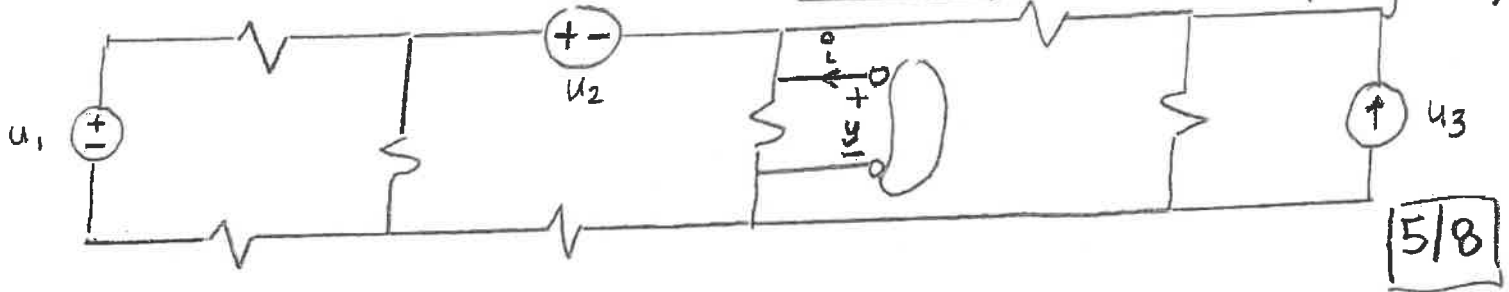
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# Problem #4

Find a Thevenin & Norton Equivalent at  $y$   
 (All  $R=1$ ) ... Must specify  $R_{th}$  &  $V_{th}$

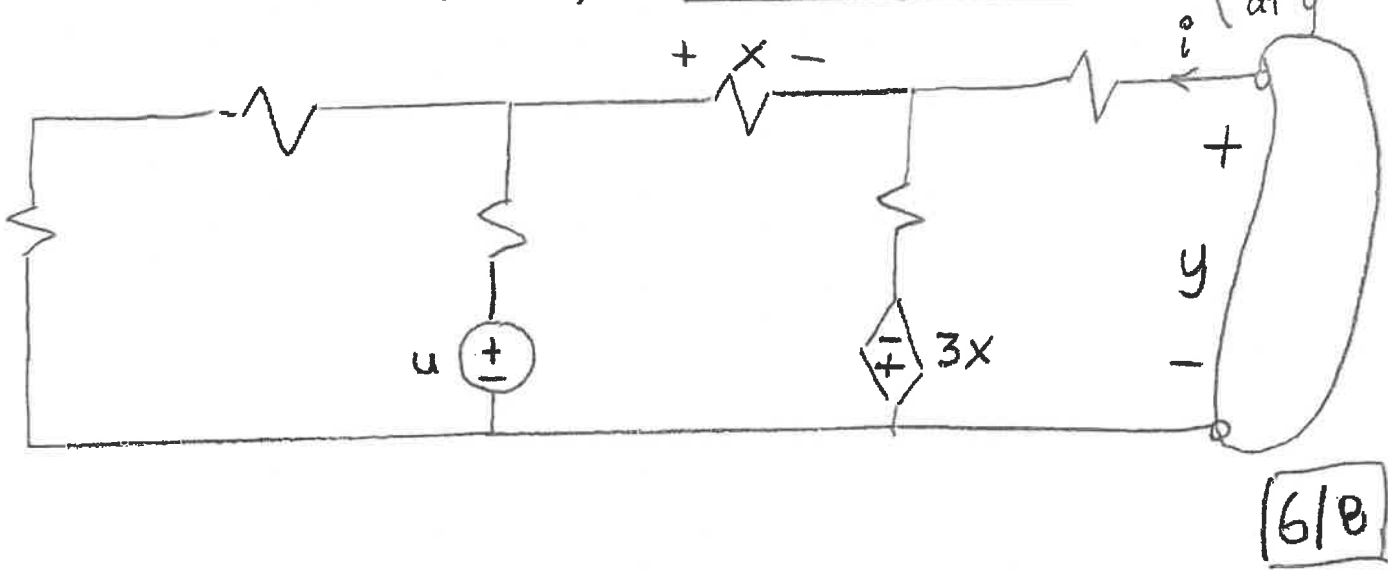
Thevenin  
 Norton  
 at  $y$



# Problem # 5

Find a Thevenin & Norton Equivalent at y  
(All  $R=1$ ) ... Must specify  $R_{th}$  &  $V_{th}$

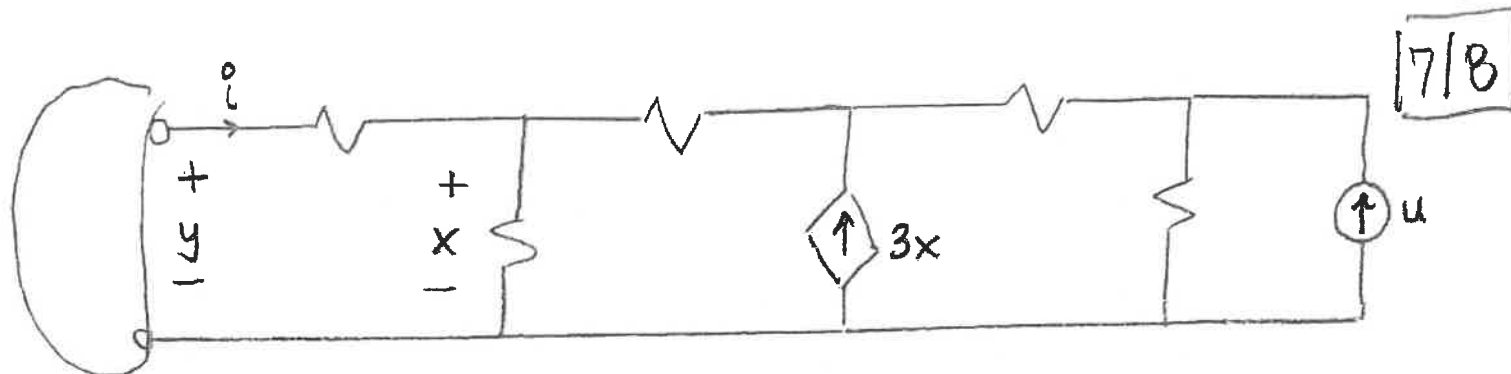
Thevenin-  
Norton  
at y



# Problem # 6

Find a Thevenin & Norton Equivalent at  $y$   
 (All  $R=1$ ) ... must specify  $R_{th}$  &  $V_{th}$

Thevenin-  
Norton  
at  $y$



Problem #17

Relate  $y$  to  $u_1, u_2$  (All  $R=1$ )

(Need  
Another  
Variable)

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