EEC 100 Lab 2-Inverting op-amp and potentiometer
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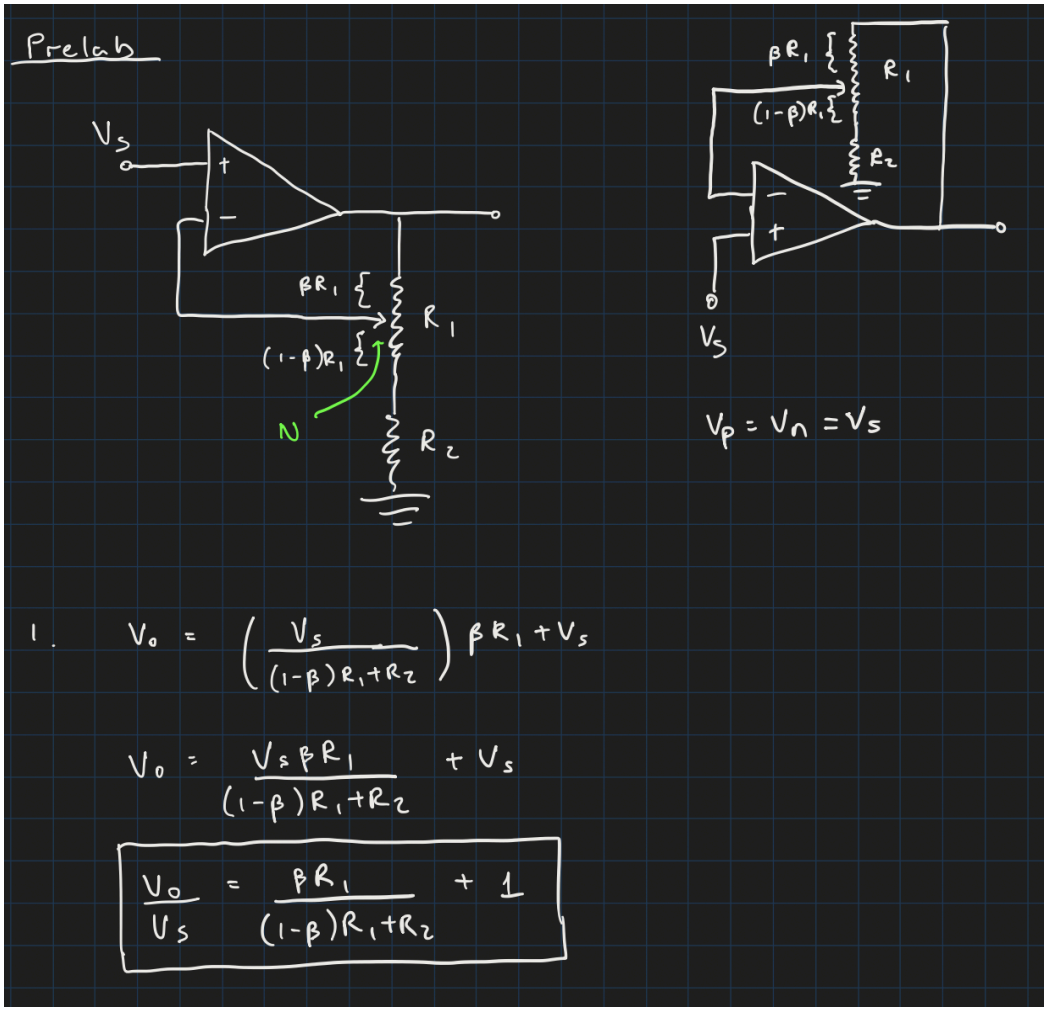
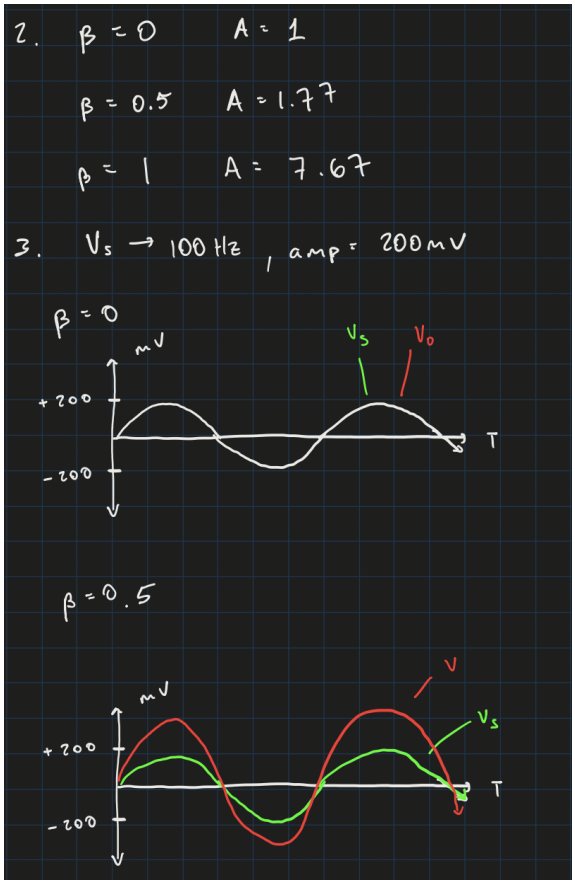
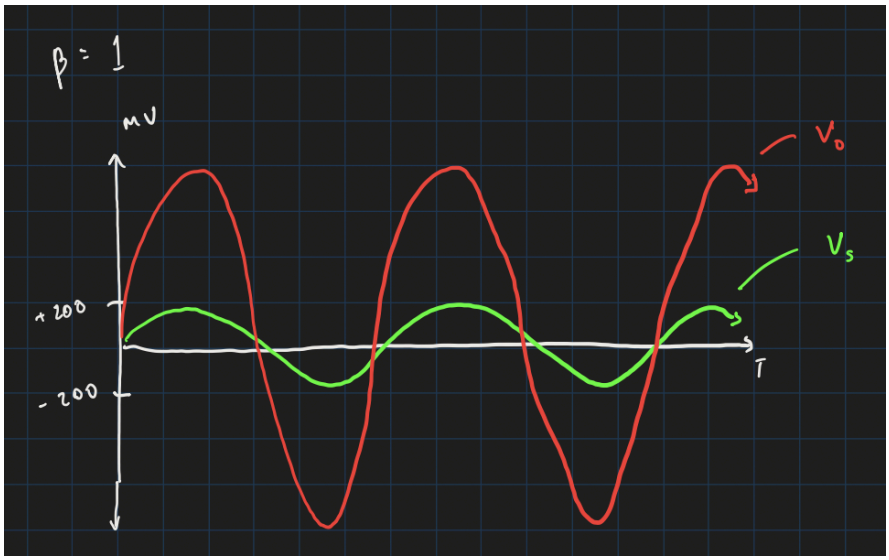
10/14/29

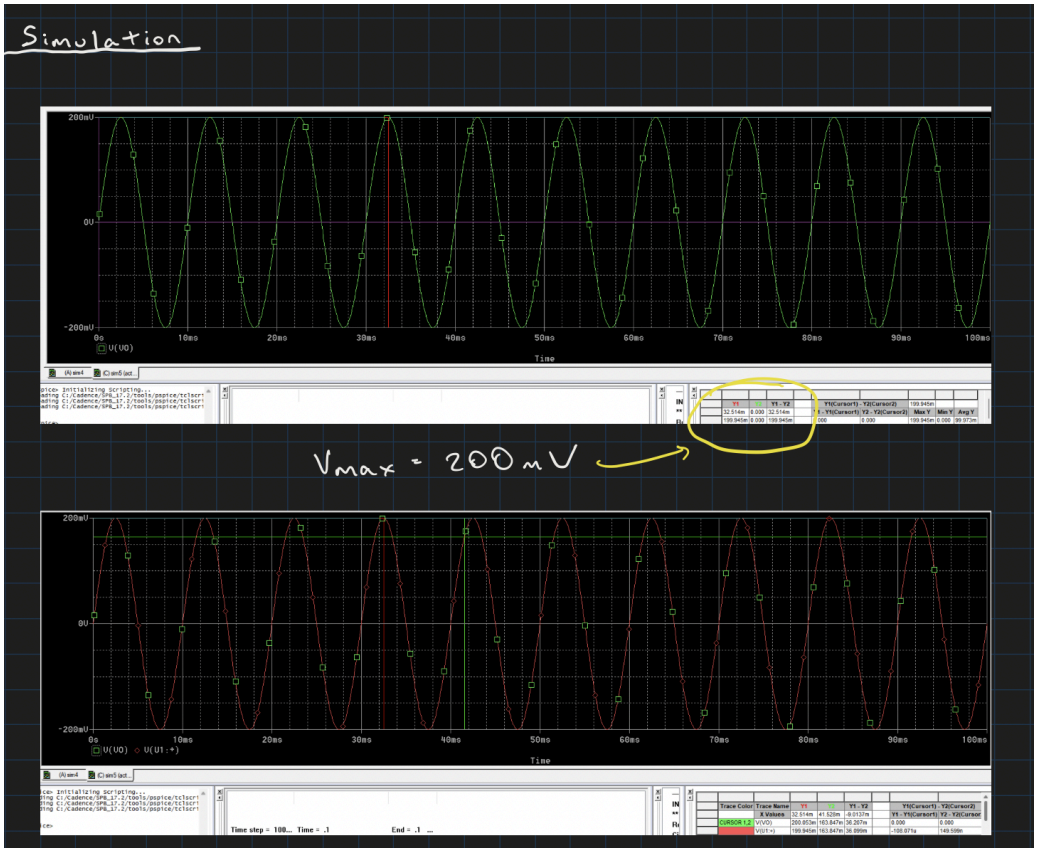
(1) Objective: Learn how to use an inverting op-amp and control the gain using a negative feedback loop and a potentiometer.
(2) Prelab:

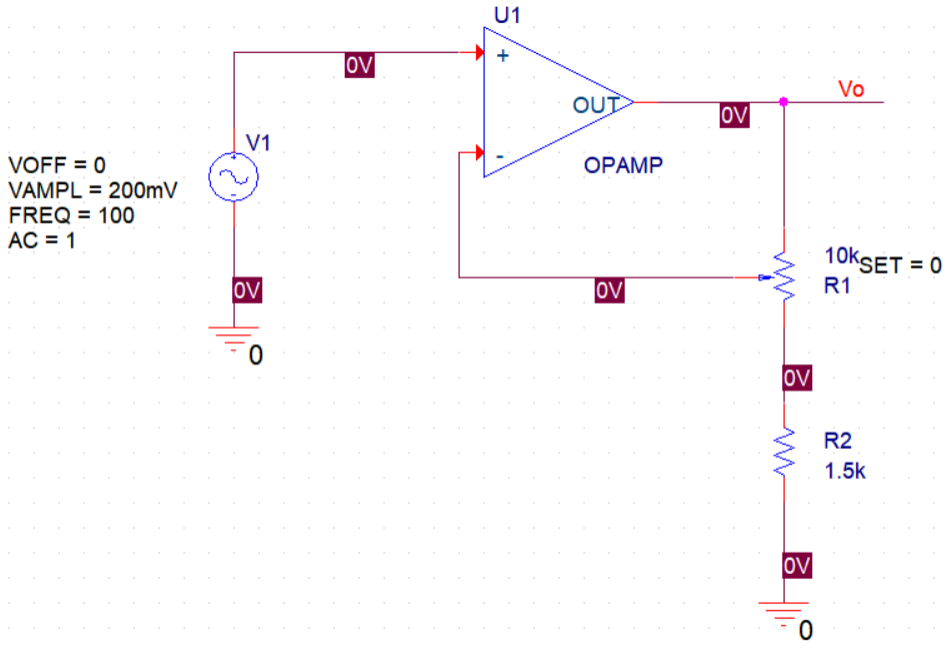


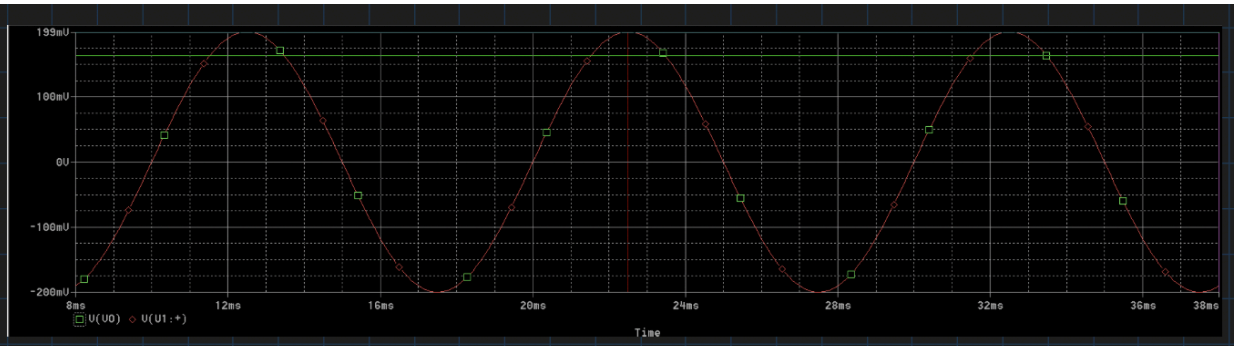




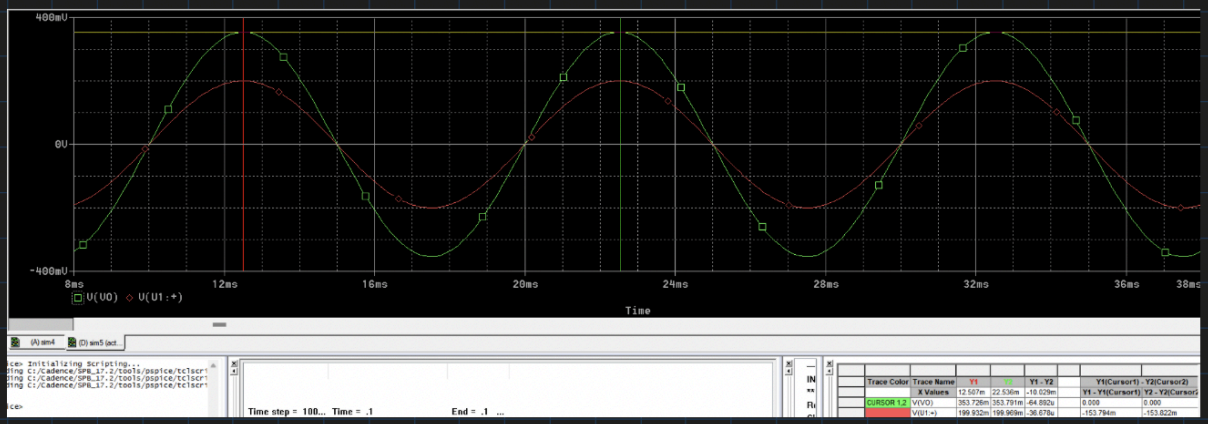
(3) Simulation:


Simulation
200mV
0V
-200mV
0s
10ms
20ms
30ms
40ms
50ms
60ms
70ms
80ms
90ms
100ms
Time
V(V0)
Vmax = 200mV
V(V0)
V(U1:+)

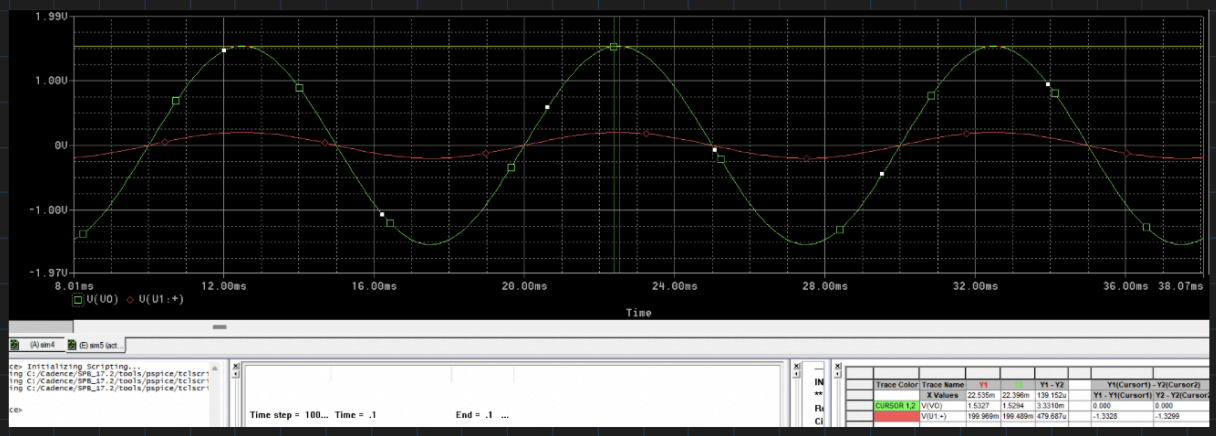

U1
+
-
OUT
OPAMP
Vo
V1
VOFF = 0
VAMPL = 200mV
FREQ = 100
AC = 1
0V
0
10k
SET = 0
R1
R2
1.5k



$A = 1$, $\beta = 0$



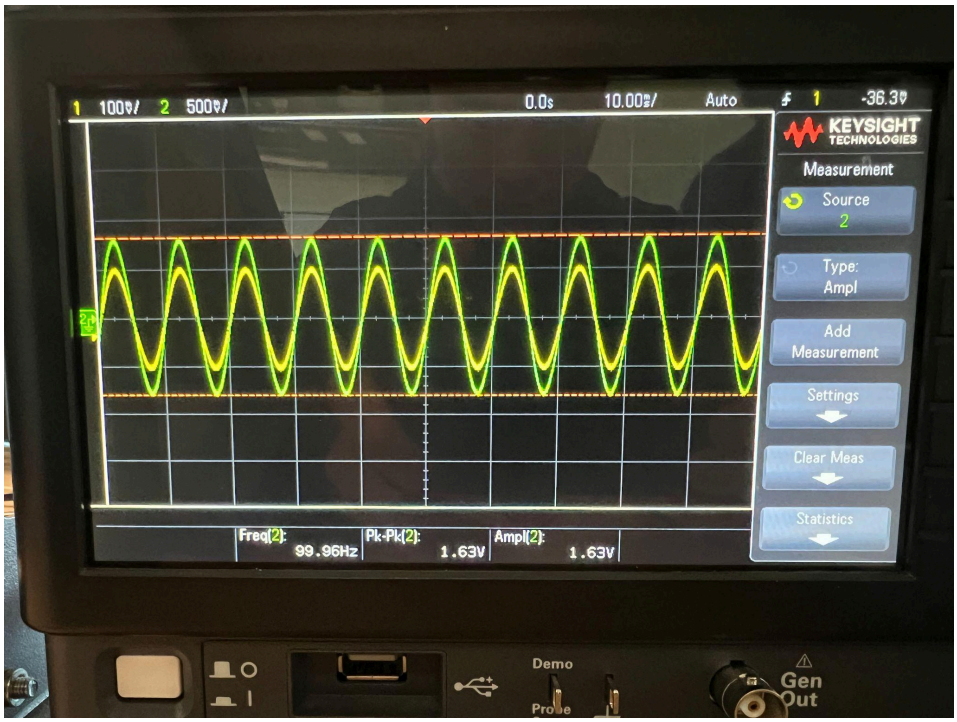
$A = 1.75$, $\beta = 0.5$



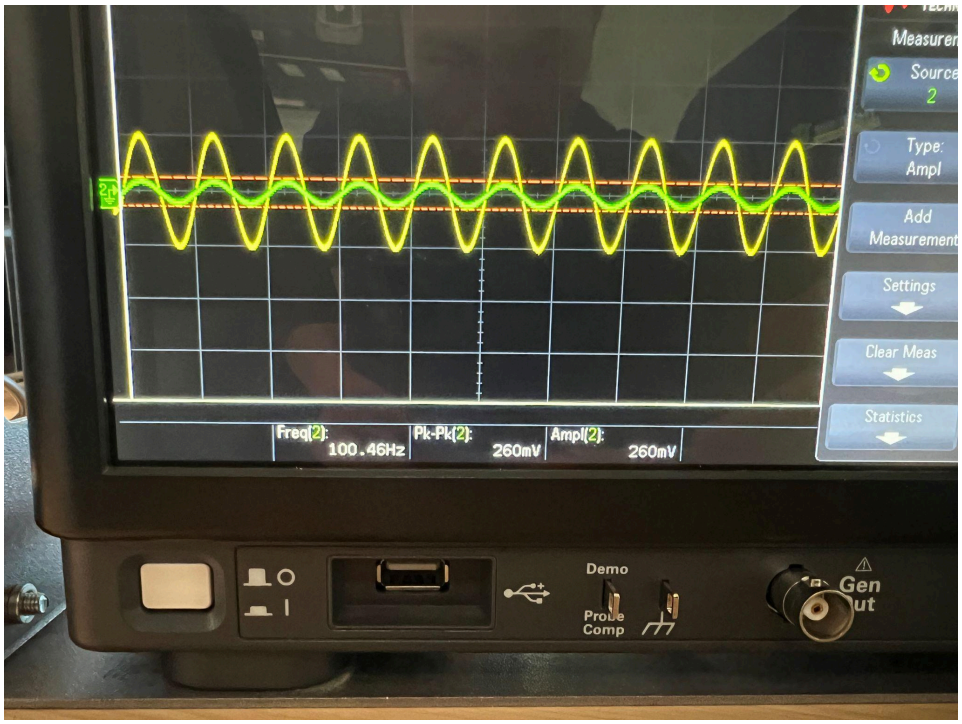
$A = 7.5$, $\beta = 1$

(4) Experiment:

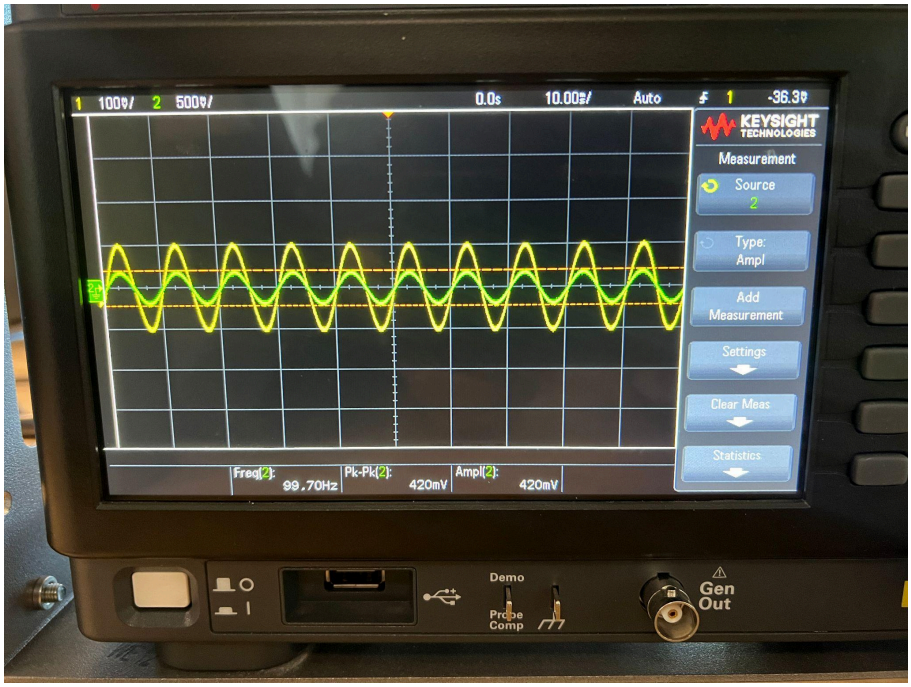
Potentiometer = fully turned



Potentiometer = fully turned in opposite direction



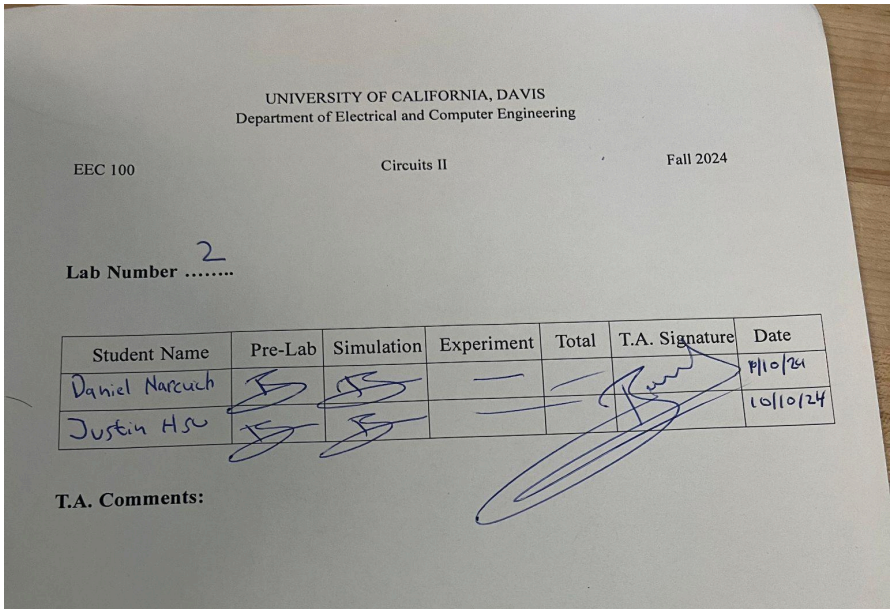
Potentiometer = turned 50%



(5) Conclusion:

My prelab calculations and PSpice simulations agreed with each other, verifying my calculations. When we tested in lab however, the values were slightly different, due to the inherent tolerance differences in each of the resistor values-leading to the actual output voltage being slightly off from its ideal counterpart.

(6) Checkoff signature from TAs.



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EEC 100 Circuits II Fall 2024

Lab Number 2

Student Name	Pre-Lab	Simulation	Experiment	Total	T.A. Signature	Date
Daniel Narcuch						10/10/24
Justin Hsu						10/10/24

T.A. Comments: