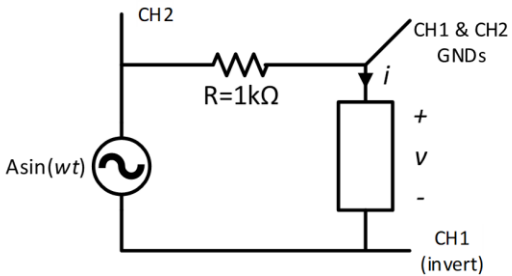
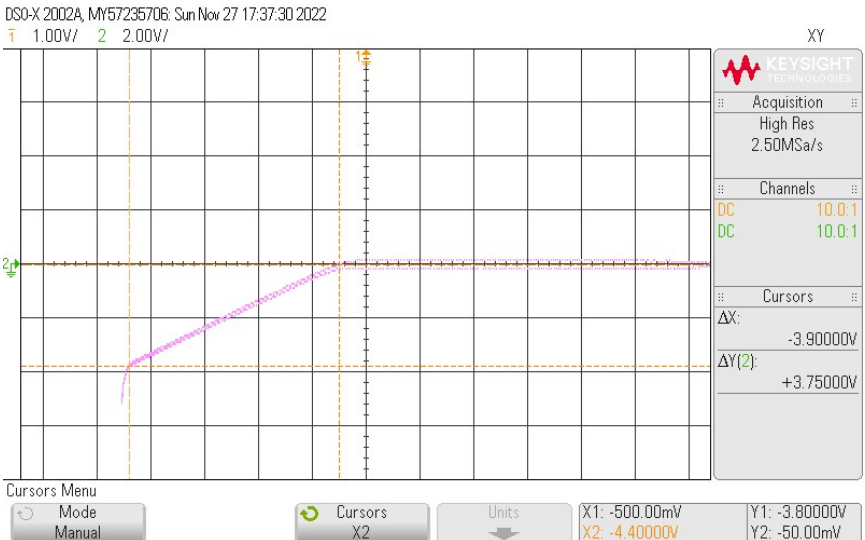
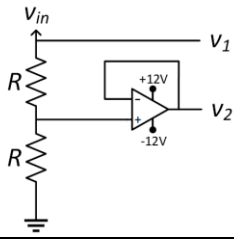
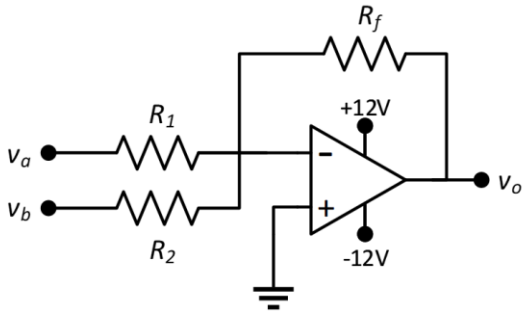
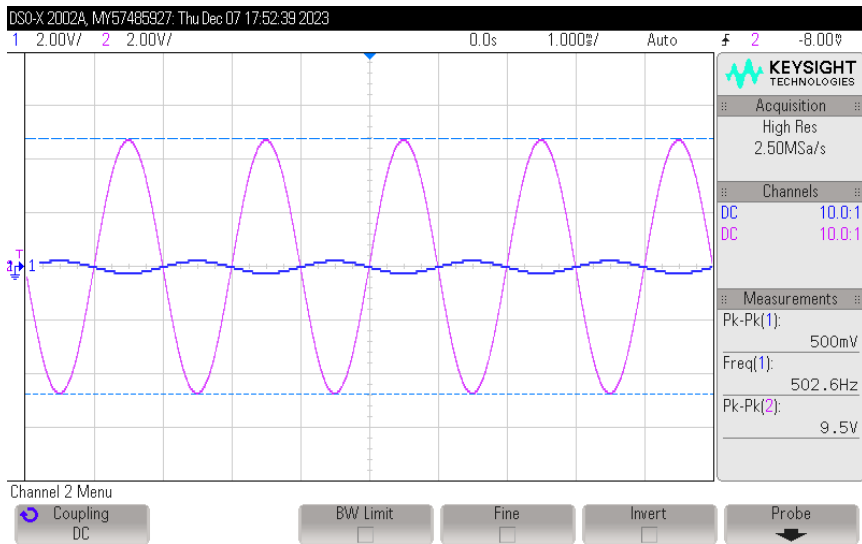


## Tuesday Morning Results & Rubric

### TuMQ1.

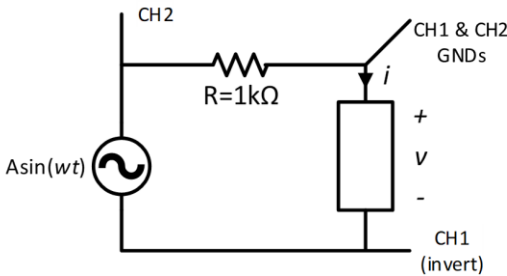
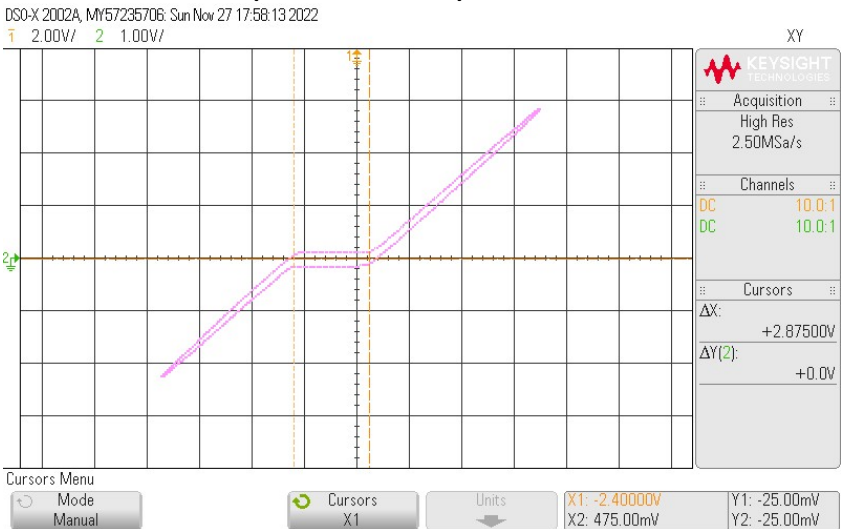
Q1.	
a) Circuit configuration & explanation:	Q1A0 pts. total
<b>Configuration (student may ask for this)</b> 	Q1A1 pt.
<b>Signal generator parameters (student may ask for this only)</b> $f = 30\text{Hz}$ , $\omega = 2 * \pi * 30\text{rad/sec}$ (anything less than 100 Hz is okay) $A = 10V_p \equiv 20V_{pp}$ (anything big enough to show all breakpoints is okay)	Q1A2 pts.
<b>Explanation:</b> * Signal generator works as a floating output * CH1 inverted to measure v * CH2 indirectly measures the current ( $i v_{1k\Omega} = i * 1k\Omega$ )	Q1A3 pts.
<b>b) I vs V characteristics (TAKE A PICTURE)</b> 	Q1B0 pts. total
<b>Photo correct (0 if student didn't show)</b> - Missing critical points	Q1B1 pts.
<b>Drawing correct</b> - Without units - Without critical points - Only theoretical	Q1B2 pts.

## TuMQ2.

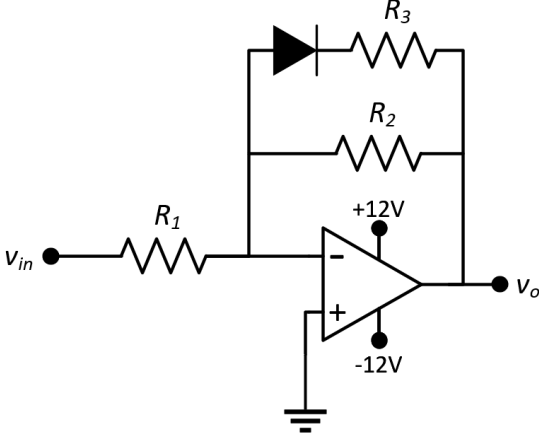
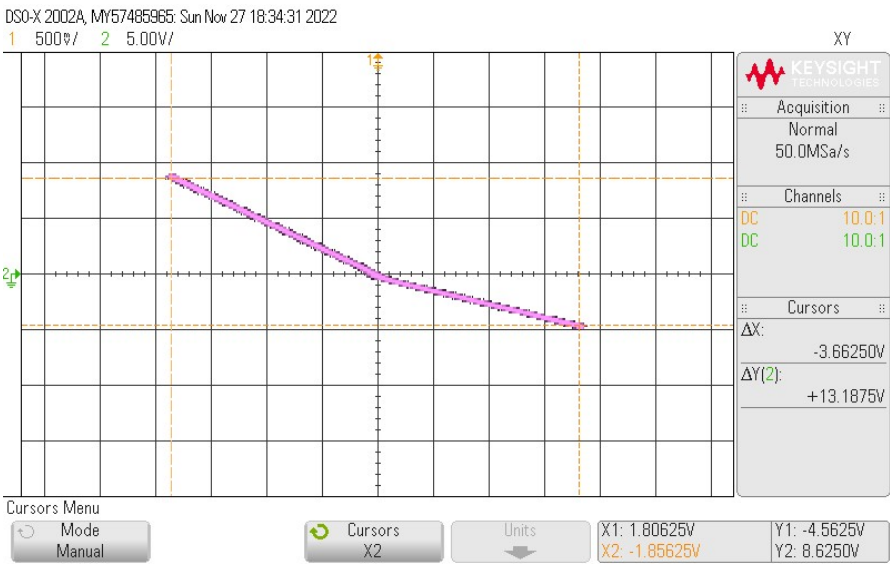
Q2.	
a) Voltage buffer	Q2A0 pts. total
<b>Configuration (student may ask for this)</b> 	Q2A1 pts.
Explanation of why we need a buffer (loading effect of input resistance of difference/summing amplifier)	Q2A2 pts.
b) Design	Q2B0 pts. total
<b>Configuration (student may ask for this)</b> 	Q2B1 pts.
<b>Parameters (student may ask for this) ALSO GIVE THE CONFIG. IF SELECTED WRONGLY</b> $R_1 = R_2 = 1k\Omega, R_f = 6.8k\Omega$	Q2B2 pts.
c) Experimental results <b>(TAKE A PICTURE)</b> 	Q2C0 pts. total
Photo correct (0 if student didn't show) - Input amplitude wrong	Q2C1 pts.
Drawing correct - Without units - Without critical points	Q2C2 pts.

## Tuesday Afternoon Results & Rubric

### TuAQ1.

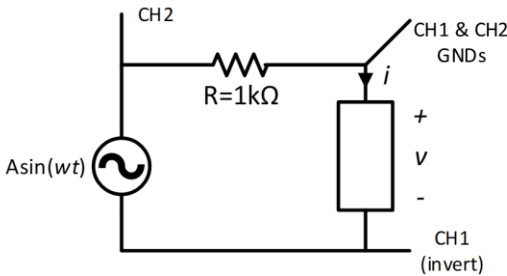
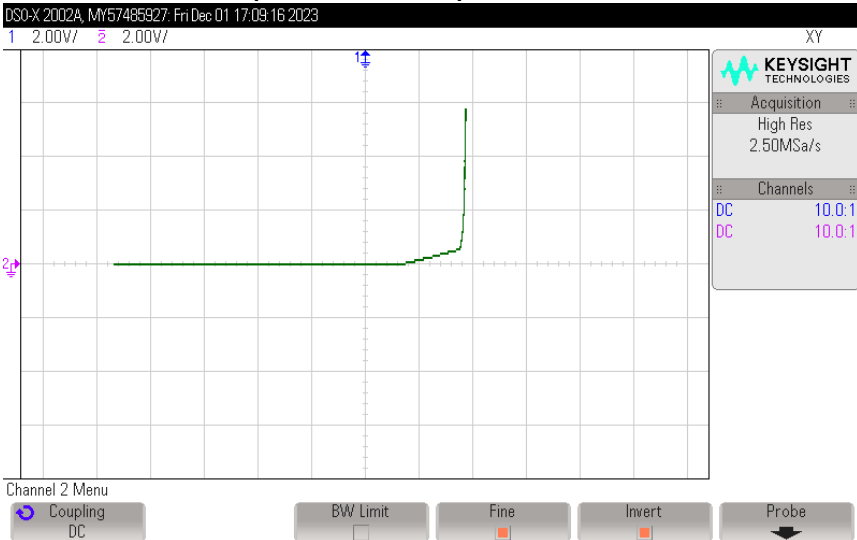
Q1.	
a) Circuit configuration & explanation:	Q1A0 pts. total
<b>Configuration (student may ask for this)</b> 	Q1A1 pt.
<b>Signal generator parameters (student may ask for this only)</b> $f = 30\text{Hz}$ , $\omega = 2 * \pi * 30\text{rad/sec}$ (anything less than 100 Hz is okay) $A = 10V_p \equiv 20V_{pp}$ (anything big enough to show all breakpoints is okay)	Q1A2 pts.
<b>Explanation:</b> * Signal generator works as a floating output * CH1 inverted to measure v * CH2 indirectly measures the current ( $iv_{1k\Omega} = i * 1k\Omega$ )	Q1A3 pts.
<b>b) I vs V characteristics (TAKE A PICTURE)</b> 	Q1B0 pts. total
<b>Photo correct (0 if student didn't show)</b> - Missing critical points	Q1B1 pts.
<b>Drawing correct</b> - Without units - Without critical points - Only theoretical	Q1B2 pts.

## TuAQ2.

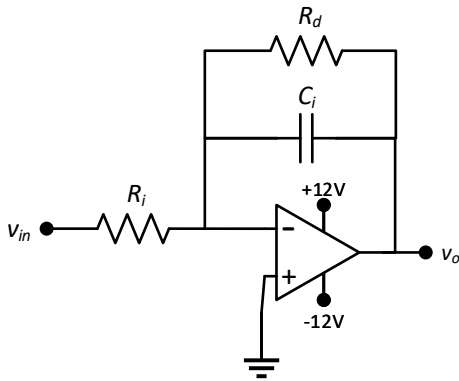
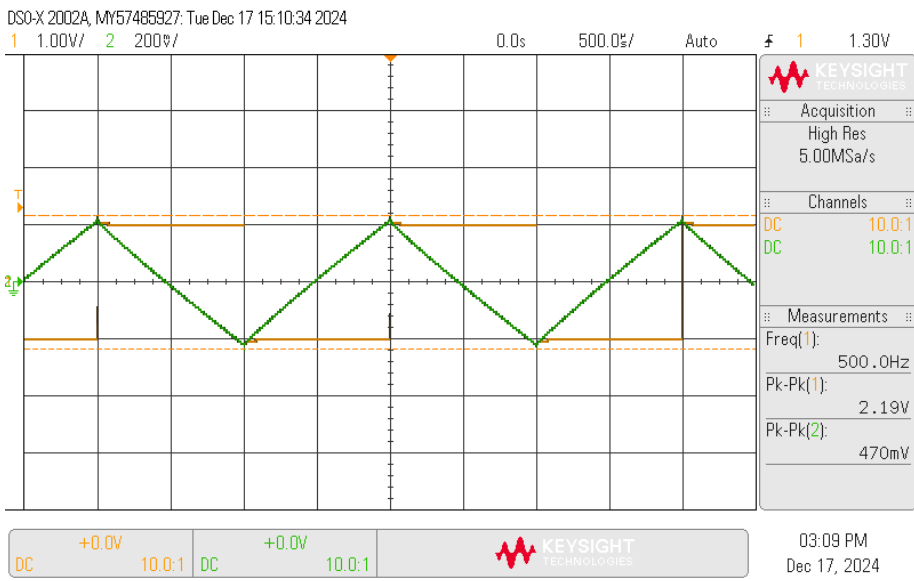
Q2.	
a) Drawing	Q2A0 pts. total
	Q2A1 pts.
	Q2A2 pts.
b) Design	Q2B0 pts. total
<b>Configuration (student may ask for this)</b> 	Q2B1 pts.
<b>Parameters (student may ask for this) ALSO GIVE THE CONFIG. IF SELECTED WRONGLY</b> $R_2 = R_3 = 4.7k\Omega, R_1 = 1k\Omega$	Q2B2 pts.
c) Experimental results (TAKE A PICTURE)	Q2C0 pts. total
	Q2C1 pts.
Photo correct (0 if student didn't show) <ul style="list-style-type: none"> <li>- Input amplitude wrong</li> </ul>	
Drawing correct <ul style="list-style-type: none"> <li>- Without units</li> <li>- Without critical points</li> </ul>	Q2C2 pts.

# Wednesday Morning Results & Rubric

## WMQ1.

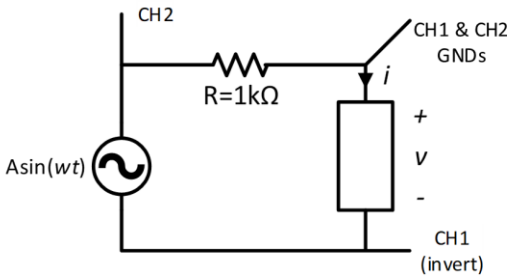
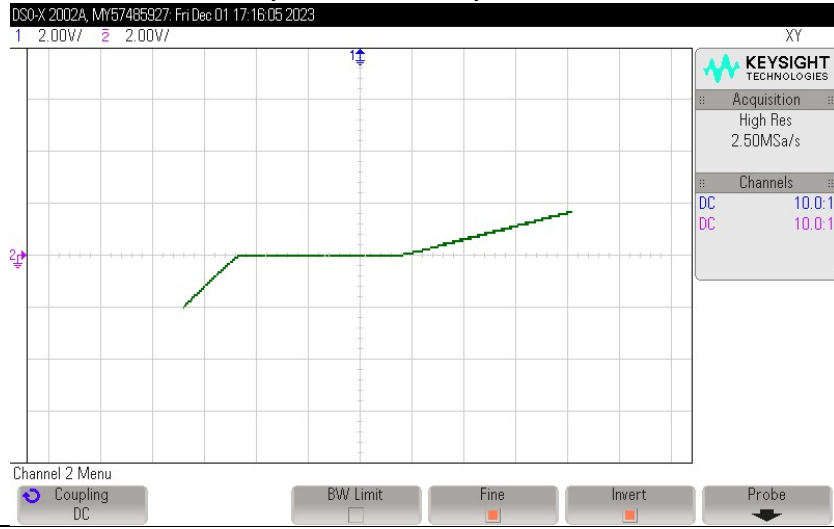
Q1.	
a) Circuit configuration & explanation:	Q1A0 pts. total
<b>Configuration (student may ask for this)</b> 	Q1A1 pt.
<b>Signal generator parameters (student may ask for this only)</b> $f = 30\text{Hz}$ , $\omega = 2 * \pi * 30\text{rad/sec}$ (anything less than 100 Hz is okay) $A = 10V_p \equiv 20V_{pp}$ (anything big enough to show all breakpoints is okay)	Q1A2 pts.
<b>Explanation:</b> * Signal generator works as a floating output * CH1 inverted to measure v * CH2 indirectly measures the current ( $iv_{1k\Omega} = i * 1k\Omega$ )	Q1A3 pts.
<b>b) I vs V characteristics (TAKE A PICTURE)</b> 	Q1B0 pts. total
<b>Photo correct (0 if student didn't show)</b> - Missing critical points	Q1B1 pts.
<b>Drawing correct</b> - Without units - Without critical points - Only theoretical	Q1B2 pts.

## WMQ2.

Q2.	
a) Drawing	Q2A0 pts. total
	Q2A1 pts.
	Q2A2 pts.
b) Design	Q2B0 pts. total
Configuration (student may ask for this)	Q2B1 pts.
	
Parameters (students may ask for this) ALSO GIVE THE CONFIG. IF SELECTED WRONGLY  $C_i = 1\ \mu F$ (given), $R_i = 2.7k\Omega$	Q2B2 pts.
c) Experimental results (TAKE A PICTURE)	Q2C0 pts. total
	Q2C1 pts.
Photo correct (0 if student didn't show) - Input amplitude wrong	
Drawing correct - Without units - Without critical points	Q2C2 pts.

# Wednesday Afternoon Results & Rubric

## WAQ1.

Q1.	
a) Circuit configuration & explanation:	Q1A0 pts. total
<b>Configuration (student may ask for this)</b> 	Q1A1 pt.
<b>Signal generator parameters (student may ask for this only)</b> $f = 30\text{Hz}$ , $\omega = 2 * \pi * 30\text{rad/sec}$ (anything less than 100 Hz is okay) $A = 10V_p \equiv 20V_{pp}$ (anything big enough to show all breakpoints is okay)	Q1A2 pts.
<b>Explanation:</b> * Signal generator works as a floating output * CH1 inverted to measure v * CH2 indirectly measures the current ( $iv_{1k\Omega} = i * 1k\Omega$ )	Q1A3 pts.
<b>b) I vs V characteristics (TAKE A PICTURE)</b> 	Q1B0 pts. total
<b>Photo correct (0 if student didn't show)</b> - Missing critical points	Q1B1 pts.
<b>Drawing correct</b> - Without units - Without critical points - Only theoretical	Q1B2 pts.

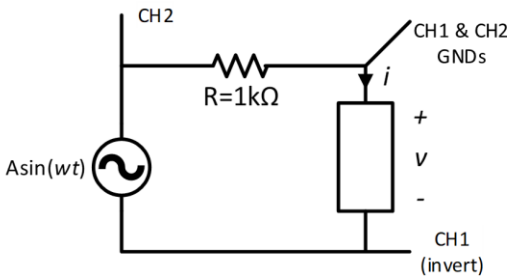
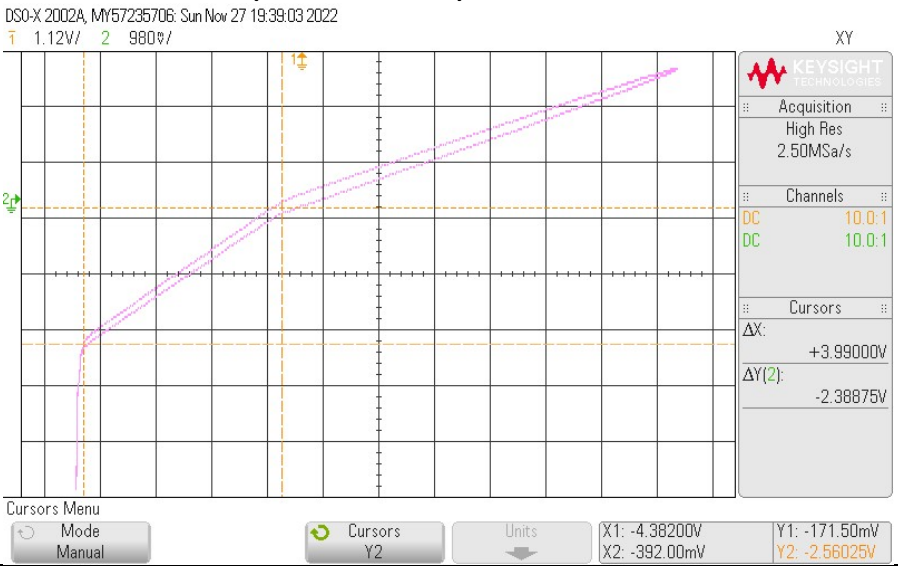
# WAQ2.

Q2.	
a) Drawing	Q2A0 pts. total
	Q2A1 pts.
	Q2A2 pts.
b) Design	Q2B0 pts. total
Configuration (student may ask for this)	Q2B1 pts.
<div data-bbox="207 361 662 644" data-label="Diagram"> </div>	
Parameters (students may ask for this) ALSO GIVE THE CONFIG. IF SELECTED WRONGLY	Q2B2 pts.
$C_d = 47 \text{ nF (given)}, R_d = 1.5 \text{ k}\Omega$	
c) Experimental results (TAKE A PICTURE)	Q2C0 pts. total
<div data-bbox="233 825 1115 1377" data-label="Figure"> </div>	Q2C1 pts.
Photo correct (0 if student didn't show)	
- Input amplitude wrong	
Drawing correct	Q2C2 pts.
- Without units	
- Without critical points	

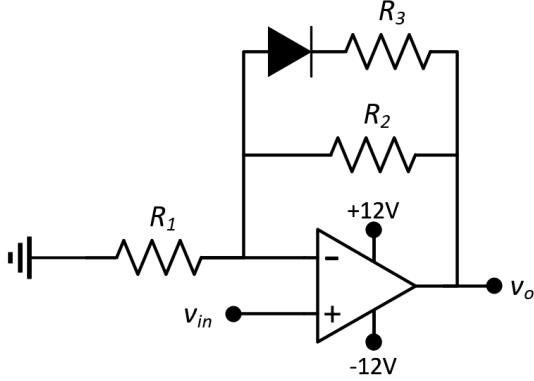
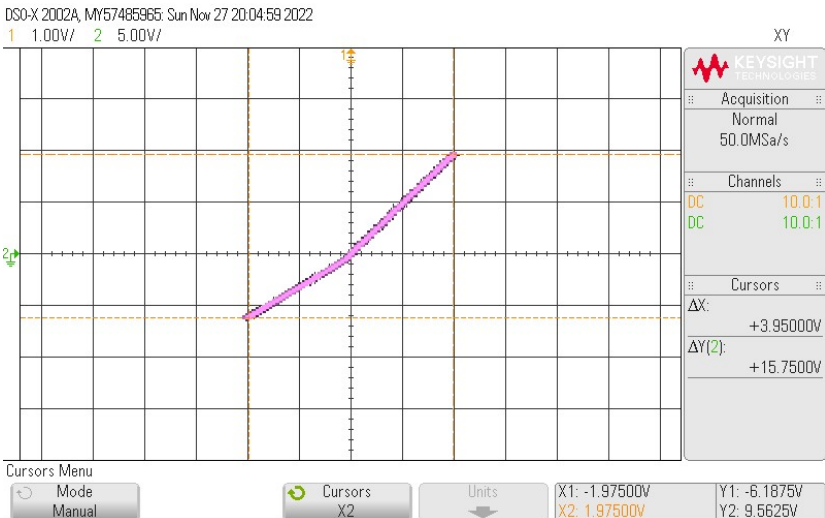


# Thursday Afternoon Results & Rubric

## ThAQ1.

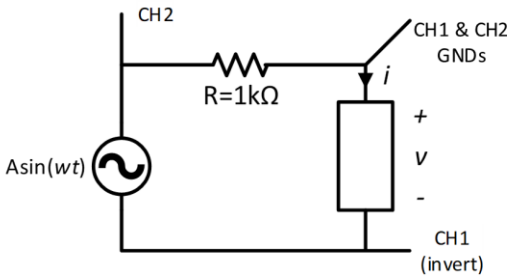
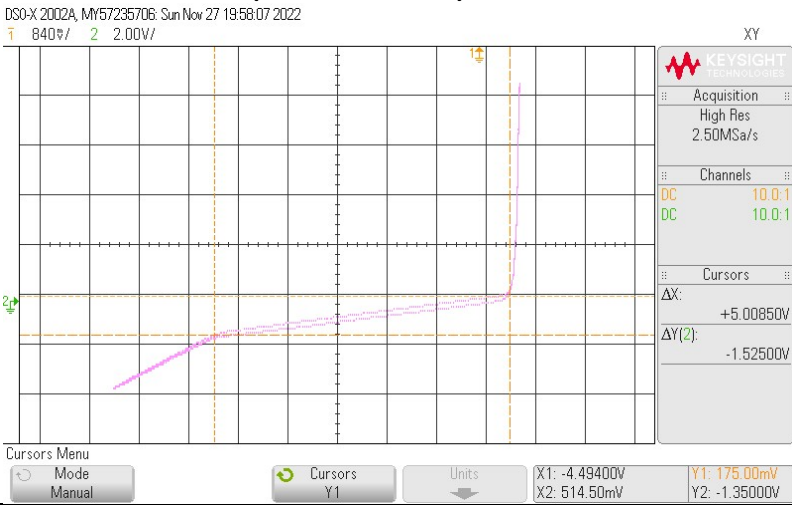
Q1.	
a) Circuit configuration & explanation:	Q1A0 pts. total
<b>Configuration (student may ask for this)</b> 	Q1A1 pt.
<b>Signal generator parameters (student may ask for this only)</b> $f = 30\text{Hz}$ , $\omega = 2 * \pi * 30\text{rad/sec}$ (anything less than 100 Hz is okay) $A = 10V_p \equiv 20V_{pp}$ (anything big enough to show all breakpoints is okay)	Q1A2 pts.
<b>Explanation:</b> * Signal generator works as a floating output * CH1 inverted to measure v * CH2 indirectly measures the current ( $iv_{1k\Omega} = i * 1k\Omega$ )	Q1A3 pts.
<b>b) I vs V characteristics (TAKE A PICTURE)</b> 	Q1B0 pts. total
<b>Photo correct (0 if student didn't show)</b> - Missing critical points	Q1B1 pts.
<b>Drawing correct</b> - Without units - Without critical points - Only theoretical	Q1B2 pts.

# ThAQ2.

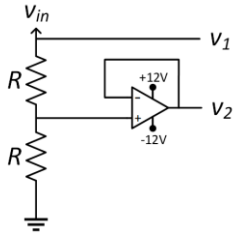
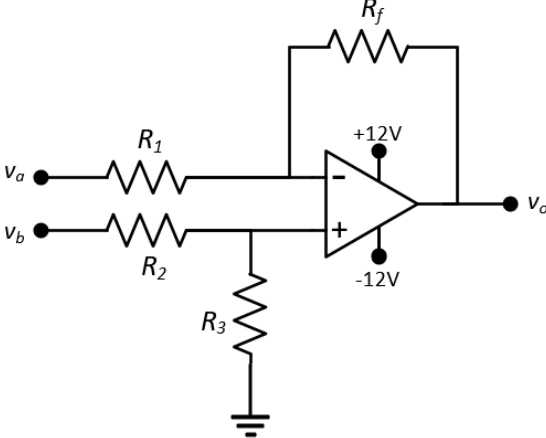
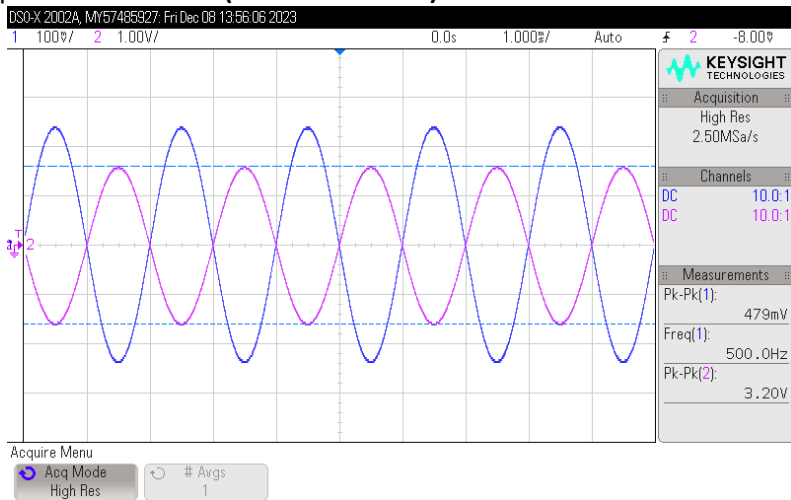
Q2.	
a) Drawing	Q2A0 pts. total
	Q2A1 pts.
	Q2A2 pts.
b) Design	Q2B0 pts. total
<p>Configuration (student may ask for this)</p> 	Q2B1 pts.
<p>Parameters (student may ask for this) ALSO GIVE THE CONFIG. IF SELECTED WRONGLY</p> <p><math>R_1 = 1k\Omega, R_2 = R_3 = 3.9k\Omega</math></p>	Q2B2 pts.
c) Experimental results (TAKE A PICTURE)	Q2C0 pts. total
 <p>DSO-X 2002A, MY57485965, Sun Nov 27 20:04:59 2022</p> <p>1 1.00V/ 2 5.00V/</p> <p>XY</p> <p>KEYSIGHT TECHNOLOGIES</p> <p>Acquisition</p> <p>Normal</p> <p>50.0MSa/s</p> <p>Channels</p> <p>DC 10.0.1</p> <p>DC 10.0.1</p> <p>Cursors</p> <p>ΔX: +3.95000V</p> <p>ΔY(2): +15.7500V</p> <p>Cursors Menu</p> <p>Mode Manual</p> <p>Cursors X2</p> <p>Units</p> <p>X1: -1.97500V Y1: -6.1875V</p> <p>X2: 1.97500V Y2: 9.5625V</p>	Q2C1 pts.
<p>Photo correct (0 if student didn't show)</p> <ul style="list-style-type: none"> <li>- Input amplitude wrong</li> </ul>	
<p>Drawing correct</p> <ul style="list-style-type: none"> <li>- Without units</li> <li>- Without critical points</li> </ul>	Q2C2 pts.

# Monday Afternoon Results & Rubric

## MAQ1.

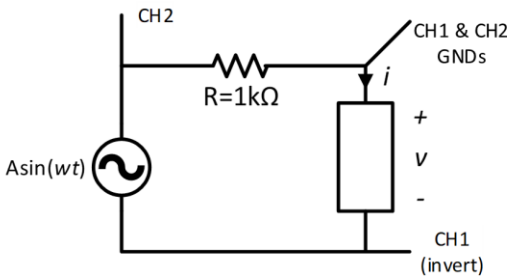
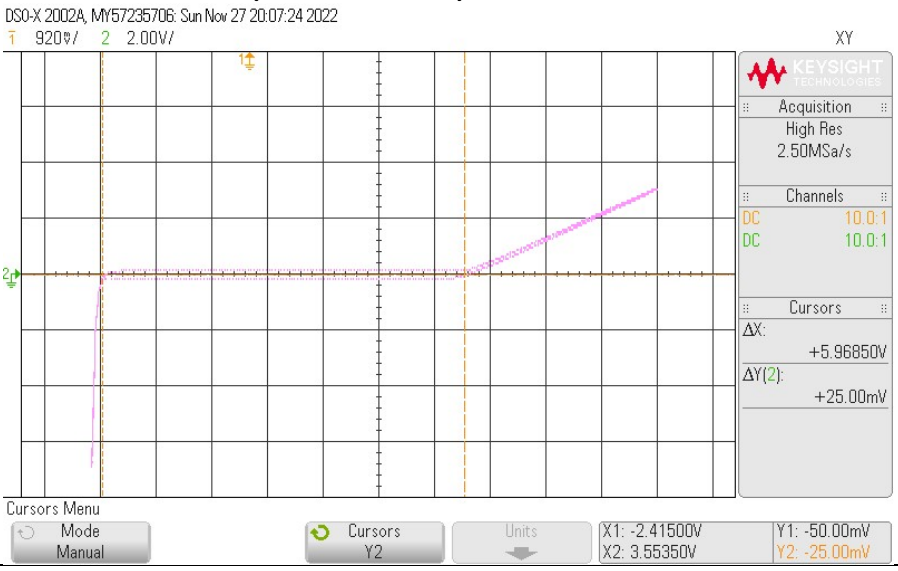
Q1.	
a) Circuit configuration & explanation:	Q1A0 pts. total
<b>Configuration (student may ask for this)</b> 	Q1A1 pt.
<b>Signal generator parameters (student may ask for this only)</b> $f = 30\text{Hz}$ , $\omega = 2 * \pi * 30\text{rad/sec}$ (anything less than 100 Hz is okay) $A = 10V_p \equiv 20V_{pp}$ (anything big enough to show all breakpoints is okay)	Q1A2 pts.
<b>Explanation:</b> * Signal generator works as a floating output * CH1 inverted to measure v * CH2 indirectly measures the current ( $iv_{1k\Omega} = i * 1k\Omega$ )	Q1A3 pts.
<b>b) I vs V characteristics (TAKE A PICTURE)</b> 	Q1B0 pts. total
<b>Photo correct (0 if student didn't show)</b> - Missing critical points	Q1B1 pts.
<b>Drawing correct</b> - Without units - Without critical points - Only theoretical	Q1B2 pts.

## MAQ2.

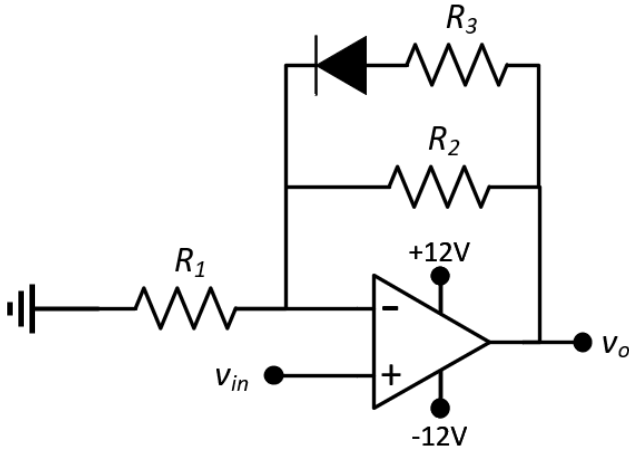

Q2.	
a) Voltage buffer	Q2A0 pts. total
<b>Configuration (student may ask for this)</b> 	Q2A1 pts.
Explanation of why we need a buffer (loading effect of input resistance of difference/summing amplifier)	Q2A2 pts.
b) Design	Q2B0 pts. total
<b>Configuration (student may ask for this)</b> 	Q2B1 pts.
<b>Parameters (student may ask for this) ALSO GIVE THE CONFIG. IF SELECTED WRONGLY</b> $R_1 = R_2 = 1k\Omega, R_3 = R_f = 8.2k\Omega$	Q2B2 pts.
c) Experimental results ( <b>TAKE A PICTURE</b> ) 	Q2C0 pts. total
Photo correct (0 if student didn't show) - Input amplitude wrong	Q2C1 pts.
Drawing correct - Without units - Without critical points	Q2C2 pts.

# Monday Morning Results & Rubric

## MMQ1.

Q1.	
a) Circuit configuration & explanation:	Q1A0 pts. total
<b>Configuration (student may ask for this)</b> 	Q1A1 pt.
<b>Signal generator parameters (student may ask for this only)</b> $f = 30\text{Hz}$ , $\omega = 2 * \pi * 30\text{rad/sec}$ (anything less than 100 Hz is okay) $A = 10V_p \equiv 20V_{pp}$ (anything big enough to show all breakpoints is okay)	Q1A2 pts.
<b>Explanation:</b> * Signal generator works as a floating output * CH1 inverted to measure v * CH2 indirectly measures the current ( $iv_{1k\Omega} = i * 1k\Omega$ )	Q1A3 pts.
<b>b) I vs V characteristics (TAKE A PICTURE)</b> 	Q1B0 pts. total
<b>Photo correct (0 if student didn't show)</b> - Missing critical points	Q1B1 pts.
<b>Drawing correct</b> - Without units - Without critical points - Only theoretical	Q1B2 pts.

# MMQ2.

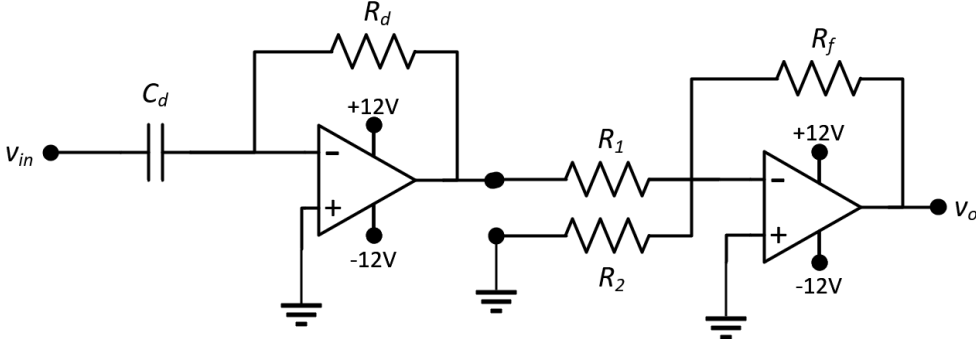
Q2.	
a) Drawing	Q2A0 pts. total
	Q2A1 pts.
	Q2A2 pts.
b) Design	Q2B0 pts. total
Configuration (student may ask for this)	Q2B1 pts.
	
Parameters (student may ask for this) ALSO GIVE THE CONFIG. IF SELECTED WRONGLY	Q2B2 pts.
$R_1 = 1k\Omega, R_2 = R_3 = 3.9k\Omega$	
c) Experimental results (TAKE A PICTURE)	Q2C0 pts. total
	Q2C1 pts.
Photo correct (0 if student didn't show)	
- Input amplitude wrong	
Drawing correct	Q2C2 pts.
- Without units	
- Without critical points	

## Make-Up Results & Rubric

### MUQ1.

Q1.	
a) Circuit configuration & explanation:	Q1A0 pts. total
<b>Configuration (student may ask for this)</b> 	Q1A1 pt.
<b>Signal generator parameters (student may ask for this only)</b> $f = 30\text{Hz}$ , $\omega = 2 * \pi * 30\text{rad/sec}$ (anything less than 100 Hz is okay) $A = 10V_p \equiv 20V_{pp}$ (anything big enough to show all breakpoints is okay)	Q1A2 pts.
<b>Explanation:</b> * Signal generator works as a floating output * CH1 inverted to measure v * CH2 indirectly measures the current ( $iv_{1k\Omega} = i * 1k\Omega$ )	Q1A3 pts.
b) I vs V characteristics <b>(TAKE A PICTURE)</b>	Q1B0 pts. total
Photo correct (0 if student didn't show)	Q1B1 pts.
- Missing critical points Drawing correct - Without units - Without critical points - Only theoretical	Q1B2 pts.

## MUQ2.

Q2.	
a) Drawing	Q2A0 pts. total
	Q2A1 pts.
	Q2A2 pts.
b) Design	Q2B0 pts. total
<b>Configuration (student may ask for this)</b> 	Q2B1 pts.
<b>Parameters (student may ask for this) ALSO GIVE THE CONFIG. IF SELECTED WRONGLY</b> $R_1 = R_2 = R_f = 1k\Omega$ & $C_d = 47nF$ & $R_d = 1.5k\Omega$ (R_2 can be removed)	Q2B2 pts.
c) Experimental results <b>(TAKE A PICTURE)</b>	Q2C0 pts. total
	Q2C1 pts.
Photo correct (0 if student didn't show) - Input amplitude wrong	
Drawing correct - Without units - Without critical points	Q2C2 pts.