3.2.2 Measure $I_{C1}$, $I_{C2}$, $I_{C3}$, and $V_{out,DC}$. How do they compare with hand calculations?

\[
\begin{align*}
I_{C1} &= \\
I_{C2} &= \\
I_{C3} &= \\
V_{out,DC} &=
\end{align*}
\]

3.2.3 Sketch the waveforms at $v_{in+}$ and $v_{out+}$.

3.2.4 Measure the peak-to-peak voltages of $v_{in+}$ and $v_{out+}$

\[
\begin{align*}
v_{in+,p-p} &= \\
v_{out+,p-p} &=
\end{align*}
\]
3.2.5 Qualitatively describe how $v_{out+}$ and $v_{out-}$ are related. Is this what you’d expect?

3.2.6 Measure the peak-to-peak voltage of $v_{out+} - v_{out-}$ and calculate the differential gain of the circuit. Does this match the gain you calculated in the prelab?

\[
v_{out,p-p} =
\]

\[
A_{DM} =
\]

3.2.7 What do you see at the output? Why?

3.2.8 Measure the gain. Does it match your prelab calculations? Does it match your result from 3.2.6?

\[
A_{DM} =
\]

3.3.2 Sketch the output waveform. Why isn’t it sinusoidal?
3.3.4 Calculate the differential gain of the amplifier with the added load.

\[ A_{DM} = \]

3.3.5 Sketch \( v_{out} \). What is the measured differential gain of the circuit? How does it compare to your hand calculations? Does it match the gain you observed in step 3.2.6? Should it?

\[ A_{DM} = \]

3.4.1 Attach your netlist on a separate sheet.

3.4.2 Use SPICE to find \( I_{C1} \), \( I_{C2} \), \( I_{C3} \), and \( V_{out,DC} \). Compare these values with your calculations from the prelab and measurements in lab.

\[ I_{C1} = \]
\[ I_{C2} = \]
\[ I_{C3} = \]
\[ V_{out,DC} = \]
3.4.3 Attach your plot on a separate sheet. What is the gain as measured from the plot? Does it match your hand calculations? Does it match your measurements?

\[ A_{DM} = \]