Experiment 1: Non-Ideal Op-Amps Lab Worksheet

3 Lab

3.1 DC Open Loop Transfer Characteristic

Measured values of attenuator resistors: ______________, ______________

Open loop gain $A_0$: ______________

Voltage offset $V_{off} \equiv -V_{shift}$: ______________

3.2 Nulling the Offset Voltage

Measured resistance values between wiper and outside leads of potentiometer: ______________, ______________

3.3 Slew Rate Measurement in Unity Gain Configuration

Slew Rate: ______________

Attach your oscilloscope trace(s) of the slew rate measurements to the end of the worksheet.

3.4 Gain and Bandwidth in Unity Gain Configuration

Attach your oscilloscope trace of the slewing output sine signal to the end of the worksheet.

Gain $A_0$: ______________

Bandwidth $f_{3\text{dB}}$: ______________

3.5 Gain and Bandwidth in Non-Inverting Amplifier Configuration

$R = 10 \text{ k}\Omega$: Gain $A_0$: ______________

Bandwidth $f_{3\text{dB}}$: ______________

$R = 100 \text{ k}\Omega$: Gain $A_0$: ______________

Bandwidth $f_{3\text{dB}}$: ______________

Attach your plot of the magnitude responses $20\log \left| \frac{V_{out}}{V_{in}} \right|$ of the unity gain amplifier from Problem 3.4 and the two non-inverting amplifiers to the end of the worksheet.