

EE105 Lab Experiments

## 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  $f_{3dB}$ : \_\_\_\_\_

#### 3.5 Gain and Bandwidth in Non-Inverting Amplifier Configuration

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

Bandwidth  $f_{3dB}$ : \_\_\_\_\_

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

Bandwidth  $f_{3dB}$ : \_\_\_\_\_

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.