Name: _____

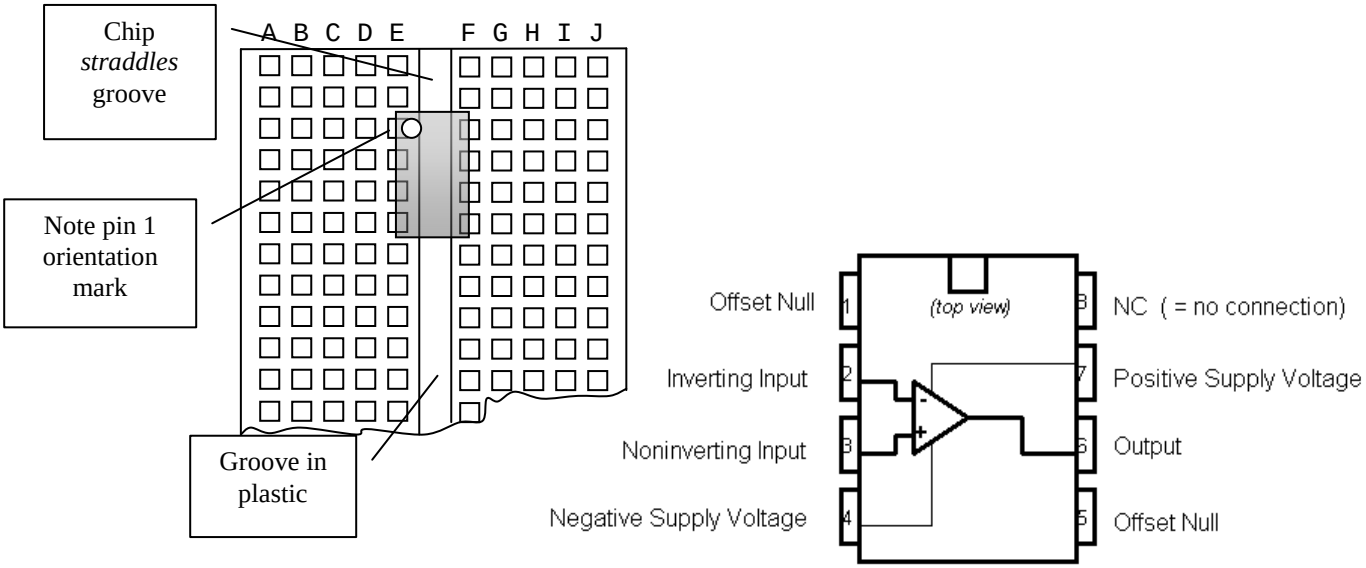
MUS 348 / EE 480

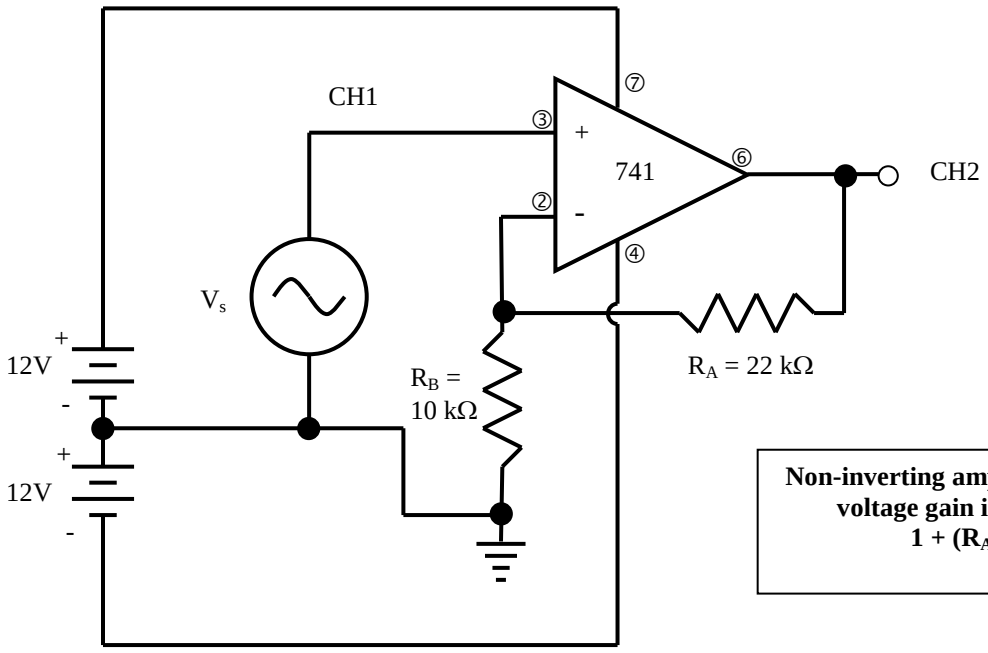
Spring 2010
Lab experience #5

Procedure

Your kit has four 8-pin DIP packages: two are type 741 op amps and two are another type of op amp, the OP-27. Today we will use one of the type 741 op amps from your kit.

Using the bench power supply and your breadboard, carefully assemble the op amp circuit shown below. REMEMBER TO ASSEMBLE THE CIRCUIT WITH THE POWER OFF, then TEST and VERIFY the bench supply to make sure the voltages are correct BEFORE applying power to the circuit. Start with the function generator set for minimum output.





Non-inverting amplifier configuration: voltage gain is expected to be: $1 + (R_A/R_B) = 3.2$

Use the function generator and the oscilloscope to observe simultaneously the source voltage (CH1) and the voltage at the op amp's output (CH2).

With the function generator set for 1 kHz sinusoidal output, complete the table below:

CH1 Voltage Vs (p to p)	***CH2 Output Voltage (p to p)***	***Gain (Vo/Vs)***
100 mV		
500 mV		
1 V		
4 V		
8 V*		

**What happens to the output for this circuit configuration when V_s is 8V peak to peak?*

If time permits, choose two different resistors for R_A and R_B, calculate the expected voltage gain using $(1+R_A/R_B)$, then make measurements to show the gain behavior. REMEMBER TO TURN OFF THE POWER BEFORE MODIFYING THE CIRCUIT, THEN REMEMBER TO TURN THE POWER BACK ON WHEN YOU ARE READY TO MAKE MEASUREMENTS.

Chosen R_A = _____ Chosen R_B = _____ Expected gain = _____

Choose a reasonable range of input voltages to demonstrate the gain.

CH1 Voltage Vs (p to p)	***CH2 Output Voltage (p to p)***	***Gain (Vo/Vs)***