ELG3331: Lab1
Inverting Operational Amplifier

Objectives

- To introduce operational amplifier circuits.
- To illustrate the power supply regulation properties of operational amplifiers

Theory

The figure below shows the circuit diagram and symbols for the operational amplifier. Refer to Chapter 8 of the textbook for further information.

The experiment deals with the following circuit. Refer to “FOCUS ON METHODOLOGY” pp. 410-412 for op-amp data sheet.
Experimental Procedure

- Assemble the above circuit with $R_F = 20 \, R_S$. The power supply should be $\pm 15 \, \text{V}$.
- Measure and plot its output voltage against its input voltage using an oscilloscope. Set the input $v_s$ to a sine wave with frequency 100 Hz and peak-to-peak amplitude 2 V.
- Reduce the power supply to $\pm 10 \, \text{V}$ and see what will happen.
- Return to $\pm 15 \, \text{V}$ and change the frequency to 100 kHz and see what will happen.

Report

- Comment on how circuit behavior changes when the power supply changes.
- Comment on how circuit behavior changes when the frequency changes.