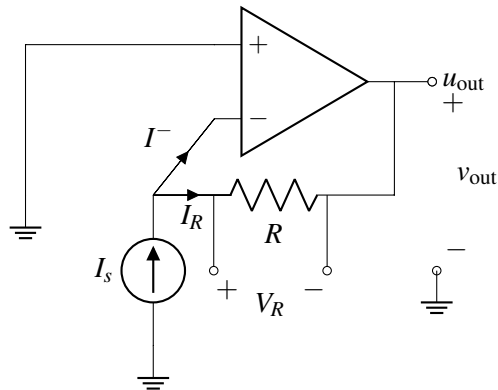


EECS 16A Designing Information Devices and Systems I

Fall 2019 Discussion 11B

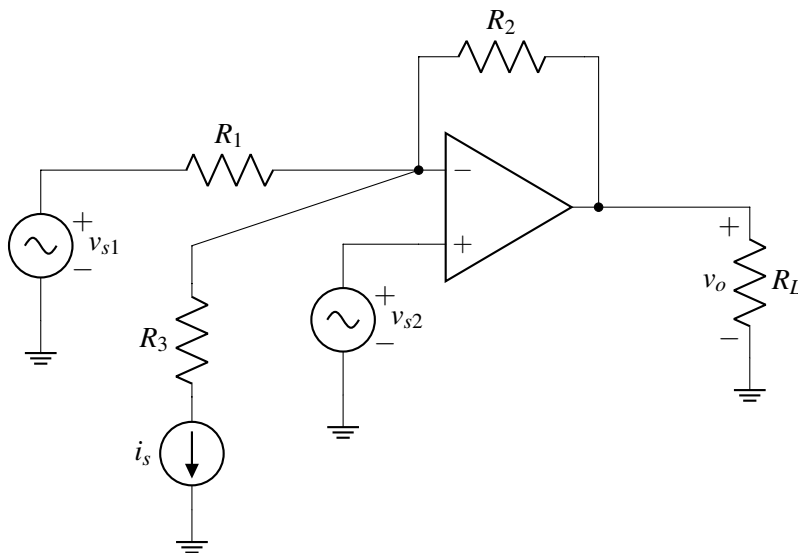
1. A Trans-Resistance Amplifier



- Calculate v_{out} as a function of I_s and R .
- Implement the same behavior as the above circuit, but replace the current source with a voltage source and a resistor.

2. Node Voltage Analysis with Op-Amps

Use node voltage analysis to find the output voltage v_o for the circuit shown below.



3. Take Node of the Voltage Sources

Use nodal analysis to solve for the voltages v_x and v_y . Use the following values for numerical calculations. **Note the polarity on the voltage sources.**

$$\begin{aligned}V_1 &= 5\text{ V} & R_1 &= 10\ \Omega \\V_2 &= 5\text{ V} & R_2 &= 50\ \Omega \\G &= \frac{1}{4}\text{ S} & R_3 &= 40\ \Omega\end{aligned}$$

