

ECE 211: Lab #7

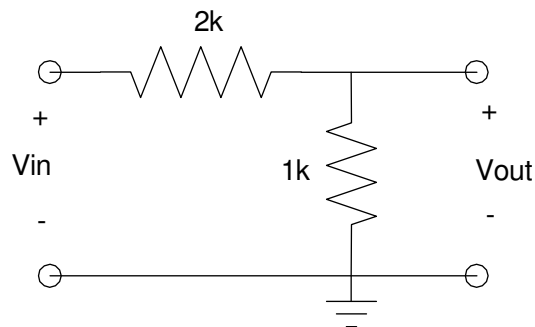
Op Amp Amplifiers

If you want to build a circuit with a gain less than one, you don't need an op-amp. Two resistors will do.

Voltage Divider ($0 < \text{gain} < 1$)

1) Build the following circuit. Verify that the gain is $1/3$ rd

- *Apply five different voltages to V_{in}*
- *Measure the voltage at V_{out}*
- *Compute the gain*



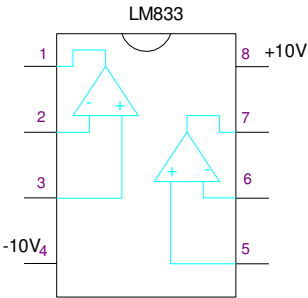
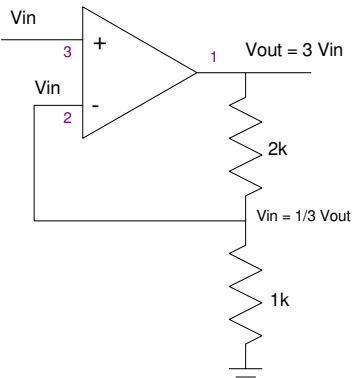
V_{in}	V_{out}	Gain V_{out} / V_{in}

If you want to build a circuit with a gain more than one, you need an op-amp.

Noninverting Amplifier ($1 < \text{gain} < \text{infinity}$)

2) Build the following circuit. Verify that the gain is +3

- Apply five different voltages to V_{in}
- Measure the voltage at V_{out}
- Compute the gain

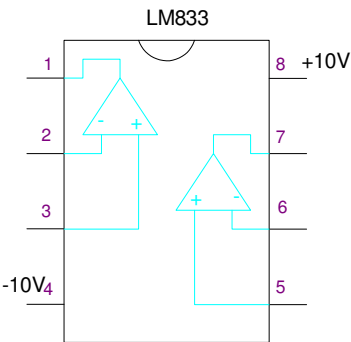
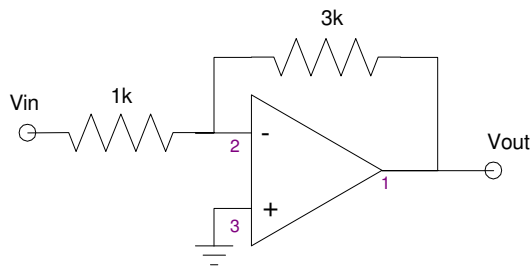


V_{in}	V_{out}	Gain V_{out} / V_{in}

Inverting Amplifier (-infinity < gain < 0)

3) Build the following circuit. Verify that the gain is -3

- Apply five different voltages to V_{in}
- Measure the voltage at V_{out}
- Compute the gain



V_{in}	V_{out}	Gain V_{out} / V_{in}