

Inverting Operational Amplifier

Student Group

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Inverting Operational Amplifier

Gain of Op-Amp

Build the following circuit in [figure 1](#) with the power supply and a multimeter.



Fig. 1: Inverting Op-Amp

$U_{DD} = 10\text{ V}$, $U_{SS} = -10\text{ V}$, $R_1 = 10\text{ k}\Omega$

Calculate the necessary value for R_2 , so that the Output U_{OUT} is $+5\text{ V}$. Use the supply voltage of the operational amplifier for U_{IN} .

$U_{IN} =$

$$R_2$$

Investigation of inverting input



Fig. 2: Inverting Op-Amp: Investigate inverting input

$$U_{DD} = 10\text{V}, U_{SS} = -10\text{V}, R_1 = 10\text{k}\Omega$$

Use the values from figure 1 for U_{IN}, U_{OUT}, R_2 .

Complete the arrows in the schematic of the circuit.
 Determine the the currents I_1 and I_2 indirectly through a voltage measurement.
 Calculate the sum of the currents at node N_{12} .

$$I_{\text{1}} \approx I_{\text{2}}$$
$$I_{\text{2}} \approx I_{\text{N12}}$$
$$I_{\text{N12}} \approx I_{\text{2}}$$

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