



EASTERN MEDITERRANEAN UNIVERSITY

DEPARTMENT OF ELECTRICAL AND ELECTRONIC

ENGINEERING

EENG342 ELECTRONICS II

Fall 2019

EXPERIMENT 2

Inverting and noninverting amplifier

Name	Std. No.

Group No.:

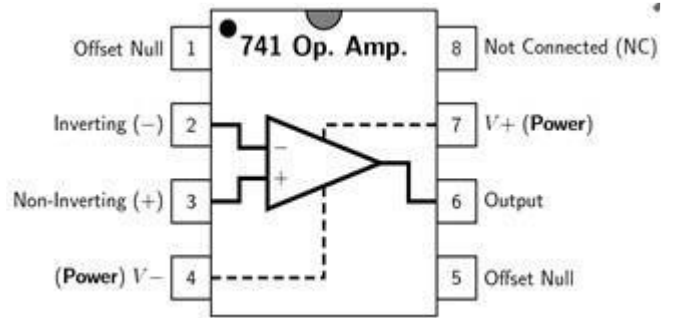
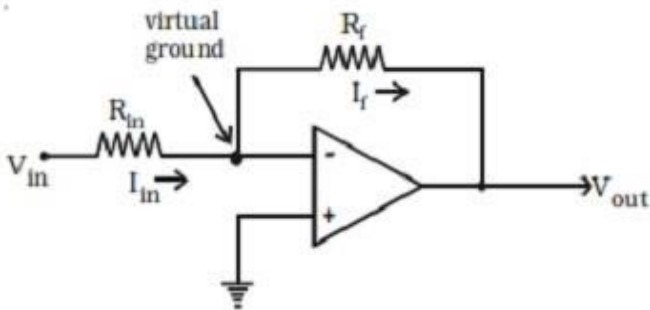
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Objective: An understanding of the behavior of inverting and non-inverting amplifier

Inverting and noninverting amplifiers are two configurations that operational amplifiers can be set up in. The **main difference** between inverting and noninverting amplifier is that an **inverting amplifier produces an output which is 180° out of phase with the input**, whereas a **noninverting amplifier produces an output which is in phase with the input**.

Part 1: inverting amplifier

Step 1: Construct the inverting amplifier circuit shown below



Oscilloscope Settings:

CH 1 (V_i)	: 1 VOLTS/DIV	AC Coupling
CH 2 (V_o)	: 1 VOLTS/DIV	AC Coupling
TIME	: 0.5 m SEC/DIV	
0- REFERENCE	: middle horizontal line	

$$R_f = 22 \text{ k}\Omega$$

$$R_{in} = 10 \text{ K}\Omega$$

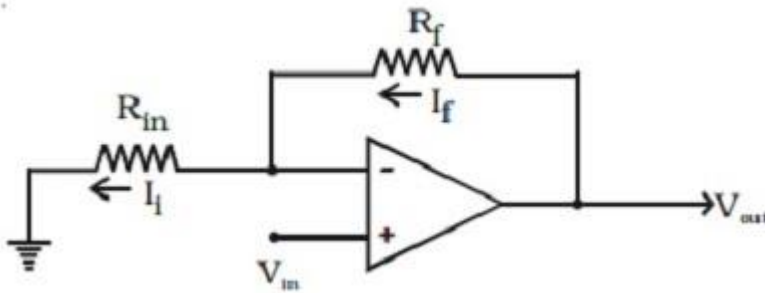
Step 2: Apply 4 V_{p-p} sinewave (1 KHz) as an input signal.

Step 3: Using the given oscilloscope settings sketch input and output voltages to the provided graph paper.

On the same graph, add a curve for the theoretical output voltage

Part 2: Non-inverting amplifier

Modify the circuit in part 1 to the non-inverting configuration shown below



Using the same oscilloscope setting of part1, sketch the input, theoretical and experimental output voltage to the graph paper.

QUESTIONS:

Q1) in the graphs of part1, if there is a difference between the experimental and theoretical result? Comment on your answer.

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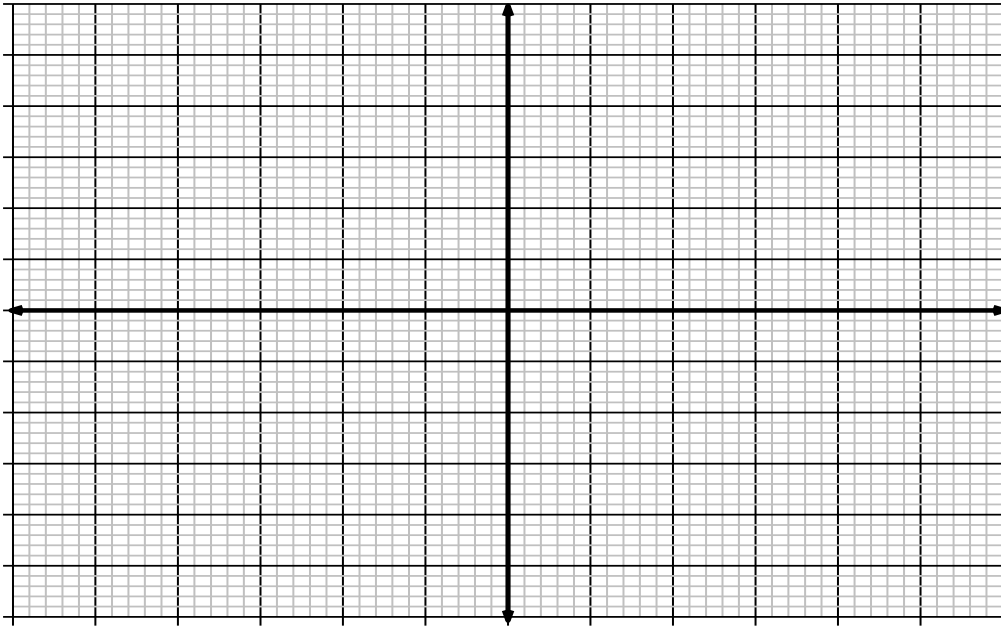
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Part 1: Inverting amplifier circuit



Part 2: Non-inverting amplifier circuit

