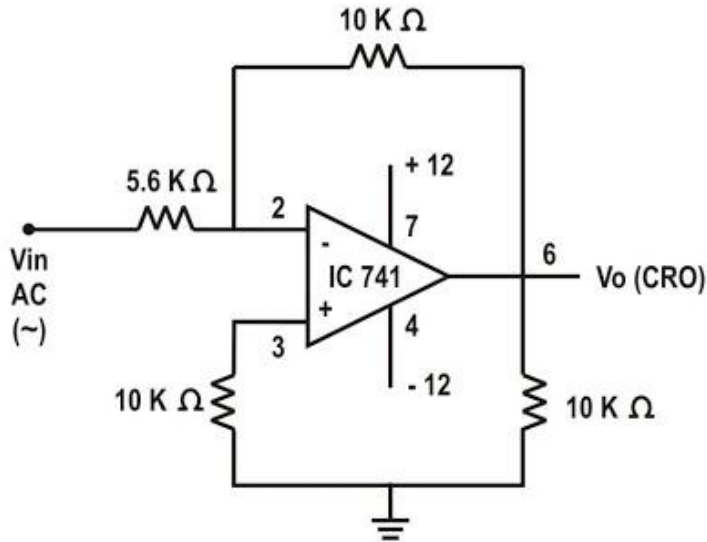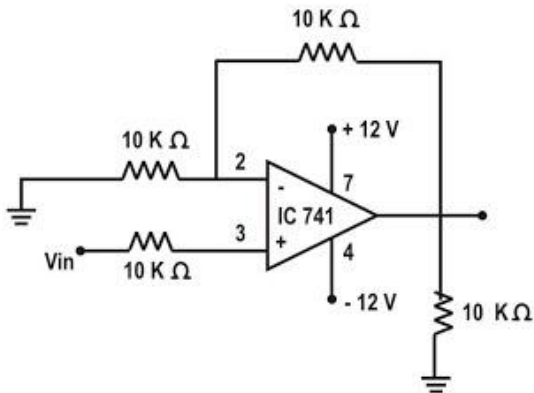# INVERTING AND NON INVERTING AMPLIFIERS

1) Inverting amplifier

        In this mode the positive input terminal of the amplifier is grounded and the input signal is applied to the negative input terminal through resistor R .The feedback applied through a resistor from output to the input terminal is negative.

2) Non inverting amplifier

In this mode the negative input terminal of the input is grounded and the input signal is applied to the positive input terminal through R. The feed back applied through a resistor from output to input terminal is negative.

1. Gain of the inverting amplifier

$A = -R_f / R_i$

$V_0 = -A_{vin}$

$V_0 / V_{in} = -R_f / R_i$ ---------------------------- (1)

Assume $A = 2$,

Input voltage $V_{in} = 1$ Volts

$R_1 = 10$ KΩ

Substitute all values in equation (1) and find Rf value.

2. Gain of the non – inverting amplifier

$V_o / V_{in} = (R_f + R_i) / R_i.$

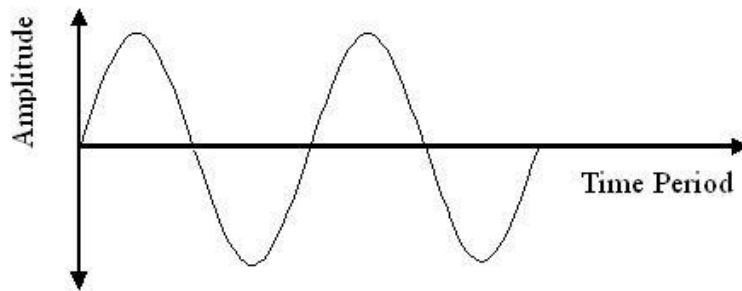$A = 1 + R_f/R_i$ ----------------- (2)

Assume $A = 2$,

Input voltage $V_{in} = 1$ Volts

$R_{in} = R_1 = 10$ KΩ

Substitute all values in equation (2) and find Rf value.

MODEL GRAPH

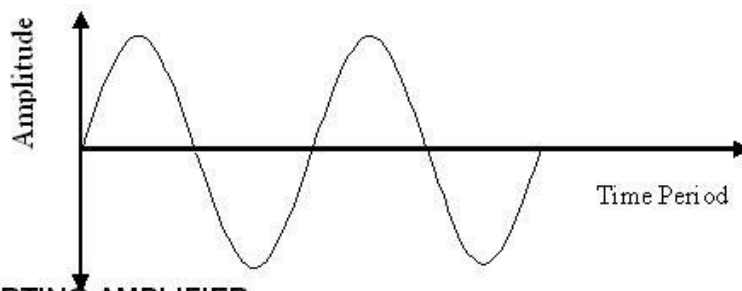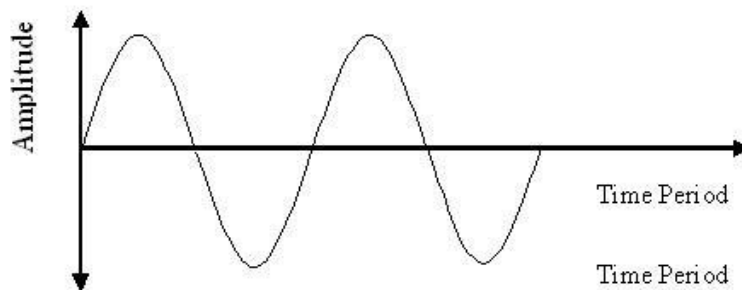INVERTING AMPLIFIER

INPUT SIGNAL

OUTPUT SIGNAL:

NON - INVERTING AMPLIFIER:
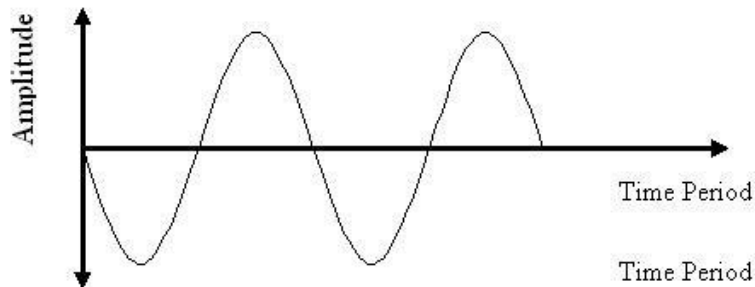
INPUT SIGNAL:

OUTPUT SIGNAL: