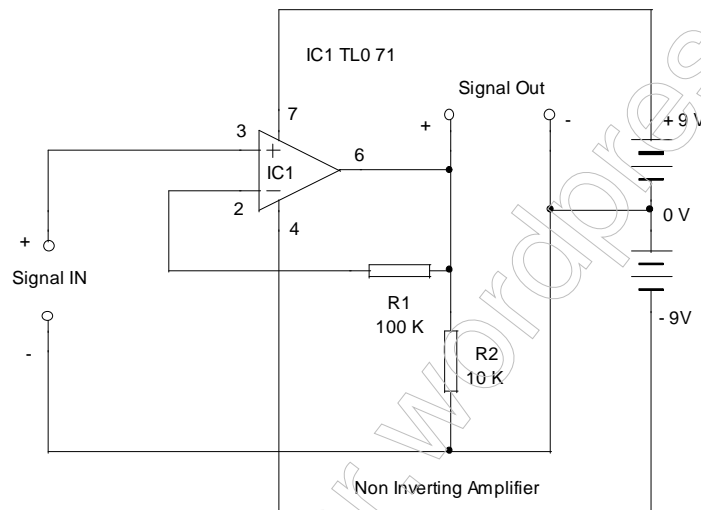


## How the gain of a Non Inverting Amplifier is determined?

### Non inverting amplifier

The diagram of the Non inverting amplifier works on dual power supply is shown below. The signal is given to the Non inverting input (+) and the output waveform is in exact phase with the input wave form. To give a negative feed back, resistor R1 is connected between the output and inverting (-) input. This amplifier is known as **Unity gain** since it has the **gain of 1**. To give a gain more than 1, the feed back voltage is reduced by the resistor R2.



Resistors R1 and R2 act as a potential divider to reduce the feed back voltage so that the OpAmp can amplify the signal. The degree of amplification or Gain of the Op Amp is determined by the ratio of R1 and R2 according to the formula

$$\text{Gain} = (R1/R2) + 1$$

The value chosen for R1 is 100 K and for R2 as 10 k. So the gain is

$$\text{Gain} = (100000 / 10000) + 1 = 11.$$

So when the input signal is 10 mV, then the output voltage will be

$$10 \times 11 = 110 \text{ mV.}$$