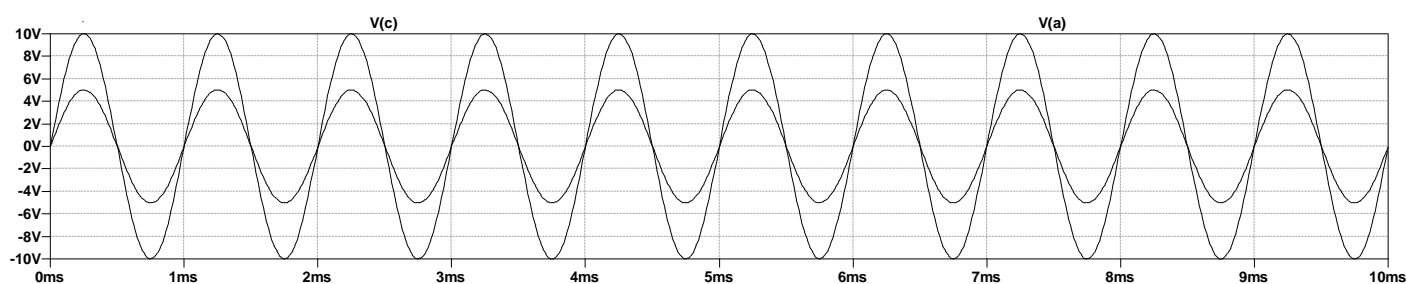


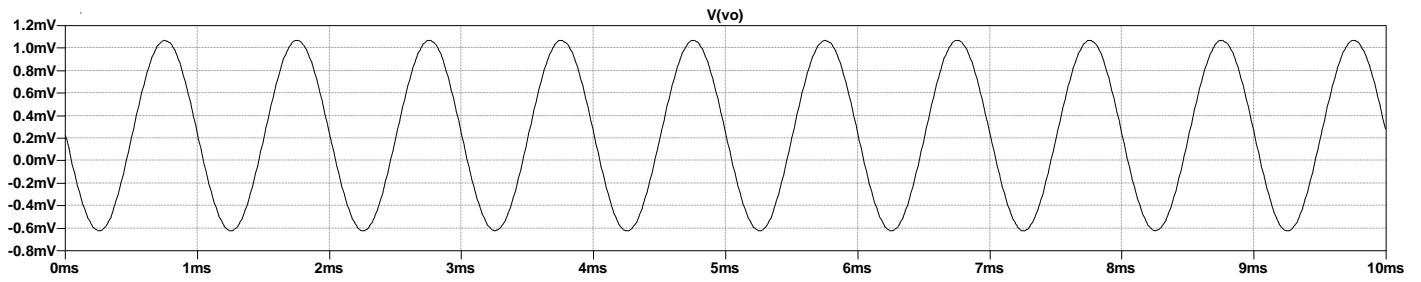
**G.Karishni**  
**CB.EN.U4ECE19116**



The circuit diagram shows a non-inverting amplifier configuration using a  $\mu\text{A741}$  op-amp. The input signal is a sine wave  $\text{SINE}(0 \ 10 \ 1\text{k})$  connected to a voltage divider consisting of resistors  $R1$  (100k),  $R2$  (1k), and  $R3$  (100k). The output of the divider is connected to the non-inverting input (+) of the op-amp. The op-amp's inverting input (-) is connected to ground through resistor  $R5$  (10k) and to the output through resistor  $R7$  (100k). The output of the op-amp is  $V_o$ . A feedback network consisting of resistor  $R4$  (10k) and resistor  $R6$  (100k) is connected between the output and the non-inverting input. The output is also connected to a load resistor  $R7$  (100k) to ground. The circuit is simulated using a transient analysis (.tran 10m) and includes the  $\mu\text{A741}$  model (.inc ua741.lib).

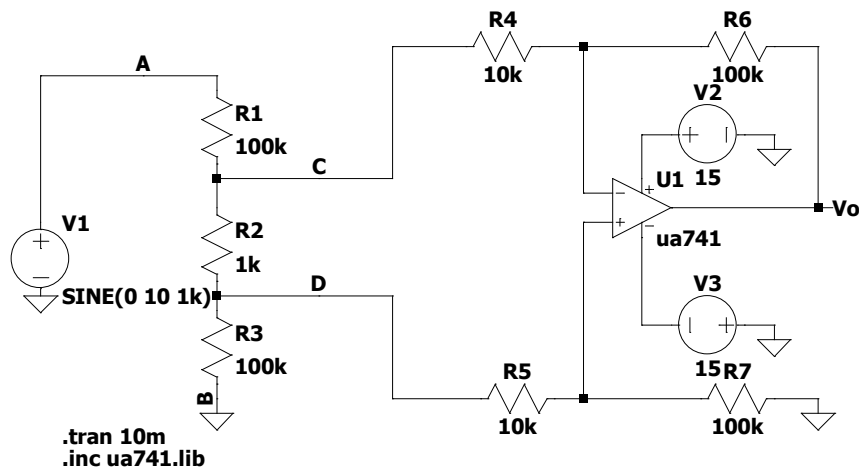
The graph shows a periodic voltage waveform  $V(c)$  over a 10 ms interval. The voltage ranges from -3.0 V to 3.0 V. The waveform is a sine wave with an amplitude of 2.5 V and a period of 1 ms. The voltage starts at 0 V at  $t = 0$  ms, reaches a peak of 2.5 V at  $t = 0.25$  ms, crosses 0 V at  $t = 0.5$  ms, reaches a trough of -2.5 V at  $t = 0.75$  ms, and returns to 0 V at  $t = 1$  ms. This pattern repeats every 1 ms.

Output waveform (at Vo)

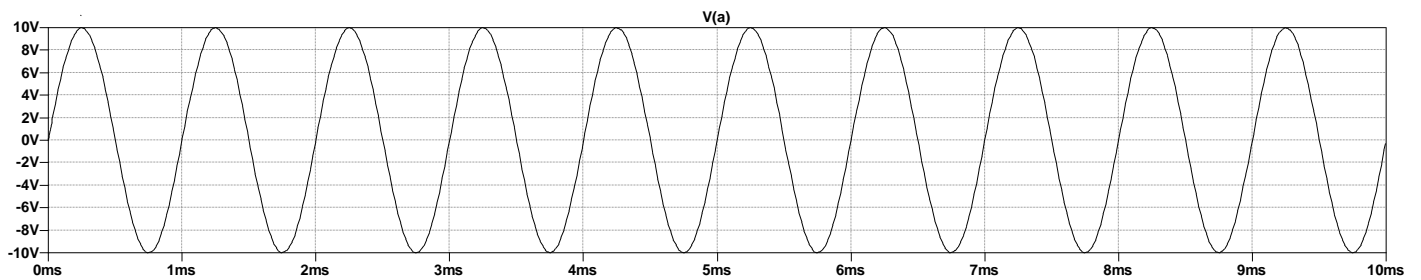


## 6. Differential mode

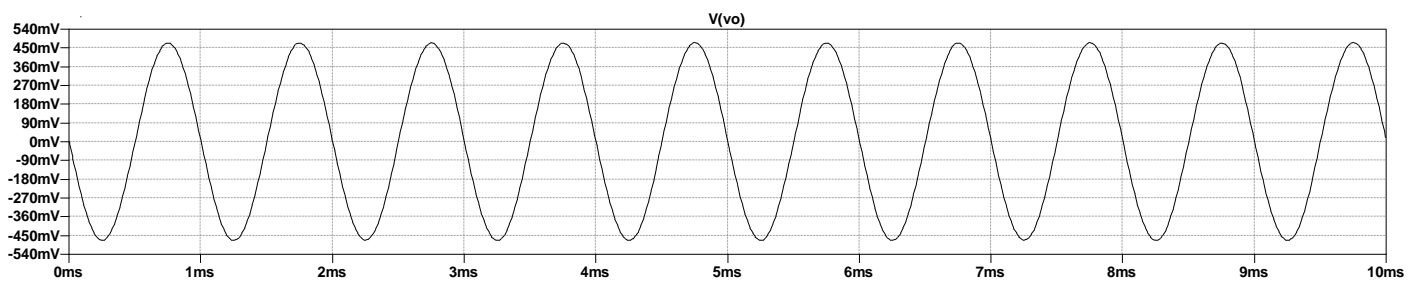
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Input waveform (at A)

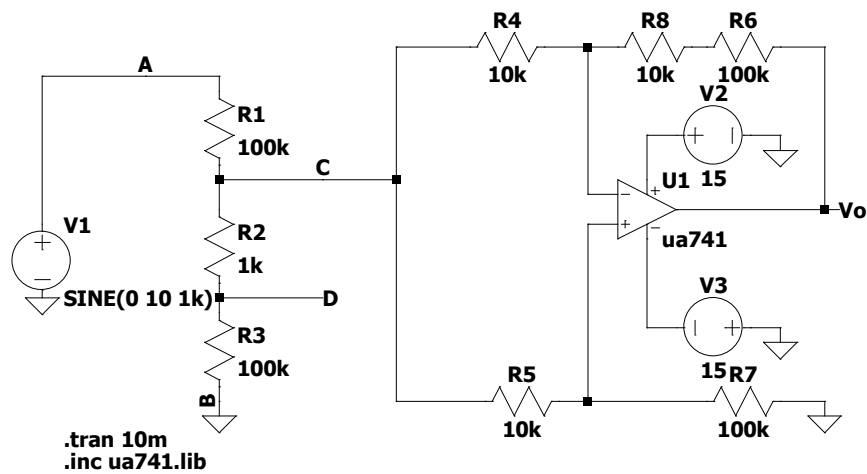


Output waveform (at Vo)

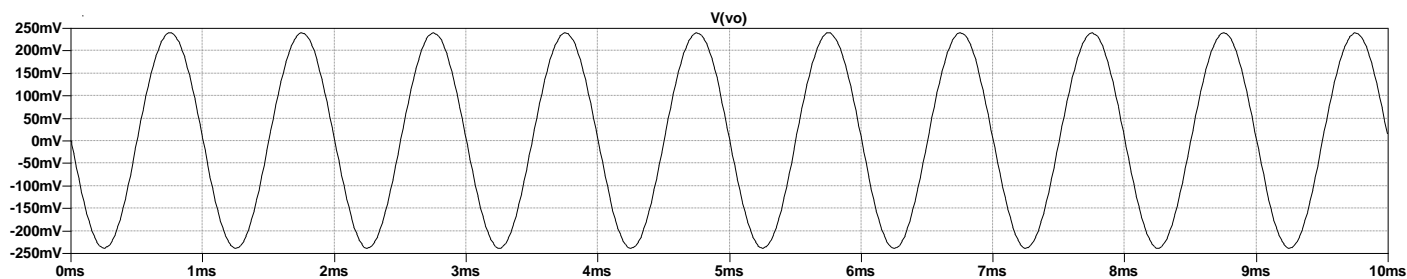


## 8. a) Common mode

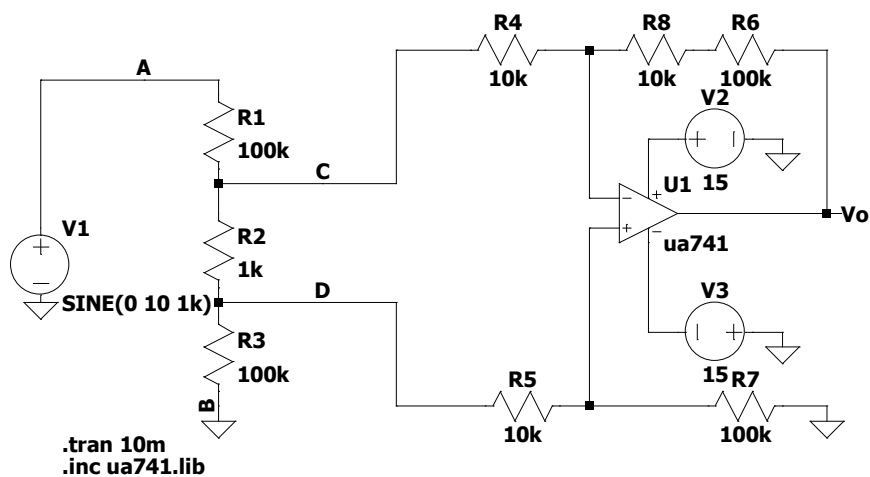
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Output waveform (at Vo)



## b) Differential mode



Output waveform (at Vo)

