Aim: To study the working of Wien bridge oscillator, log and antilog amplifiers.

Software used: LTspice

Wein bridge oscillator:

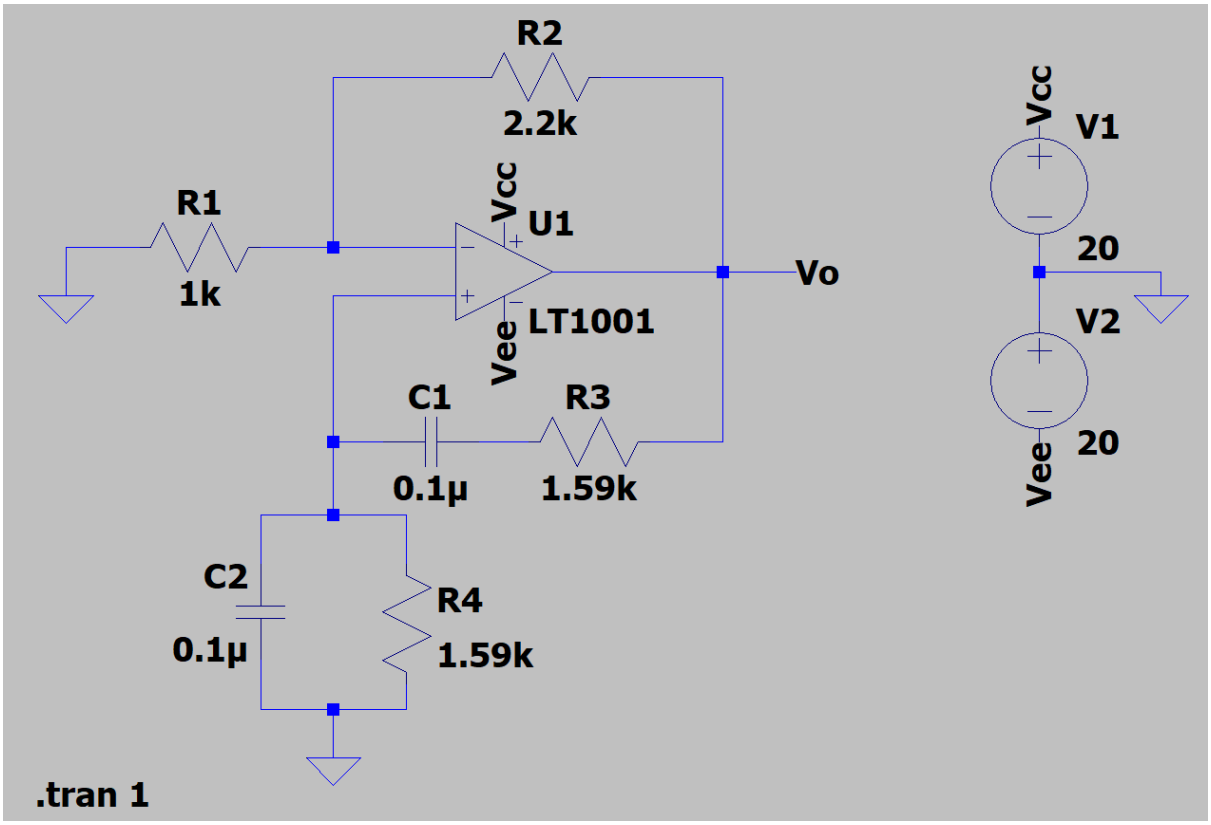
(a) Take C= 0.1 μF and calculate R so as to get a frequency of 1 kHz for the output Vo.

f = 1/(2*pi*R*C)

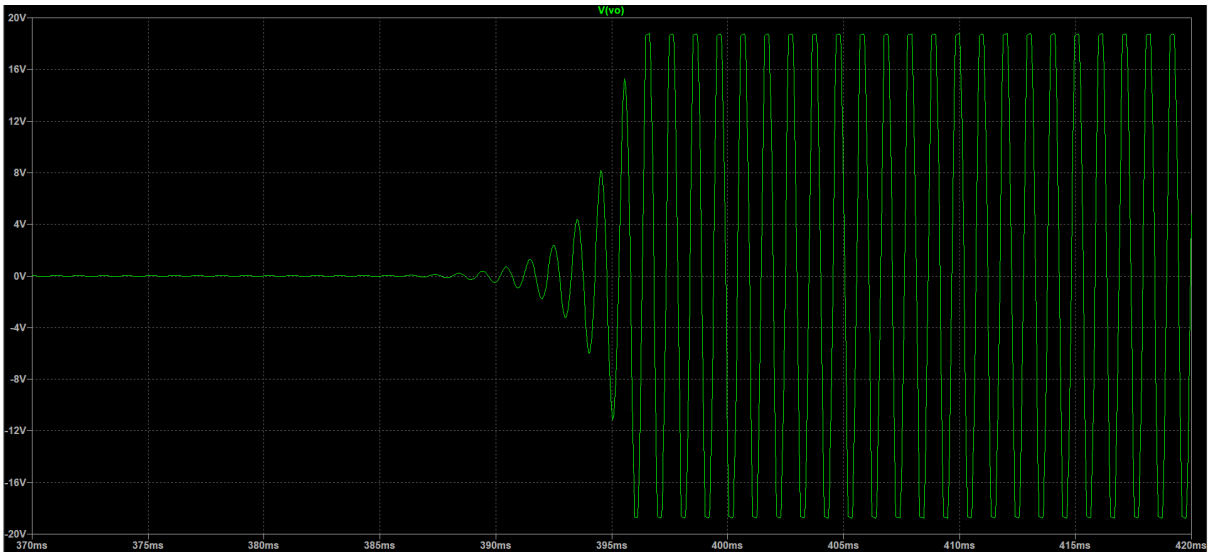
R = 1/(2*pi*1000*0.1*10^-6)

R = 1.59 kohm

Circuit:

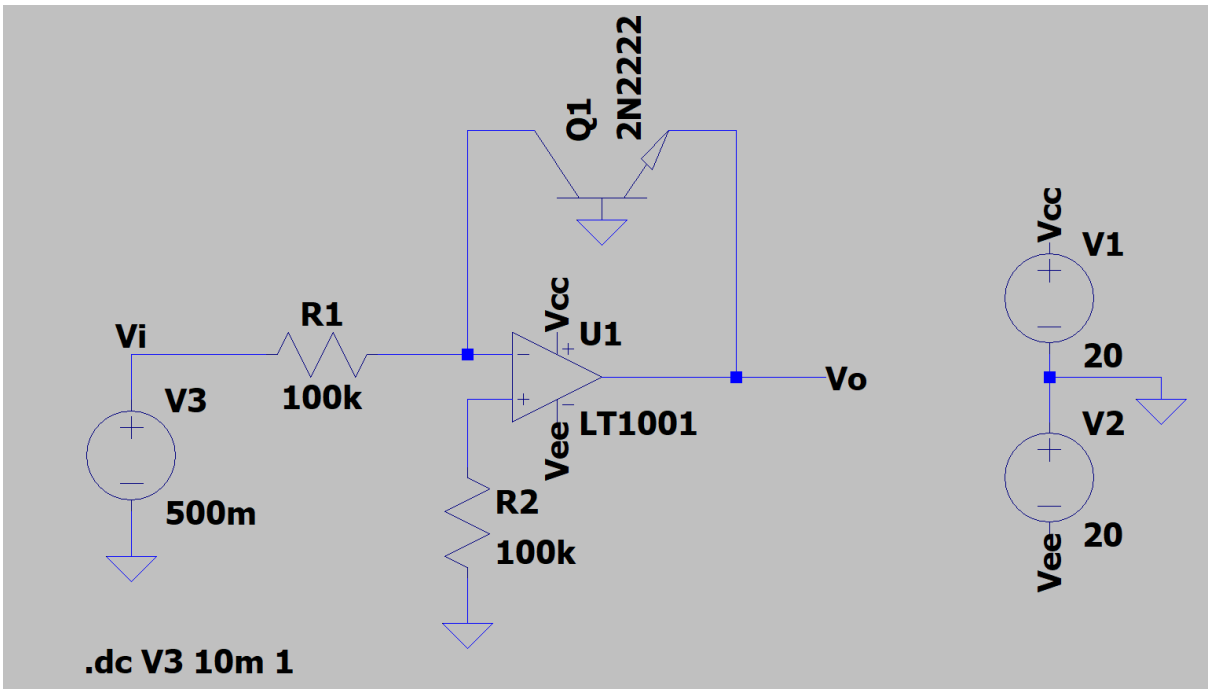


Output waveform on scope:

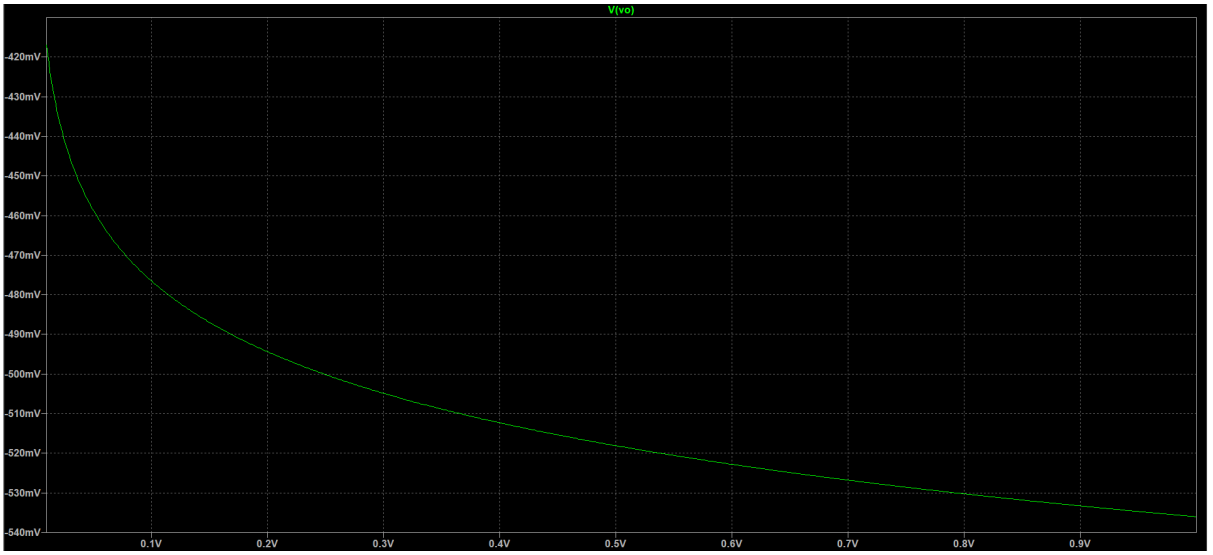


Logarithmic amplifier:

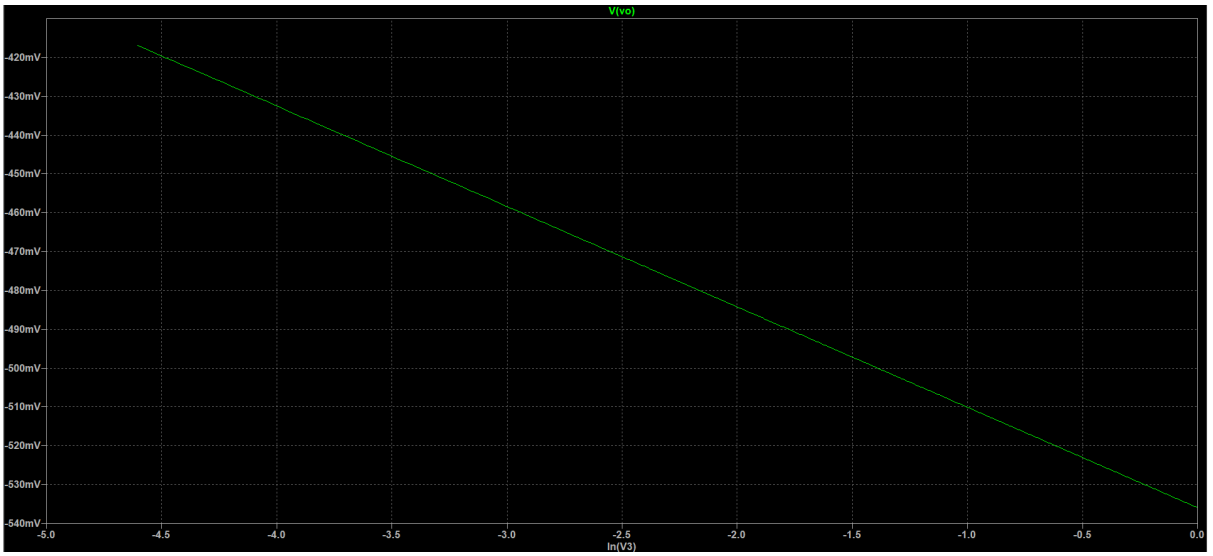
Circuit:



Vo as a function of Vi:

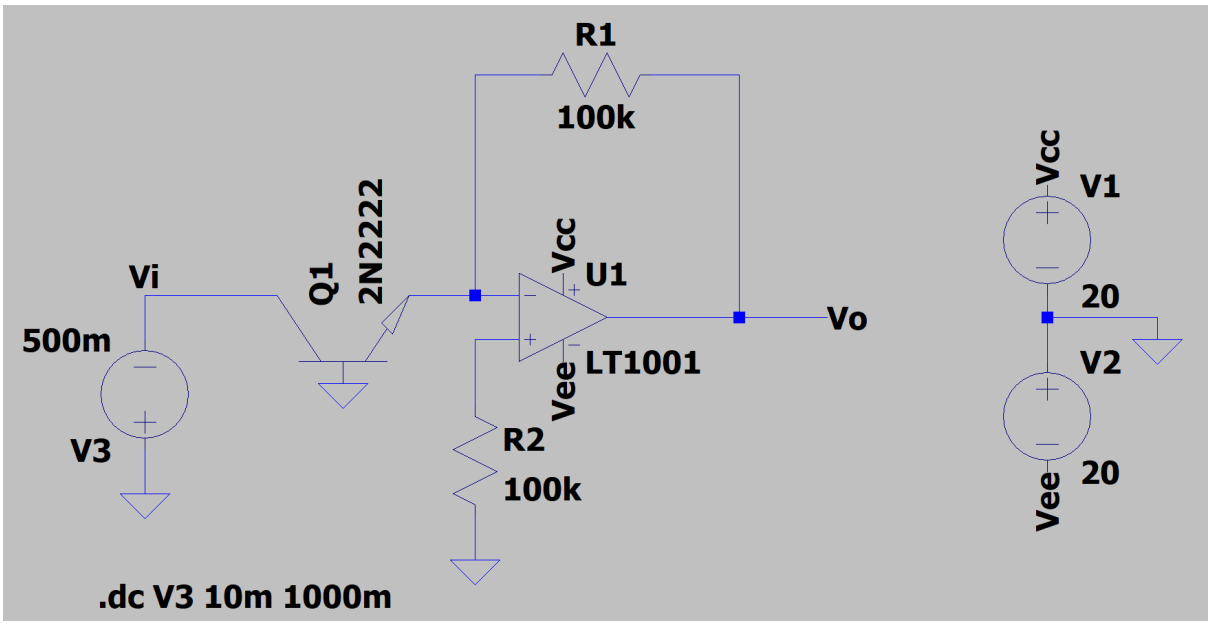


Vo as a function of ln(Vi):

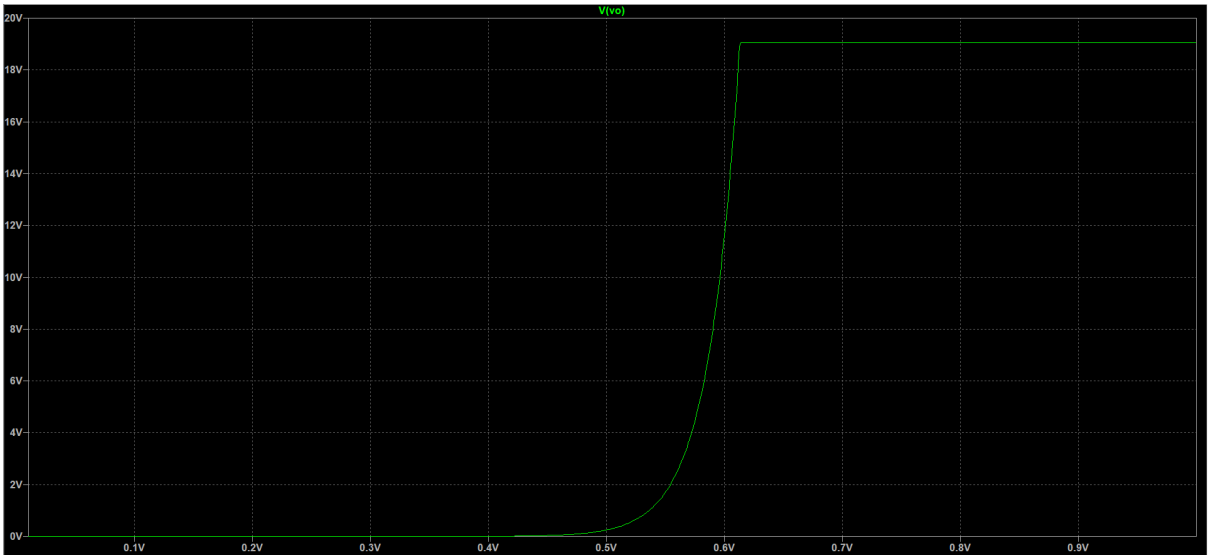


Logarithmic amplifier:

Circuit:



Vo as a function of Vi:



ln(Vo) as a function of Vi: