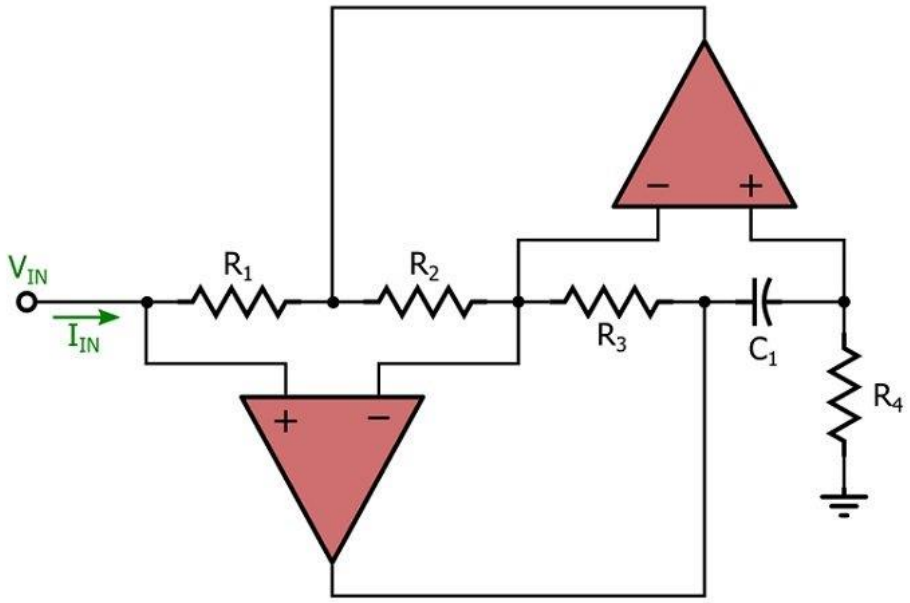
Subject:1



Find the input impedance function mathematically. Confirm and compare the amplitude and phase functions you find with simulation.

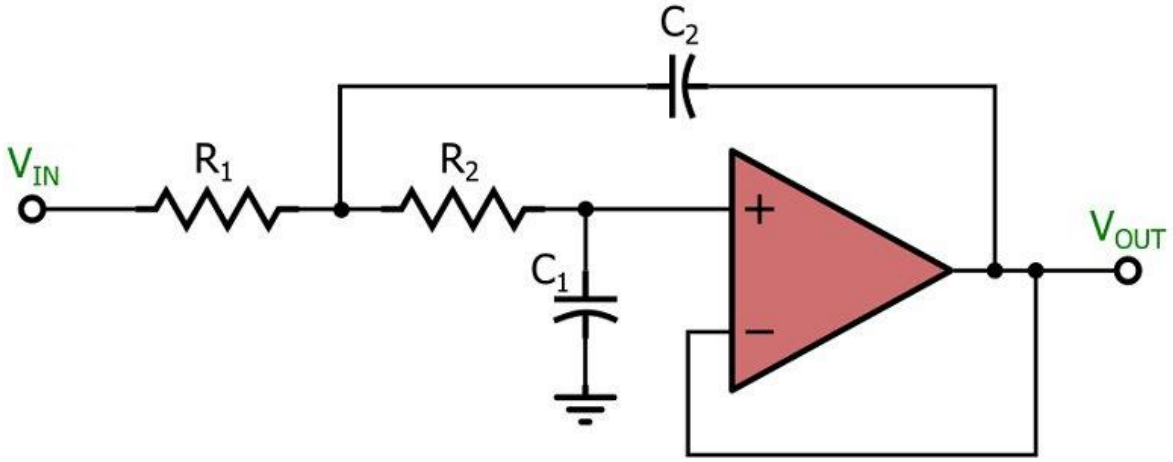
When the i(t) sign is applied to the input of the circuit, v(t)=? . Show that they are compatible by comparing the mathematical analysis and simulation results.

Explain what this circuit can be used for.

By replacing the circuit with the equivalent circuit, obtain the input impedance function of the equivalent circuit by simulation and compare it with the simulation of the input impedance function of the above circuit.

Note: Plot both the input and output magnitudes for all time domain simulation and mathematical analysis.

Subject:2



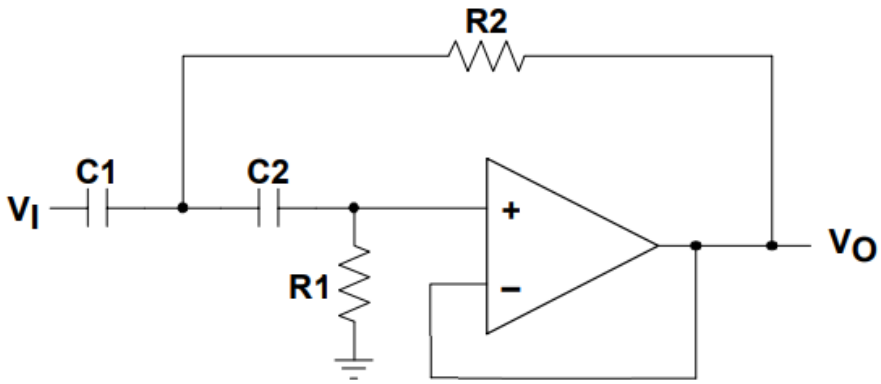
Find the voltage transfer function of the circuit mathematically. Confirm and compare the amplitude and phase functions you find with simulation.

When v(t) is applied to the input of the circuit, vout(t)=? Show that they are compatible by comparing the mathematical analysis and simulation results.

Explain what this circuit can be used for.

Note: Plot both the input and output magnitudes for all time domain simulation and mathematical analysis.

Subject:3



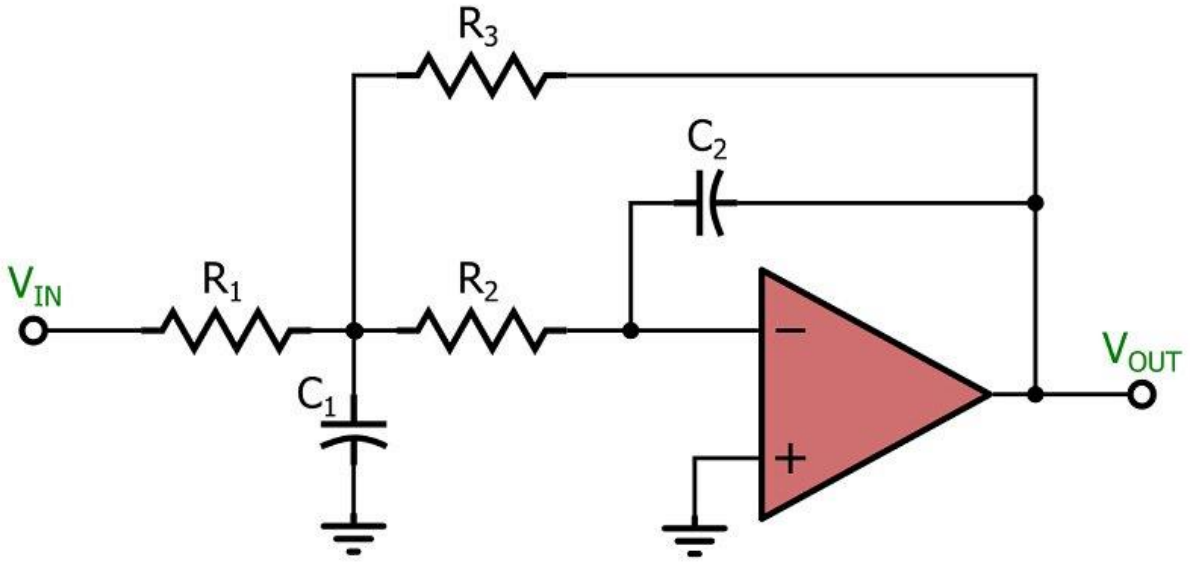
Find the voltage transfer function of the circuit mathematically. Confirm and compare the amplitude and phase functions you find with simulation.

When v(t) is applied to the input of the circuit, vout(t)=? Show that they are compatible by comparing the mathematical analysis and simulation results.

Explain what this circuit can be used for.

Note: Plot both the input and output magnitudes for all time domain simulation and mathematical analysis.

Subject:4



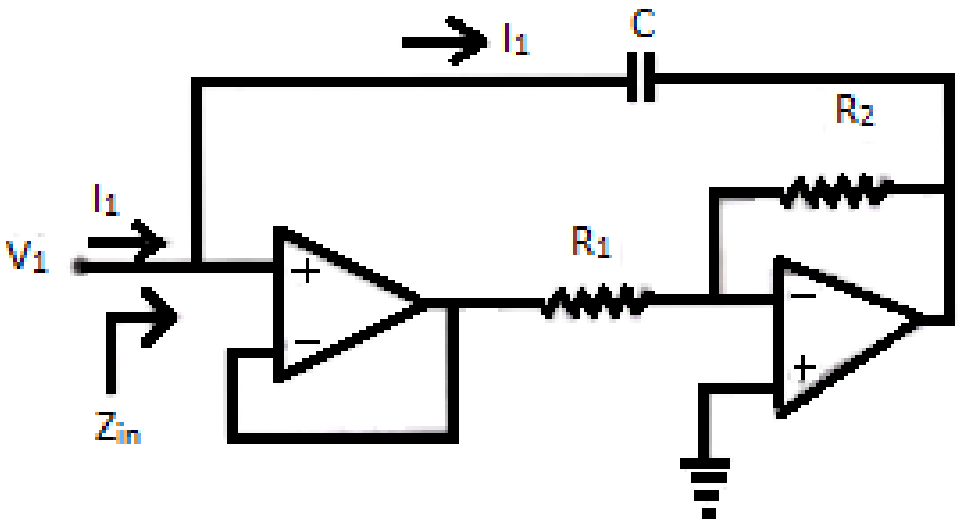
Find the voltage transfer function of the circuit mathematically. Confirm and compare the amplitude and phase functions you find with simulation.

When v(t) is applied to the input of the circuit, vout(t)=? Show that they are compatible by comparing the mathematical analysis and simulation results.

Explain what this circuit can be used for.

Note: Plot both the input and output magnitudes for all time domain simulation and mathematical analysis.

Subject:5



Find the input impedance function mathematically. Confirm and compare the amplitude and phase functions you find with simulation.

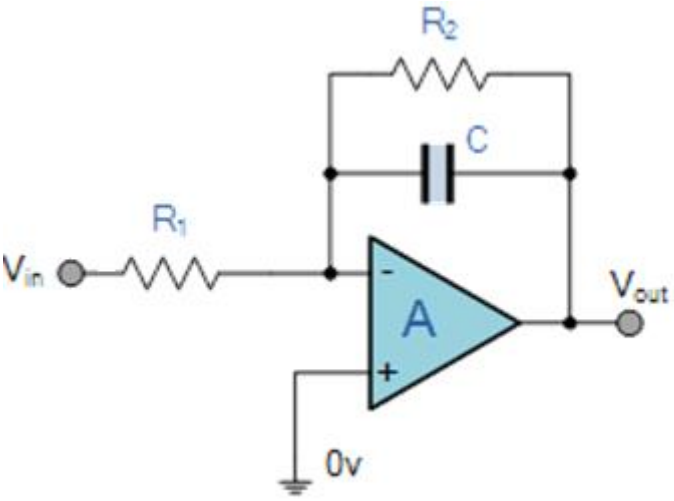
When the i(t) sign is applied to the input of the circuit, v(t)=? . Show that they are compatible by comparing the mathematical analysis and simulation results.

Explain what this circuit can be used for.

By replacing the circuit with the equivalent circuit, obtain the input impedance function of the equivalent circuit by simulation and compare it with the simulation of the input impedance function of the above circuit.

Note: Plot both the input and output magnitudes for all time domain simulation and mathematical analysis.

Subject:6



Find the voltage transfer function of the circuit mathematically. Confirm and compare the amplitude and phase functions you find with simulation.

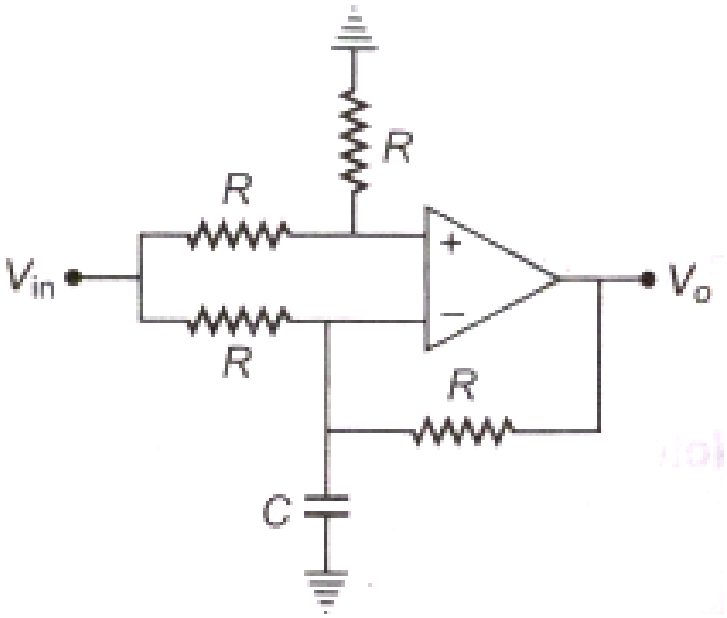
When v(t) is applied to the input of the circuit, vout(t)=? Show that they are compatible by comparing the mathematical analysis and simulation results.

Observe the output in simulation by applying a square wave with a frequency of 1 kHz with 10mV amplitude to the input of the circuit.

Explain what this circuit can be used for.

Note: Plot both the input and output magnitudes for all time domain simulation and mathematical analysis.

Subject:7



Find the voltage transfer function of the circuit mathematically. Confirm and compare the amplitude and phase functions you find with simulation.

When v(t) is applied to the input of the circuit, vout(t)=? Show that they are compatible by comparing the mathematical analysis and simulation results.

Observe the output in simulation by applying a 10mV amplitude 1 kHz frequency triangle wave to the input of the circuit.

Explain what this circuit can be used for.

Note: Plot both the input and output magnitudes for all time domain simulation and mathematical analysis.

TEAM	SUBJECT	PARAMETERS
1	1	R1= R2=R3=R4=1kohm C1=1nF i(t)=0.001cos(2*pi*1000*t)
2	2	R1=R2=1kohm C1=C2=5nF v(t)=1cos(2*pi*10000*t), v(t)=1cos(2*pi*40000*t)
3	3	R1=R2=1kohm C1=C2=5nF v(t)=1cos(2*pi*10000*t), v(t)=1cos(2*pi*40000*t)
4	4	R1=R2=R3=1kohm, C1=C2=5nF v(t)=1cos(2*pi*10000*t), v(t)=1cos(2*pi*40000*t)
5	5	R1 =1kohm R2 =1kohm C1=500nF
6	6	R1=R2=10kohm C=16nF
7	7	R1=R2=R3=R4=5 kohm C=16 nF
8	1	R1= R2=R3=R4=1kohm C1=3nF i(t)=0.001cos(2*pi*1000*t)
9	2	R1=R2=1kohm C1=C2=7nF v(t)=1cos(2*pi*10000*t), v(t)=1cos(2*pi*30000*t)
10	3	R1=R2=1kohm C1=C2=7nF v(t)=1cos(2*pi*10000*t), v(t)=1cos(2*pi*30000*t)
11	4	R1=R2=R3=1kohm C1=C2=7nF v(t)=1cos(2*pi*10000*t), v(t)=1cos(2*pi*30000*t)
12	5	R1 =1kohm R2 =1kohm C1=1uF
13	6	R1=R2=10kohm C=32nF
14	7	R1=R2=R3=R4=5 kohm C=22nF
15	1	R1= R2=R3=R4=1kohm C1=5nF i(t)=0.001cos(2*pi*1000*t)
16	2	R1=R2=1kohm C1=C2=10nF v(t)=1cos(2*pi*10000*t), v(t)=1cos(2*pi*20000*t)
17	3	R1=R2=1kohm C1=C2=10nF v(t)=1cos(2*pi*10000*t), v(t)=1cos(2*pi*20000*t)
18	4	R1=R2=R3=1kohm C1=C2=10nF v(t)=1cos(2*pi*10000*t), v(t)=1cos(2*pi*20000*t)

19	5	R1 =1kohm R2 =1kohm C1=2uF
20	6	R1=R2=10kohm C=52 nF
21	7	R1=R2=R3=R4=5 kohm C=32nF
22	1	R1= R2=R3=R4=1kohm C1=7nF i(t)=0.001cos(2*pi*1000*t)
23	2	R1=R2=2kohm C1=C2=5nF v(t)=1cos(2*pi*10000*t), v(t)=1cos(2*pi*20000*t)
24	3	R1=R2=2kohm C1=C2=5nF v(t)=1cos(2*pi*10000*t), v(t)=1cos(2*pi*20000*t)
25	4	R1=R2=R3=1kohm C1=C2=12 nF v(t)=1cos(2*pi*10000*t), v(t)=1cos(2*pi*20000*t)
26	5	R1 =1kohm R2 =2kohm C1=500nF
27	6	R1=R2=10kohm C=100nF
28	7	R1=R2=R3=R4=7kohm C=16 nF
29	1	R1= R2=R3=R4=1kohm C1=10nF i(t)=0.001cos(2*pi*1000*t)
30	2	R1=R2=2kohm C1=C2=7nF v(t)=1cos(2*pi*7000*t), v(t)=1cos(2*pi*15000*t)
31	3	R1=R2= 2kohm C1=C2=7nF v(t)=1cos(2*pi*7000*t), v(t)=1cos(2*pi*15000*t)
32	4	R1=R2=R3=2kohm C1=C2=5nF v(t)=1cos(2*pi*7000*t), v(t)=1cos(2*pi*20000*t)
33	5	R1 =1kohm R2 =2kohm C1=1uF
34	6	R1=R2=20 kohm C=16nF
35	7	R1=R2=R3=R4= 7kohm C=22nF