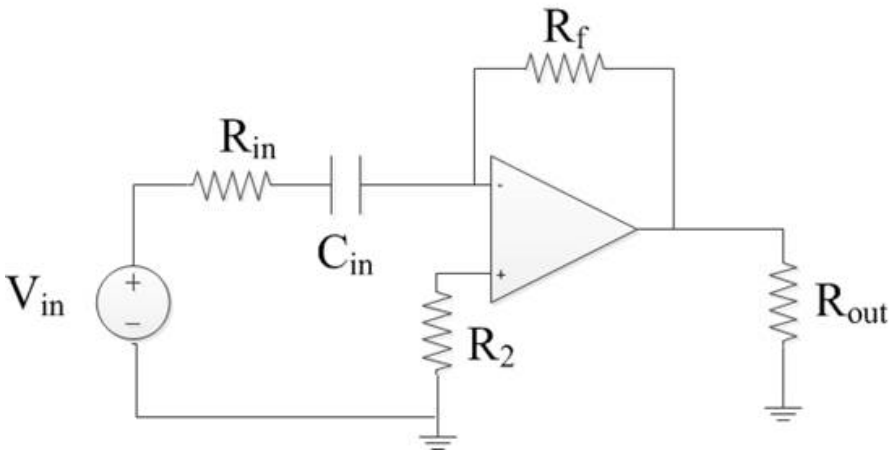
Started on	Wednesday, 26 April 2017, 5:25 PM
State	Finished
Completed on	Wednesday, 26 April 2017, 6:30 PM
Time taken	1 hour 4 mins
Overdue	4 mins 9 secs
Grade	**100.00** out of 100.00

Question 1

Correct

Mark 100.00 out of 100.00



Quiz 10c

Given: R_{in} = 10 kΩ (kilo Ohm) C_{in} = 0.05 μF (micro F) R_f = 10 kΩ (kilo Ohm)

R_2 = 10 Ω (Ohm) R_{out} = 1 kΩ (kilo Ohm)

V_{in} = 20 cos(ωt) Volts

You can assume the opamp is ideal and has power input rails at +20V and -20V.

In your answers below, report the magnitude as positive and the angle between $-180 \le \theta \le 0°$.

a) Calculate the phasor voltage across resistor R_{out} when the input voltage frequency ω = zero rad/sec.

V_{Rout} (ω = 0) = 0 ✓

at angle -90 ✓ ° (Degrees) Volts

b) Calculate the phasor voltage across resistor R_{out} when the input voltage frequency ω = 50 rad/sec.

V_{Rout} (ω = 50) = .5 ✓

at angle -91.43 ✓ ° (Degrees) Volts

c) Calculate the phasor voltage across resistor R_{out} when the input voltage frequency ω = 1,000 rad/sec.

V_{Rout} (ω = 1,000) = 8.9 ✓

at angle -116 ✓ ° (Degrees) Volts

d) Calculate the phasor voltage across resistor R_{out} when the input voltage frequency ω = 5,000 rad/sec.

V_{Rout} (ω = 5,000) = 18.6 ✓

at angle -158.2 ✓ ° (Degrees) Volts

Numeric Answer

a) V_{Rout} (w = 0) = 0 at angle -90° V

b) V_{Rout} (w = 50) = 0.4998 at angle -91.43° V

c) V_{Rout} (w = 1,000) = 8.9443 at angle -116.57° V

d) V_{Rout} (w = 5,000) = 18.5695 at angle -158.20° V

Correct

Marks for this submission: 100.00/100.00.