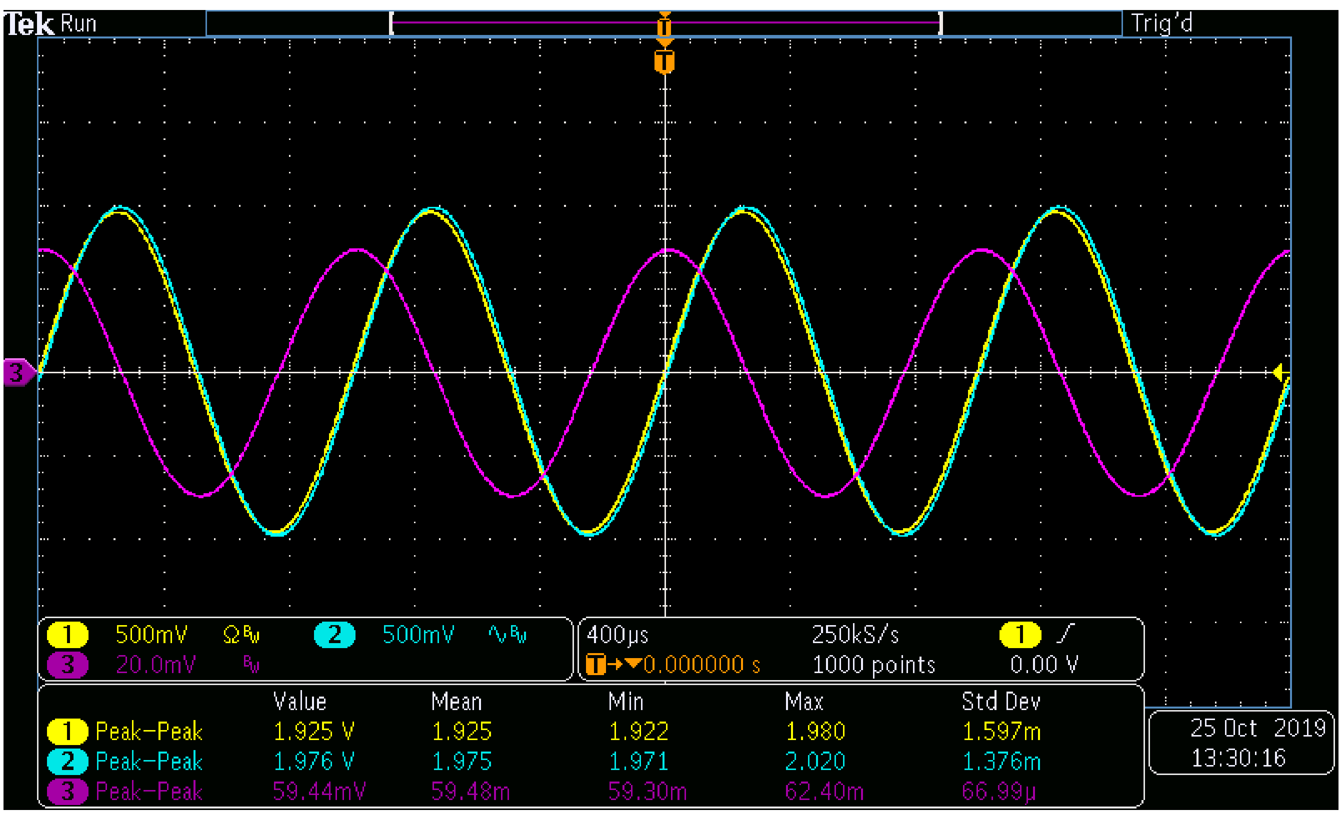
Nominal	Actual
0.1 mF	0.09442 mF
10 mH	9.387 mH
1 kΩ	0.98230 kΩ
50 Ω	51.375 Ω

Simulator results (src 1 & 2)

E_1	1.1188 V_{rm}
E_2	1.0546 V_{pk}
V_R	1.1170 V_p



Data Tables

Source One Only

|Vpp|

	Theory	Experimental	% Deviation
E_1	2	1.925 Vpp	3.75
E_2	0.06301	~~1.975 Vpp~~ 0.05946 Vpp	5.63
V_R	2.0683	1.975 Vpp	4.51

Table 10.1

Source Two Only

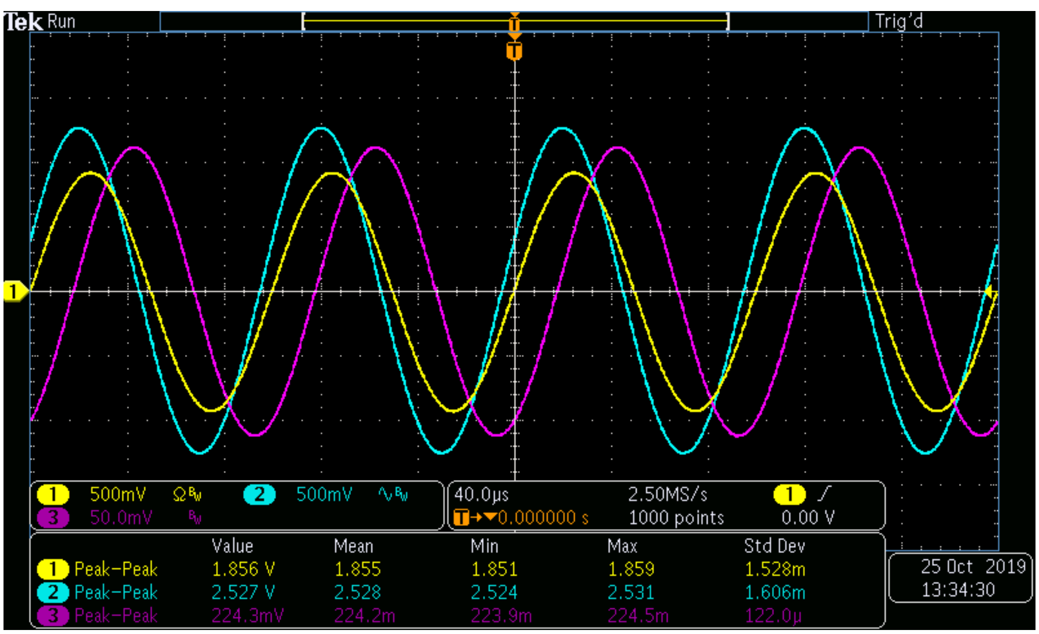
	Theory	Experimental	% Deviation
E_1	0.1736	0.2243 Vpp	29.24
E_2	2	1.856 Vpp	7.20
V_R	2.693	2.526 Vpp	6.19

Table 10.2

Sources One and Two

	Theory	Experimental	% Deviation
E_1	2	1.898 Vpp	5.10
E_2	2	2.000 Vpp	0
V_R	2.3805	1.945 Vpp	18.29

Table 10.3



Questions

1. Why must the sources be replaced with a 50 Ω resistor instead of being shorted?

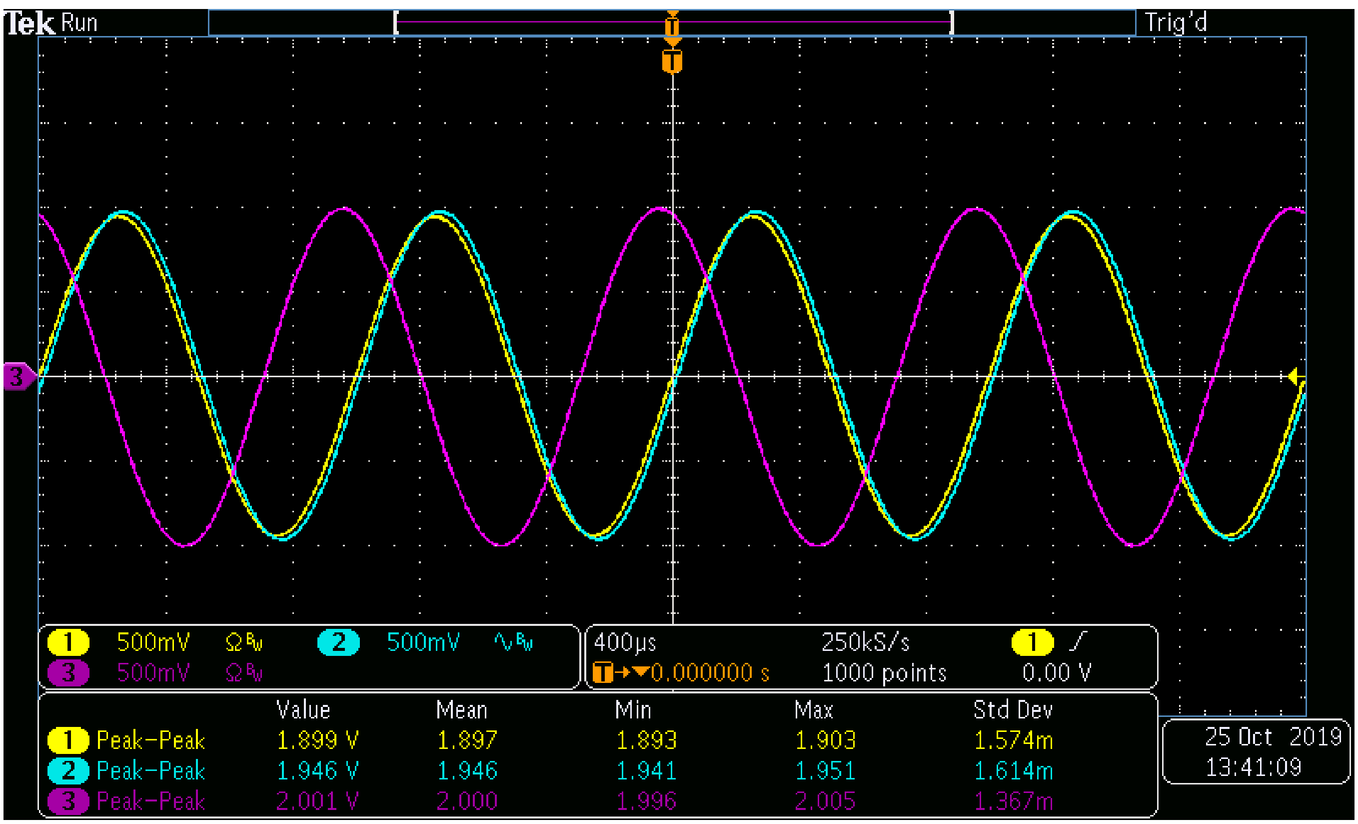
The loading impedance of the AC source is 50Ω, thus for accurate superposition calculations.

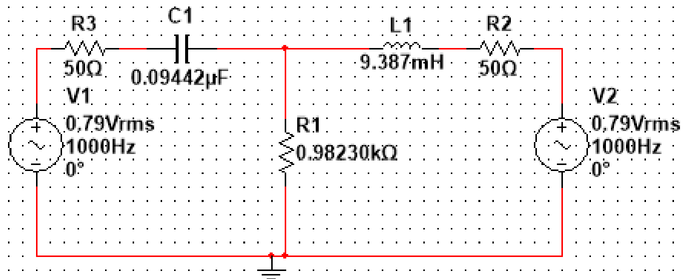
2. Do the expected maxima and minima from step 6 match what is measured in step 7?

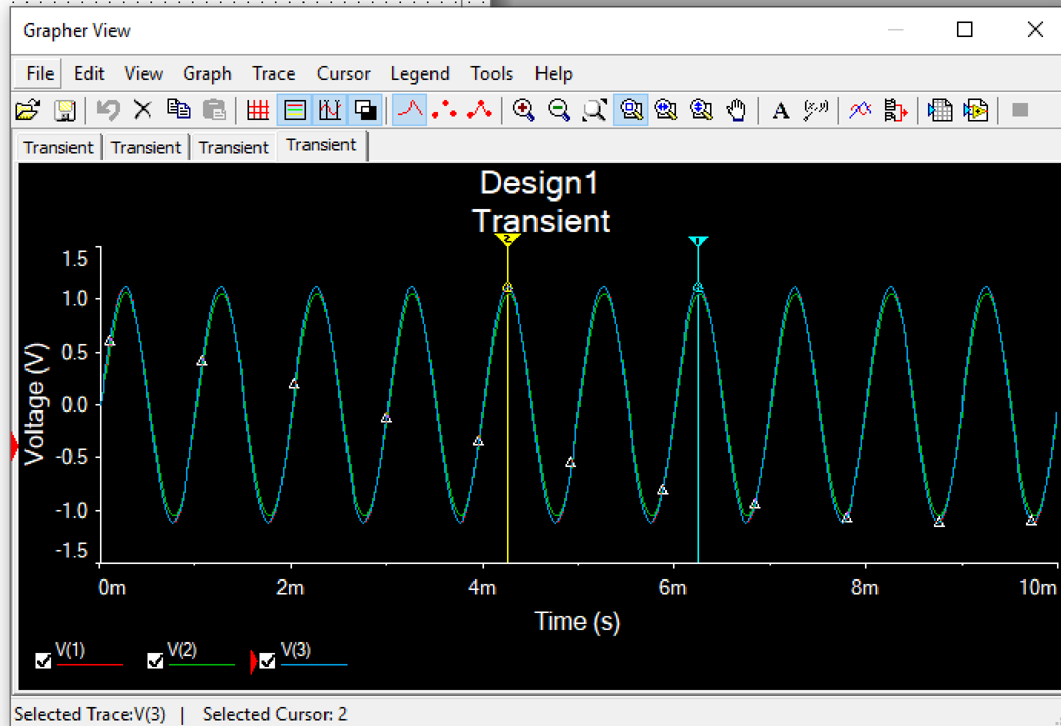
Yes

3. Does one source tend to dominate the 1 kΩ resistor voltage or do both sources contribute in nearly equal amounts? Will this always be the case?

There is a slight domination due to the differing capacitor and inductor impedances. If the sources were out of phase, then a clear domination will occur depending on the phase angle amount.







Cursor

	V(1)	V(2)	V(3)
x1	6.2471m	6.2471m	6.2471m
y1	1.1188	1.0546	1.1170
x2	4.2471m	4.2471m	4.2471m
y2	1.1188	1.0546	1.1170
dx	-2.0000m	-2.0000m	-2.0000m
dy	-2.2204e-016	-8.8818e-016	-2.2204e-016
dy/dx	1.1102e-013	4.4409e-013	1.1102e-013
1/dx	-500.0000	-500.0000	-500.0000