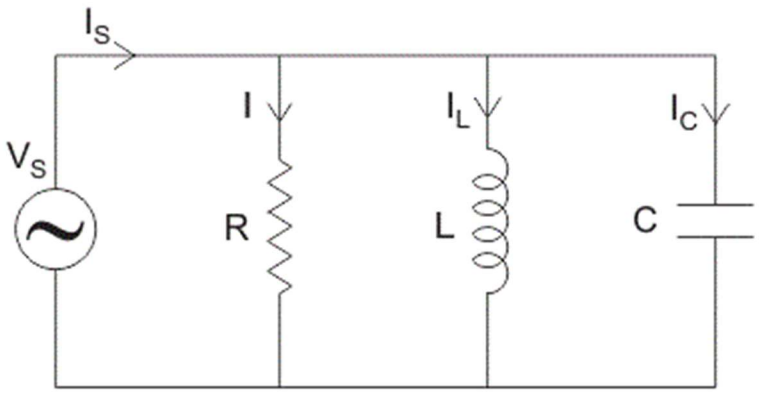
32. A 4.7 kΩ resistor has a conductance of:
a. 213 mS
b. 213 µS
c. 4.7 S
d. 4.7 mS

33. At 62 kHz, a 527 nF capacitor has a susceptance of:
a. 4.87 mS
b. 4.87 S
c. 205 S
d. 205 mS

34. At 261 Hz, a 682 mH inductor has a susceptance of:
a. 1.12 kS
b. 1.12 S
c. 894 µS
d. 894 mS

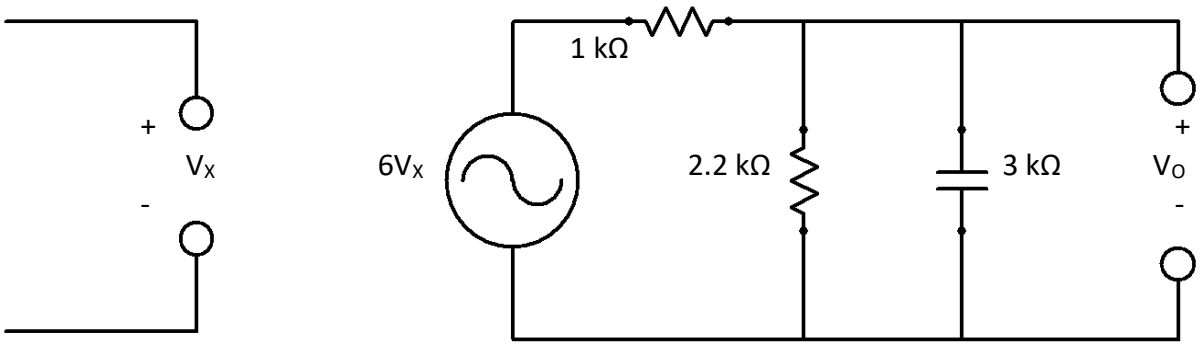
35. If $Z_L = (503 + 223j)\ \Omega$, $Y_L =$
a. (223 + 503j) S
b. (2 + 4.5j) S
c. (2 - 4.5j) S
d. 550 S



f = 388 kHz
L = 319 µH
C = 405 pF
R = 592 Ω

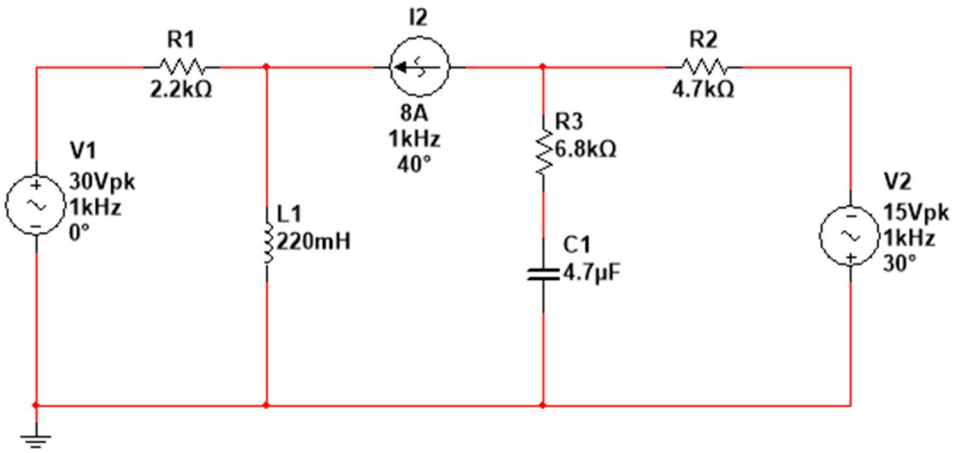
36. Total admittance seen by the source is:

37. If $I_S = (1.2 \angle 70°)$ A, I_L =



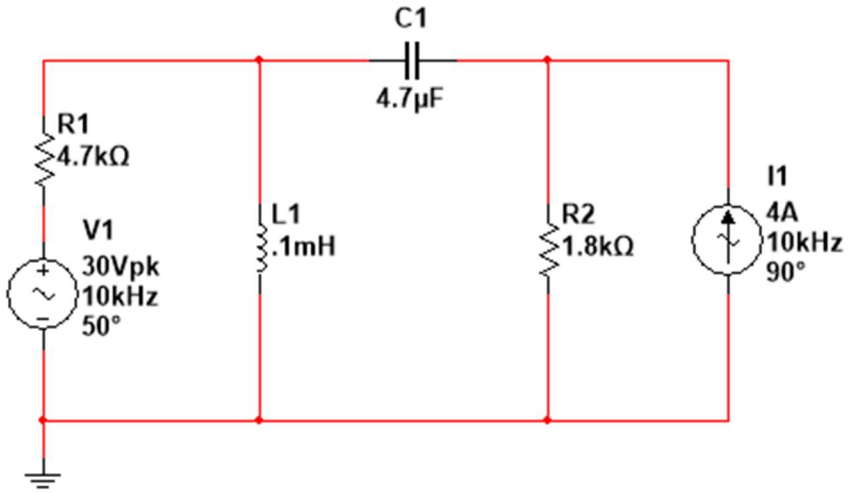
38. If $V_X = (8 \angle\ 10°)$ V, what is V_O?

39. Draw the Thevenin equivalent circuit external to V_O, assuming $V_X = (8 \angle\ 10°)$ V.



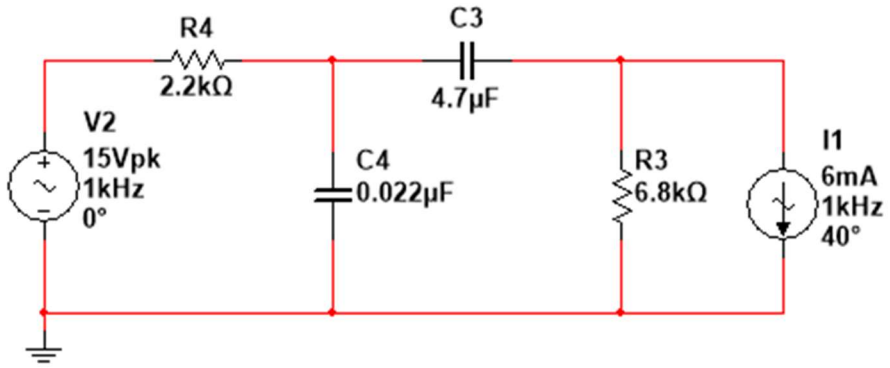
40. Using **mesh analysis**, find the 3 loop currents for the circuit above.

41. How much power is dissipated by the 3 resistors?



42. Using **nodal analysis**, find the voltage at all nodes in the circuit above.

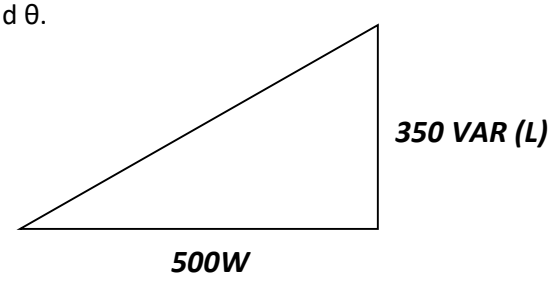
43. What is the current through the capacitor C_1?



44. Using **superposition**, find the voltage across R_3.

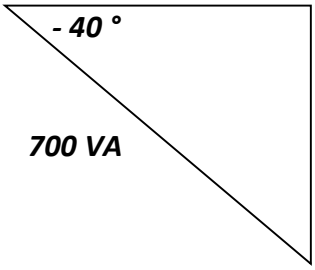
45. How much power is supplied by the source I_1?

46. For the power triangle to the right, find S and θ.

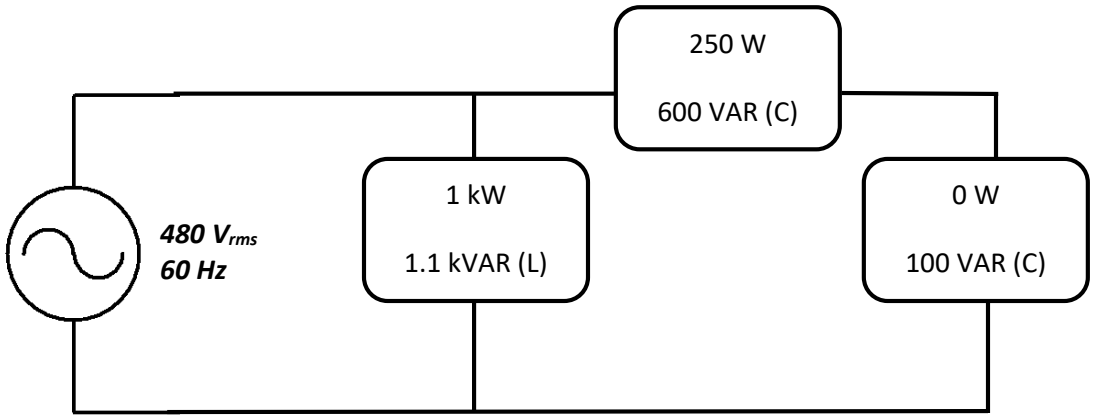


47. For the power triangle above, if the source voltage is (120 ∠ 0°) V_{rms}, what is the source current?

48. For the power triangle to the right, find P and Q.



49. If the source voltage is 240 V_{rms} and the frequency is 50 Hz, what value of inductor would be needed to achieve unity power factor in the system above?



50. Draw a fully-labeled power triangle for the system above (P, Q, S, θ)

51. For the 1 kW load, determine what component(s) comprise it.

52. What component (type and value) would be needed to correct the system power factor?