Questions:

Circuit Analysis: Phasor Math

What is admittance?

How do bridge circuits behave with complex impedances?

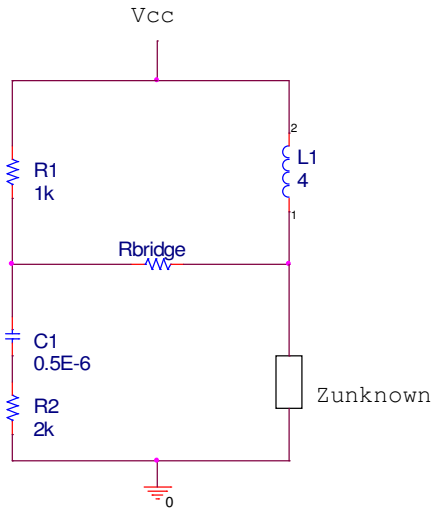
How does the total impedance of a series RLC circuit behave with frequency?

How does the total impedance of a parallel RLC circuit behave with frequency?

Complex Power

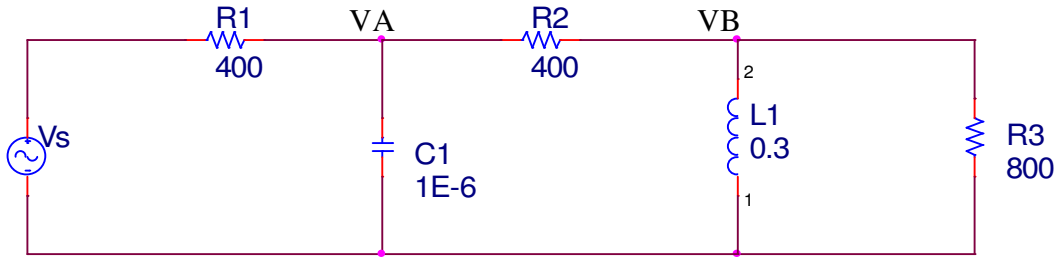
a. What is instantaneous power?
b. What is real power?
c. What is reactive power?
d. What is total power?
e. What is rms voltage? rms current?
f. How do we determine total power produced by a source?
g. What is the power factor?
h. What does it mean if the power factor is 'leading'? 'lagging'?

1) Bridge circuits



a) What value of Zunknown balances the bridge (no current through R3) when ω=1000 rad/s?

2) Phasor KCL/KVL



The source in the above circuit is 20cos(2000t)

a. Determine the voltage across the capacitor using node analysis. TEAM ASSIGNMENT

b. Determine the voltage across the capacitor using mesh analysis.