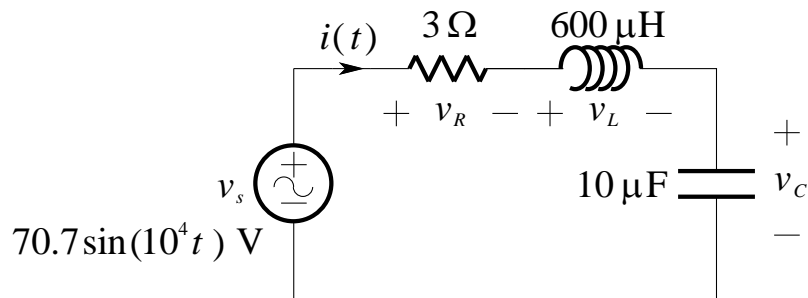


Sinusoidal Steady-State Analysis

1.

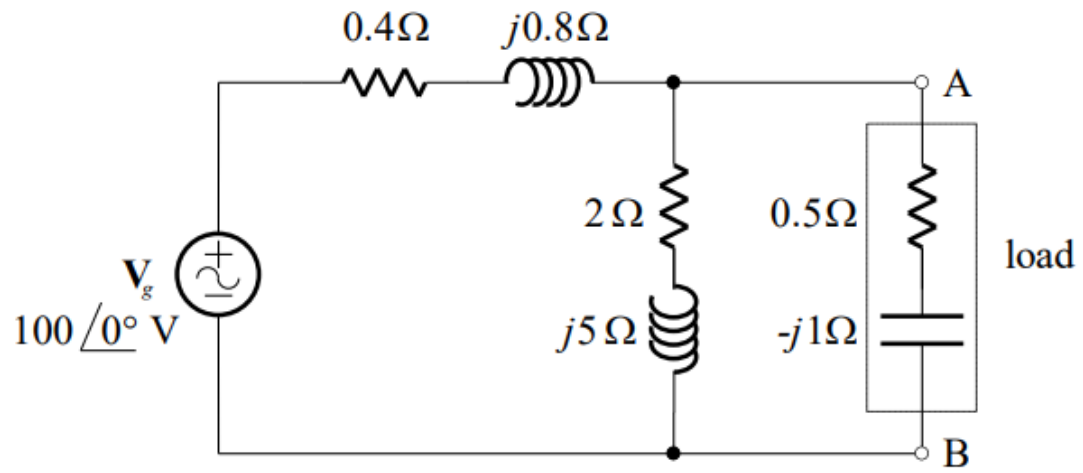
Consider the circuit shown below:



Find:

- The total impedance \mathbf{Z}_T .
- The expression for $i(t)$, as a cosine function.
- The expressions for $v_R(t)$, $v_L(t)$ and $v_C(t)$ as cosine functions.
- If the frequency of the voltage source is doubled, describe the effect on the total impedance magnitude, peak value of current, and phase angle between the current and voltage.

2.



Calculate the current and voltage across the load?