**Q!-**

Calculate the average power $4 \angle 0° \text{V}$ absorbed by each of the five elements in the circuit. (Manually + SPICE)



In the circuit: $8\Omega$ resistor, $j4\Omega$ inductor, $-j2\Omega$ capacitor, current source $4\angle 0°$, voltage source $20\angle 90° \text{V}$.

**Q!-**



Source: $120 \angle 60° \text{V}$, $8\Omega$, $j60\Omega$, $9\Omega$, $-j30\Omega$, $R_L$.
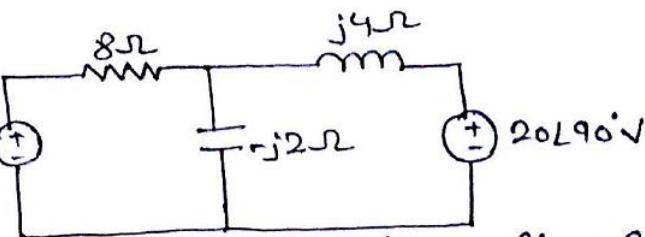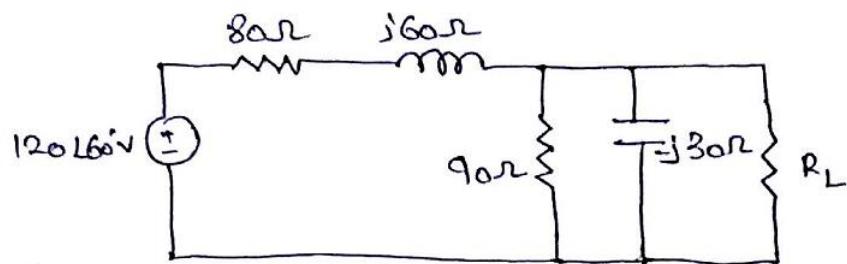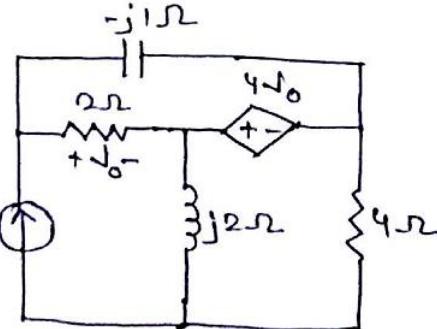
Calculate '$R_L$' and the maximum power absorbed by it, when resistor '$R_L$' is adjusted until it absorbs the maximum average power. (LTSPICE).

**Q!-** Compute the average power absorbed by the $2\Omega$ & $4\Omega$ resistor in the circuit. (manually)

Plot the average powers in LTSPICE -

a) For $2\Omega$ & $4\Omega$

b) Sweep the values of resistors from $1$ to $10\Omega$.



Circuit elements: $-j1\Omega$, $2\Omega$, $4 v_0$, $4\angle 60° \text{A}$, $j2\Omega$, $4\Omega$.

**Q!-** Find the complex power absorbed in each of the elements. Plot the complex powers in LTSPICE.



Circuit elements: $-j20$, $j10$, $4\angle 0° \text{V}$, $20\Omega$, $50\angle 90° \text{V}$.