AC power 006

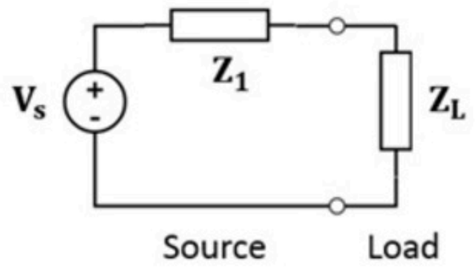
No more attempts left.

For the system below, the source is represented in phasor-notation as:

$$\mathbf{Z_1} = A_1 + jB_1 \qquad \mathbf{V_S} = A_2 \cdot e^{jB_2}$$

(a) Find the load impedance $\mathbf{Z_L} = A_3 + jB_3$ that results in the maximum power being received by this load.

(b) Find the maximum average power P received by the load.



Given Variables:
A1 : 5 ohm
B1 : 4 ohm
A2 : 2 V
B2 : 75 degrees

Calculate the following:

A3 (ohm) :

5 ✓

B3 (ohm) :

-4 ✓

P (W) :

0.1 ✓

Hint: Keep your calculations algebraic as long as you can.