Special Problem 5.2-1

A **matching network** has been constructed to match a **complex** load to a transmission line with characteristic impedance $Z_0 = 50\ \Omega$.

Note that this matching network is **not** specifically one of the standard designs that we studied.

Determine the **complex admittance** Y_L of the **load** (you can alternatively express the load in terms of its impedance).

$$\longleftarrow \lambda/4 \longrightarrow$$

$$Z_0 = 50\Omega \qquad Z_{in} = 50\Omega \qquad Z_1 = 100\Omega \qquad Y_L$$

short circuit stub with
$Z_0 = 50\Omega$ and $\ell = \lambda/8$

50Ω

$\lambda/8$