Serie 6 on Chapter 3
Impedance Matching calculations by using the Impedance Smith chart and the Admittance Smith chart

At a frequency equal to 60 MHz, the internal impedance of the sinusoidal voltage source is equal to:

$Zs = (25 - 15\ j)$ Ohms

At a frequency equal to 60 MHz, the impedance of the load is equal to:

$Z_L = (100 - 25\ j)$ Ohms

These impedances are normalized to $R_0 = 50$ Ohms to use the Smith charts.

Question 1)

- By starting from the impedance of the load, explain graphically (by using the Smith Charts available on Moddle) why the first component of the impedance matching network has to be a parallel branch.

Question 2)

The number of components is equal to 2.

- Explain how **the low-pass impedance matching circuit** can be determined by using the Admittance Smith Chart and the Impedance Smith Chart.
- **Calculate the values of the passive components** of the impedance matching network by using the Admittance Smith Chart and the Impedance Smith Chart which are available on Moodle.

Question 3)

The number of components is equal to 2.

- Explain how **the high-pass impedance matching circuit** can be determined by using the Admittance Smith Chart and the Impedance Smith Chart.
- **Calculate the values of the passive components** of the impedance matching network by using the Admittance Smith Chart and the Impedance Smith Chart which are available on Moodle.