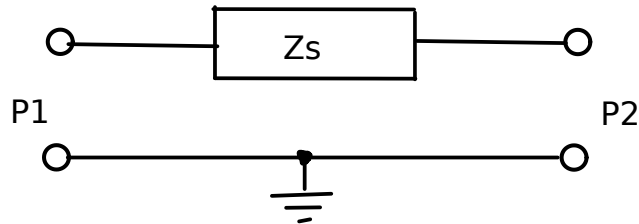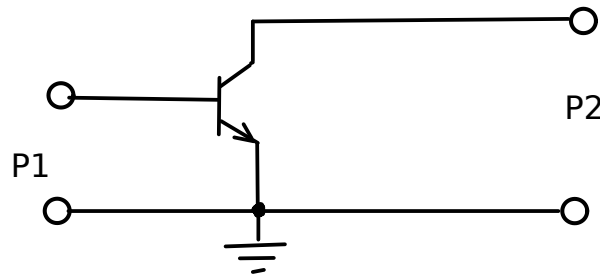Transmission Lines and Antennas, 2012-1
Exercises on port matrices

1. Compute the S-matrix of the following systems with reference impedance Zref:

a. Is this device: reciprocal? symmetric? lossless?

b. Use the small-signal model of the BJT with re and ro finite and neglecting any parasitic capacitances. Is this device reciprocal? passive?

2. Compute the S-matrix of the common-emitter amplifier below: