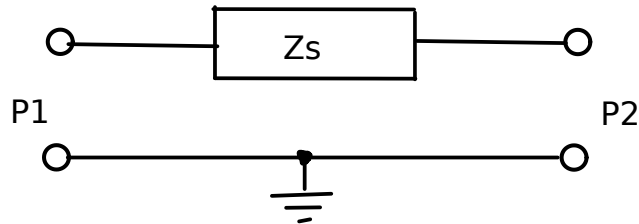


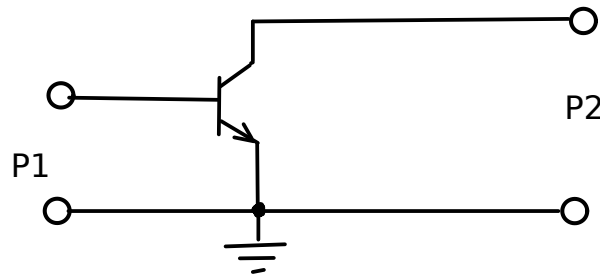
Transmission Lines and Antennas, 2012-3
Exercises on port matrices

1. Compute the S-matrix of the following systems with reference impedance Z_{ref} :

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



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



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

