1. Given the circuit below:
   a. Find the effective resistance (Thevenin resistance), seen by the capacitor terminals, \( R_{12} \).
   b. Determine the Thevenin voltage seen between node 1 and ground, \( V_{Th1,0} \).
   c. Determine the Thevenin voltage seen between node 2 and ground, \( V_{Th2,0} \).

2. Assume that \( \alpha = 0.99 \) in the circuit shown below:
   a. Calculate the voltage gain, \( A = \frac{v_{out}}{v_{in}} \).
   b. Calculate the input resistance seen between the input node and ground, \( R_{in} \).
   c. Calculate the output resistance seen between the output node and ground, \( R_{out} \).