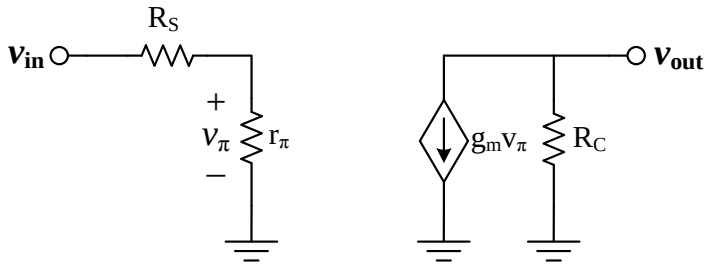
In the Name of Allah, the Most Beneficent, the Most Merciful.

Electronics 1, Assignment #1, Review of KVL, KCL and Thevenin and Norton equivalents.

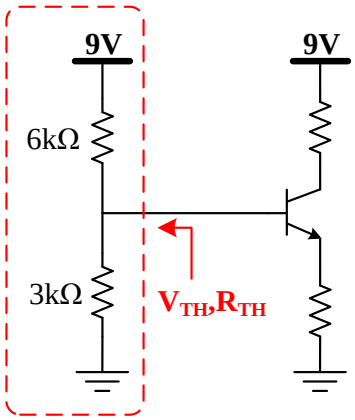
Due: Bahman, 26th

Shahrood University of Technology

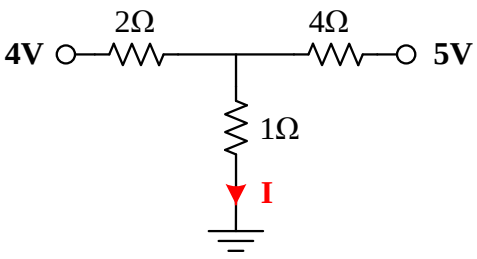
1. In the following circuit, determine V_{out} as a function of V_{in}, g_m, R_C, R_S, and r_π.

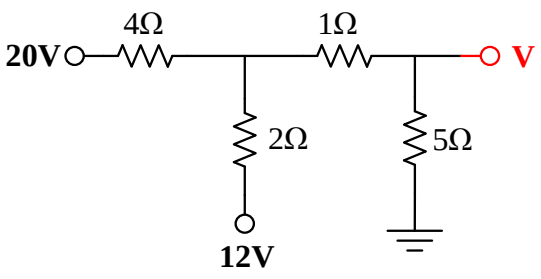


2. In the following circuit, draw the thevenin equivalent of the circuit which is placed inside the dashed rectangular. Calculate the thevenin voltage as well as its equivalent thevenin resistance.

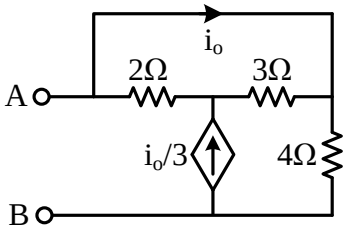


3. In the following circuits, determine V and I.

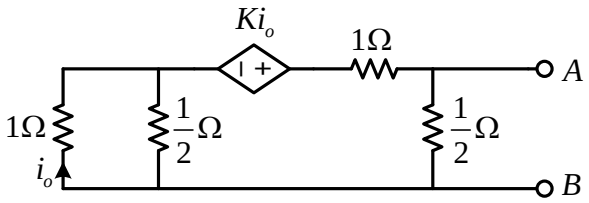




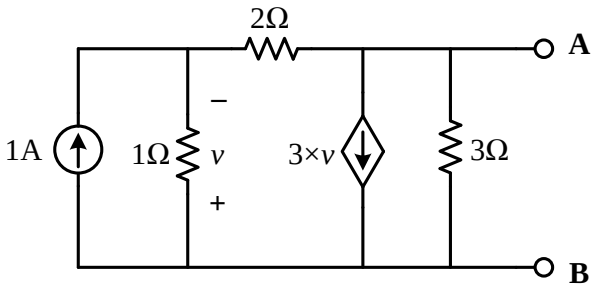
4. Calculate the equivalent resistance of the following circuit with respect to the terminals, A and B.



5. Specify *K* such that the equivalent resistance seen from the terminals, A and B, will be zero.



6. Calculate the equivalent thevenin circuit with respect to A and B for the circuit shown below.



Good luck – M.R. Ashraf.