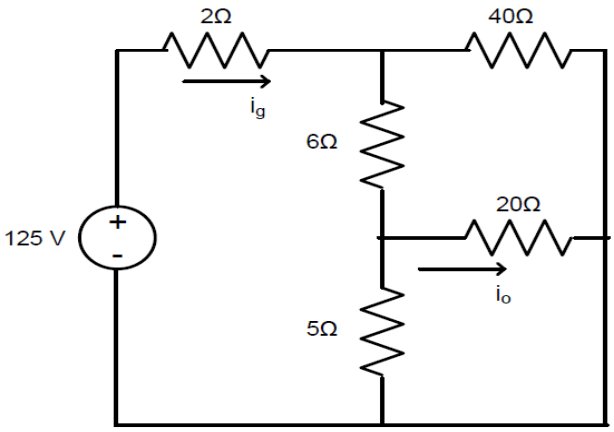
Sheet 1: Electric Circuits Revision

Problem 1:

Find i_o and i_g in the circuit shown?

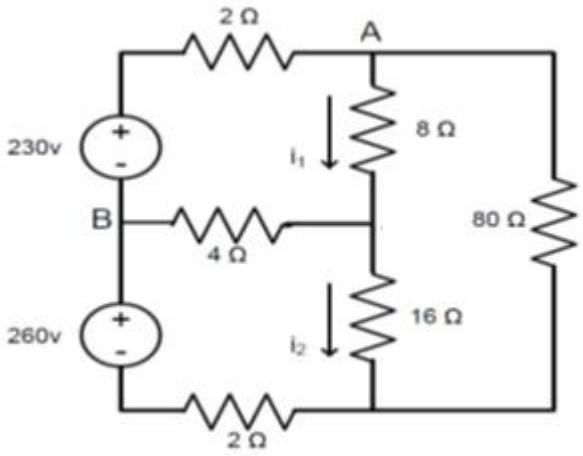
(Ans. i_o=2.5A, i_g=12.5A)



Problem 2:

Using KCL and KVL, find i_1, i_2, V_{AB}?

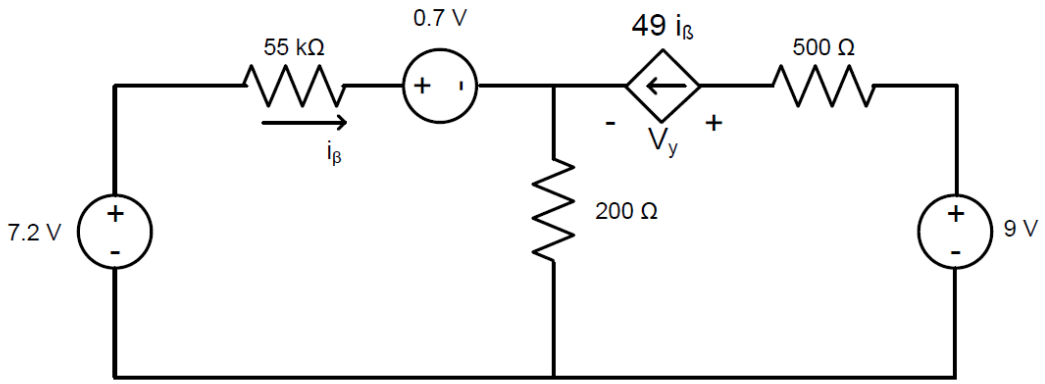
(Ans. i_1=20A, i_2=15A, V_{AB}=180V)



Problem 3:

Find the voltage V_y in the circuit shown?

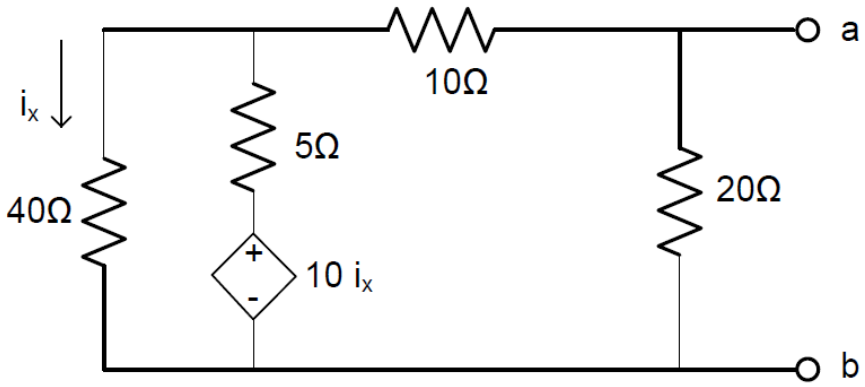
(Ans. V_Y=5.55V)



Problem 4:

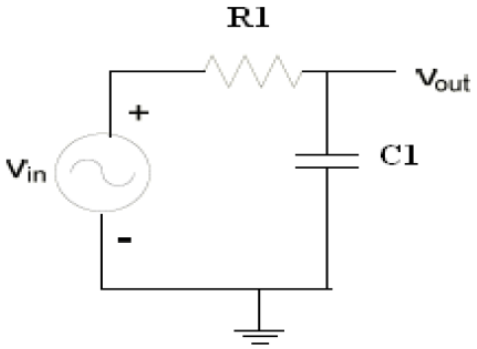
For the circuit shown, Find Thevenin Equivalent circuit for the ports a, b?

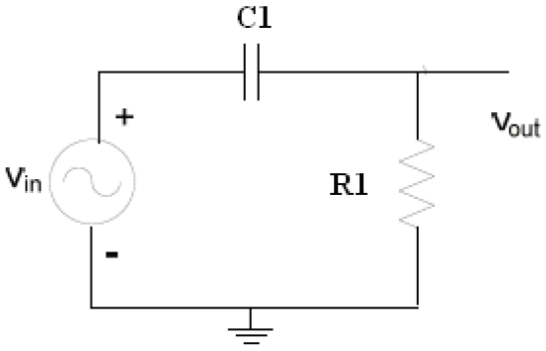
(Ans. R_{th}=8.8Ω, V_{th}=0V)

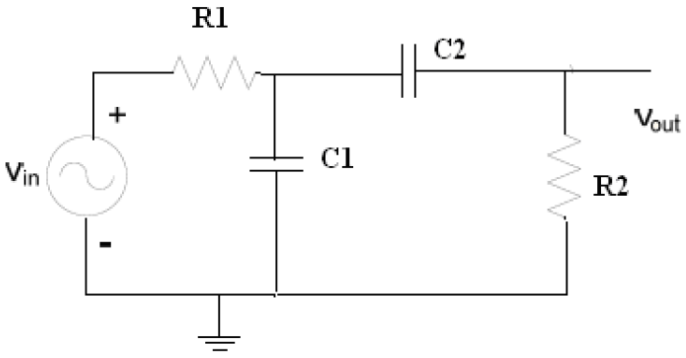


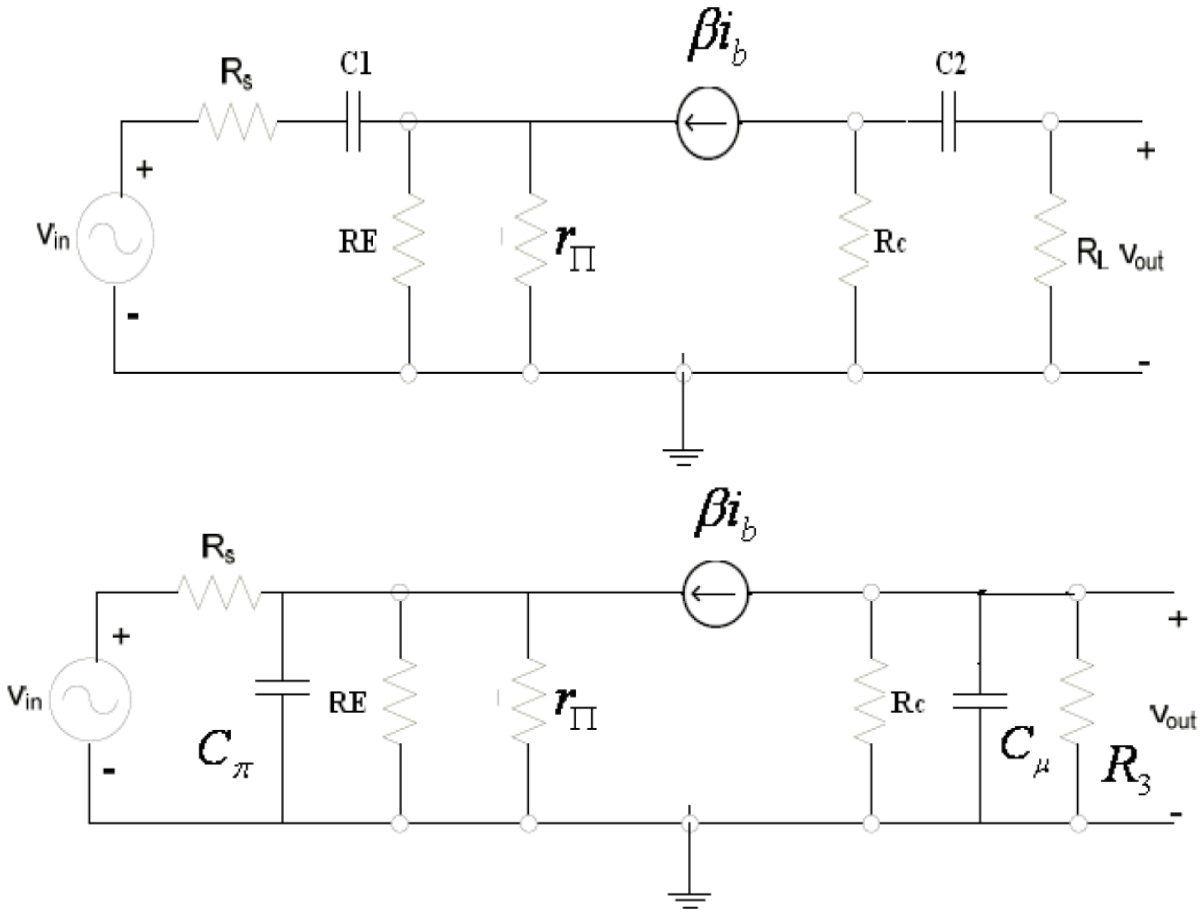
Problem 5:

Find the transfer function V_{out}/V_{in} for the circuits shown?








βi_b
Rs
C1
C2
+
Vin
-
RE
r_Π
Rc
RL
Vout
+
-
βi_b
Rs
+
Vin
-
RE
r_Π
Rc
C_π
C_μ
R_3
Vout
+
-