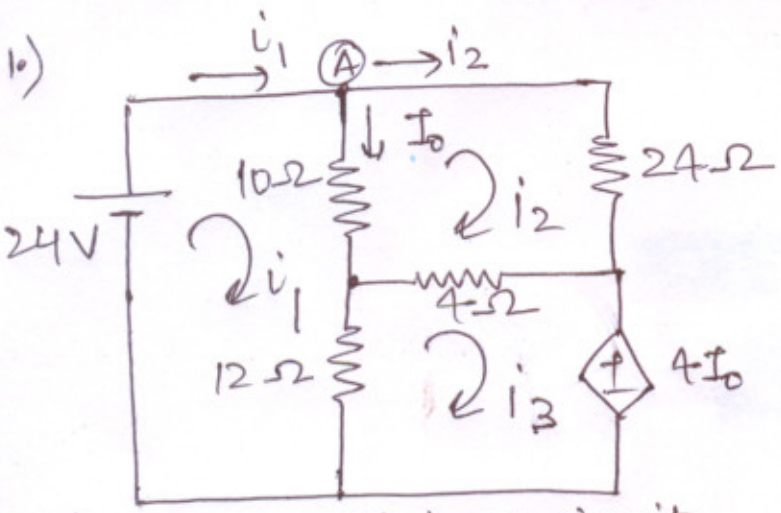
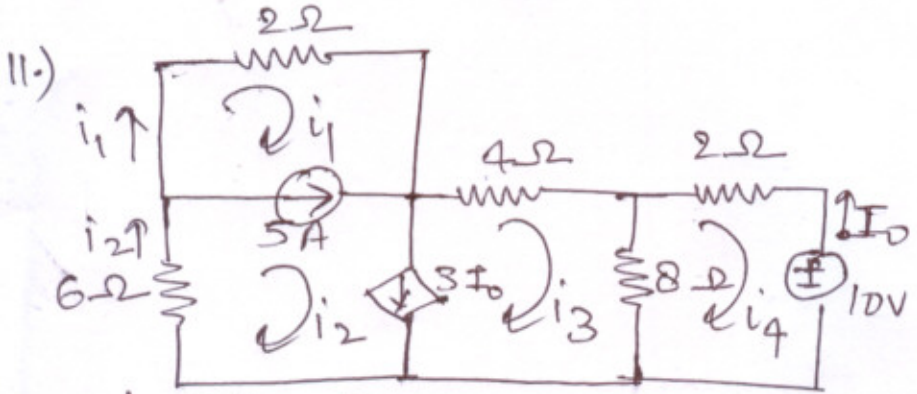
I.)



find current I_o in the circuit.

Ans: $I_o = 1.5A$

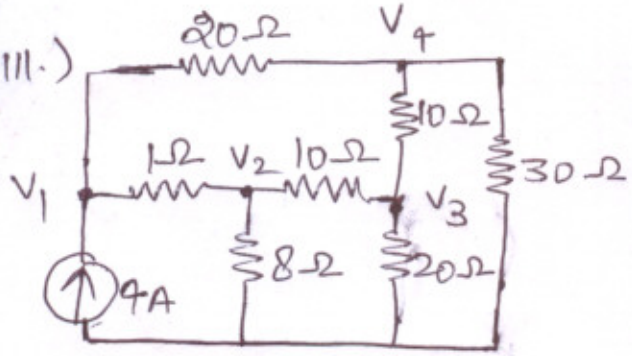
II.)



find i_4 & i_1.

Ans: $i_1 = -7.5A$; $i_4 = 2.143A$

III.)



$V_1 = 25.52V$

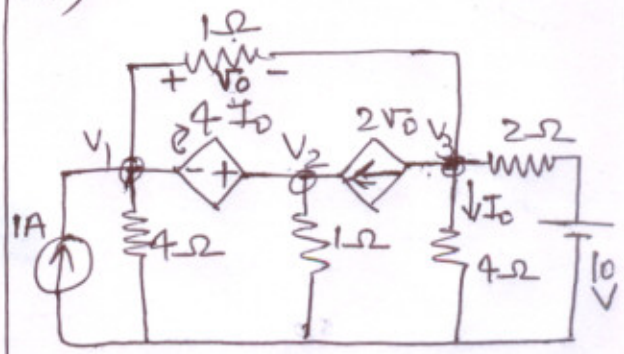
$V_2 = 22.05V$

$V_3 = 14.84V$

$V_4 = 15.055V$

Ans

IV.)

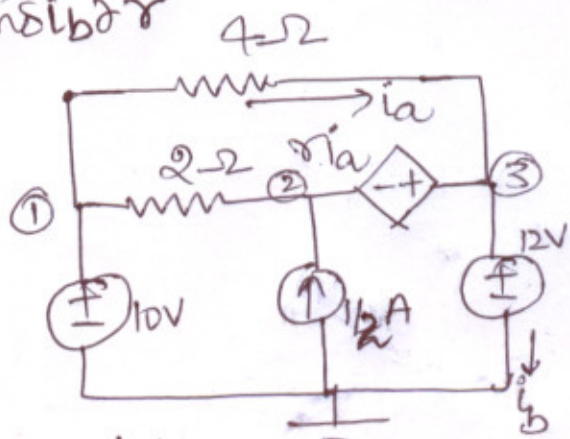


$V_1 = 4.97V$ $V_3 = -0.12V$

$V_2 = 4.85V$

V.) $V_1 = 10V$; $V_2 = 14V$; $V_3 = 12V$

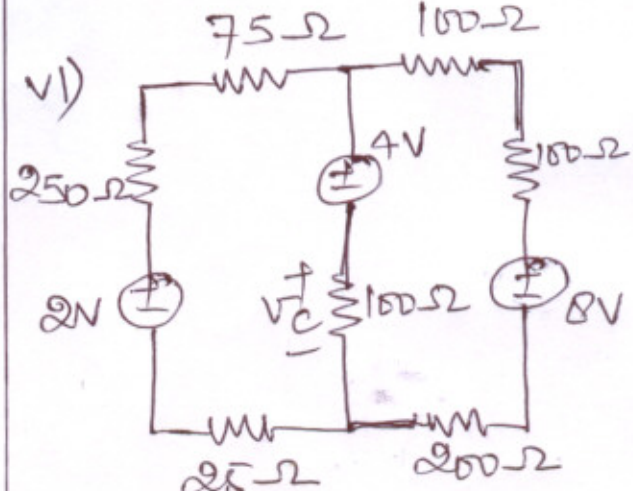
find i_b & r



Answer: $i_b = -2A$

$r = 4V/A$.

VI)



find i_a & i_b.