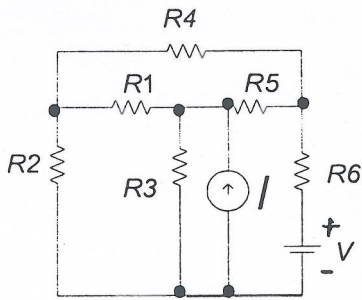


EE 101 Problems: Network Theorems

Prob.Th 3. For the circuit shown in figure below, use the superposition theorem to determine the current through R_2 when R_4 is open circuited. Given

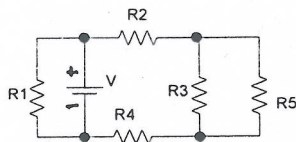
$R_1 = 60k, R_2 = 8k, R_3 = 40k, R_4 = 80k, R_5 = 50k, R_6 = 30k, I = 10mA, V = 20V.$



Marks: 2+2+1

Prob.Th 4. For the circuit shown determine Thevenin's equivalent circuit across R_5 . Given

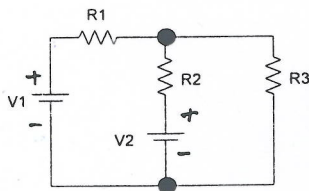
$R_2 = 120\Omega, R_3 = 230\Omega, R_4 = 590\Omega, R_5 = 330\Omega, V = 50Volt$



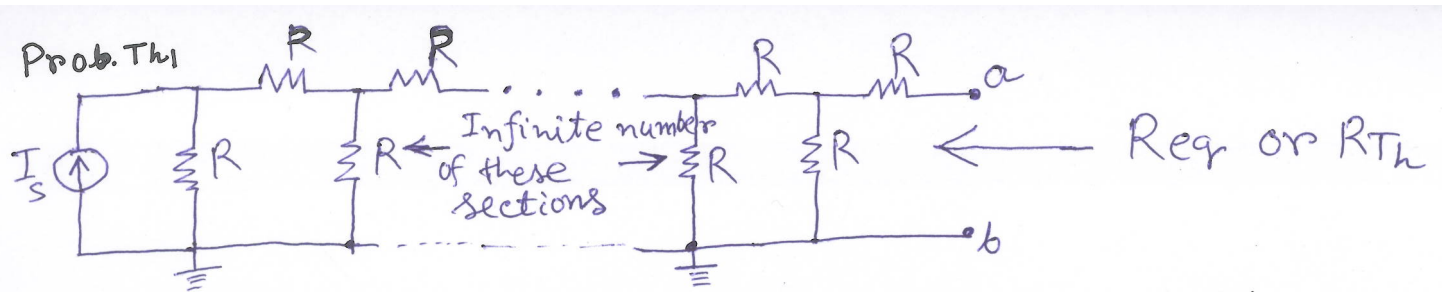
3

Prob.Th 5. For the circuit shown apply Norton's theorem to determine the current through R_3 . Given

$R_1 = 100\Omega, R_2 = 270\Omega, R_3 = 180\Omega, V_1 = 25Volt, V_2 = 12Volt.$

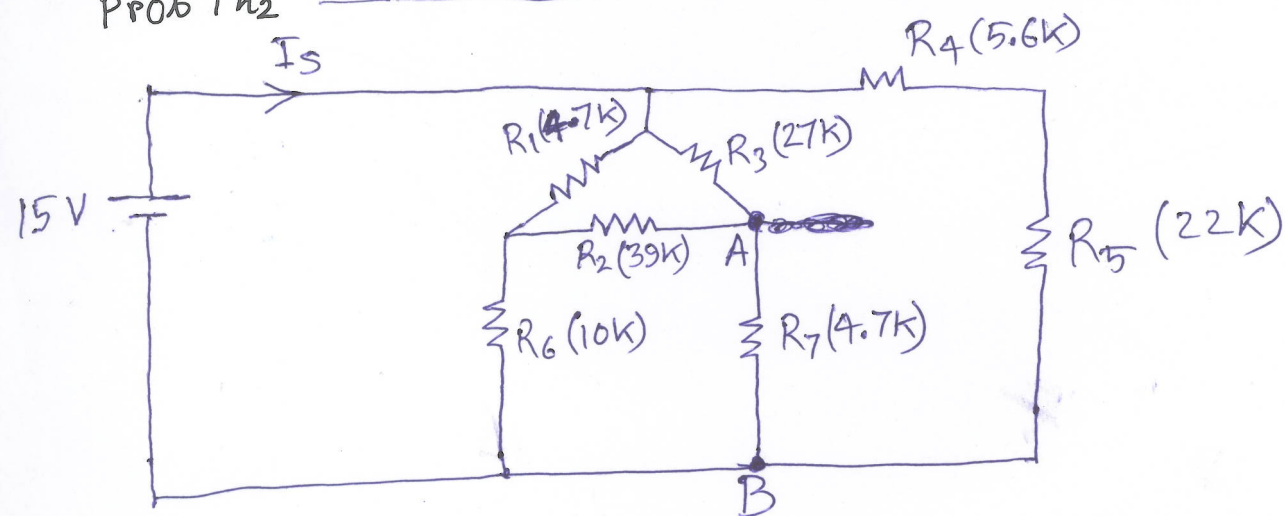


3



- (a) Find Norton's equivalent circuit. 4 + 1
- (b) If another resistor R is connected at $a-b$ terminal, what is the expression for current through it in terms of I_s and R ? 3

Prob Th2



Analyze the circuit to determine the Thevenin's equivalent circuit across the terminals of $R_7 = 4.7k\Omega$ (i.e. terminals A-B). Calculate the total supply current I_s .

HINT: Use Δ -Y transformation for the Δ formation of R_1 - R_2 - R_3

6 + 4