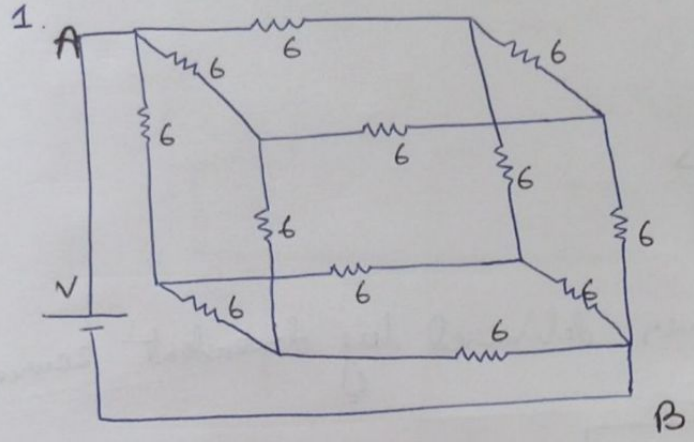
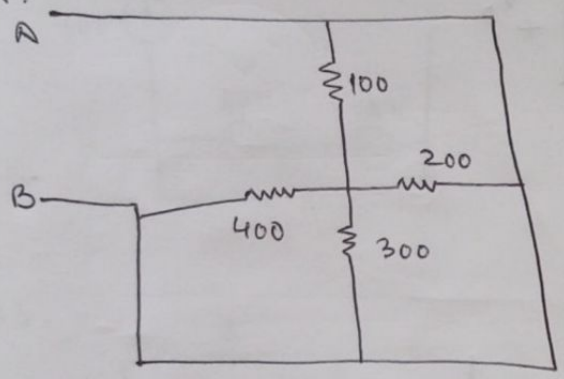
ASSIGNMENT 1

1.



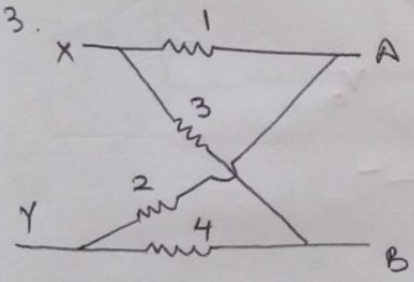
Find R_{AB}

2.



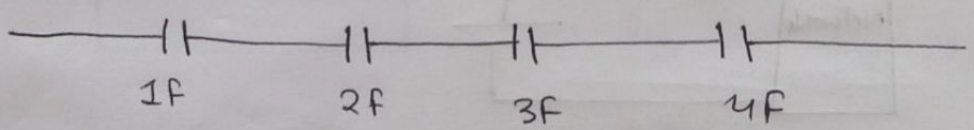
Find R_{AB}

3.



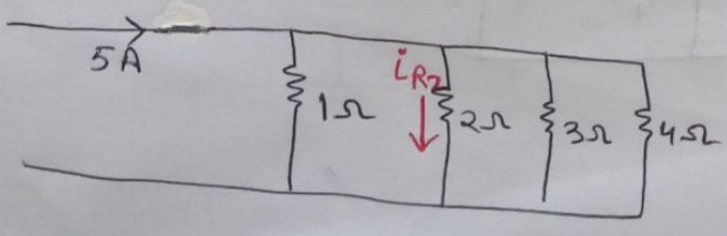
Find R_{XY}, R_{AB}, R_{XA}, R_{YB}

4.



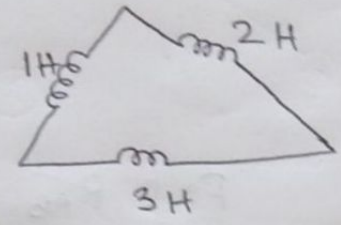
Find voltage across 2' F if overall voltage is 25 V.

5.

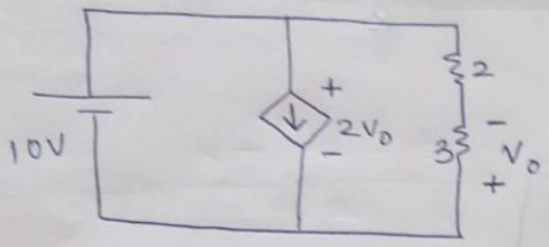


Find i_{R_2}

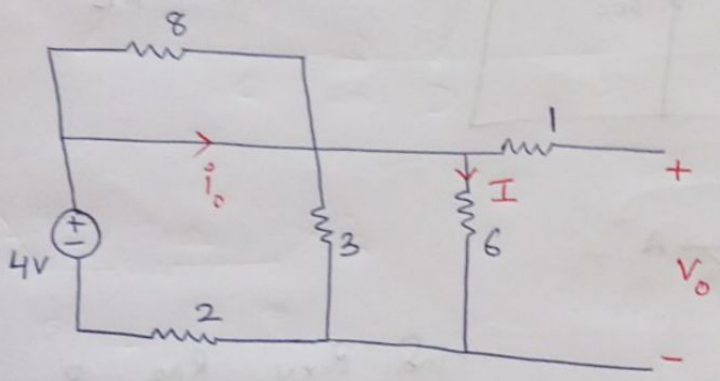
6. Convert delta to star.



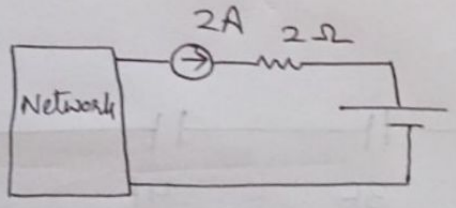
7. Find the power delivered by dependent source.



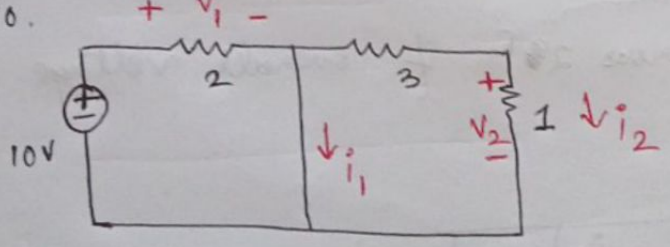
8. Find i_0, V, I



9. Find V.

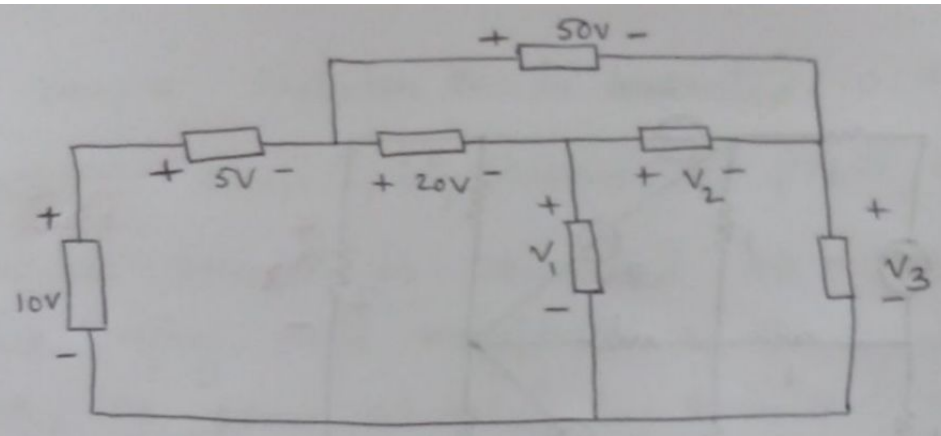


10.



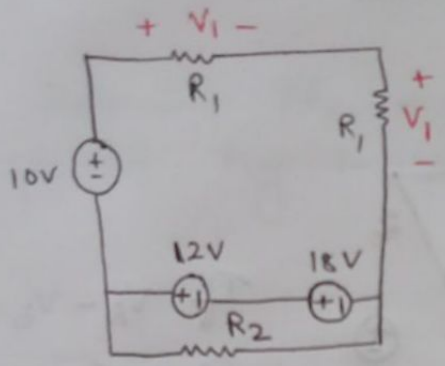
Find V_1, V_2, i_1 and i_2

11.



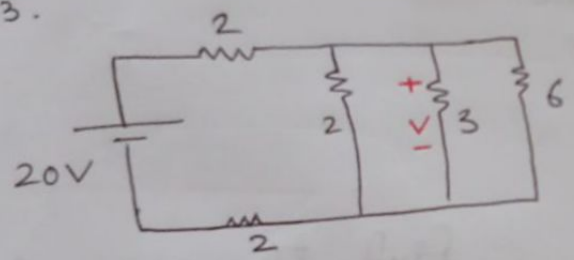
Find V_1, V_2, V_3

12.



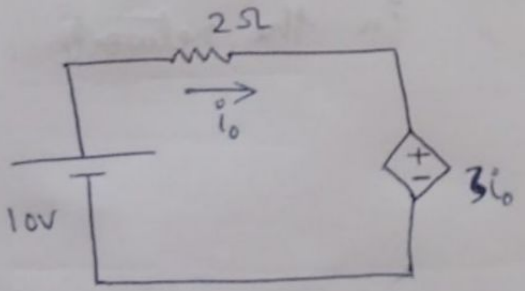
Find V_1 and V_2.

13.



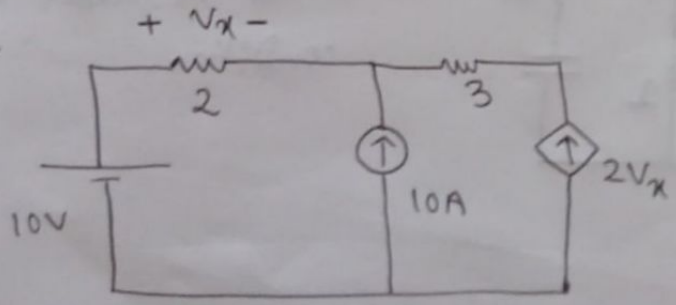
Find voltage across 3Ω.

14.



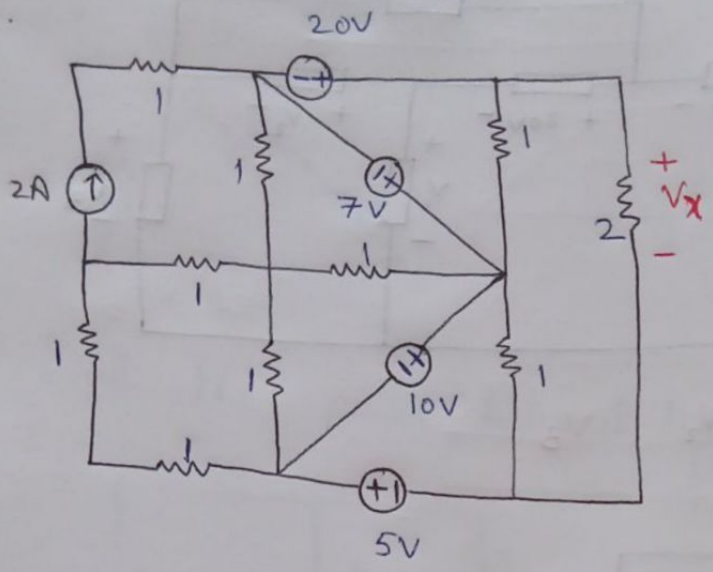
Find power delivered or power absorbed by the dependent source.

15.



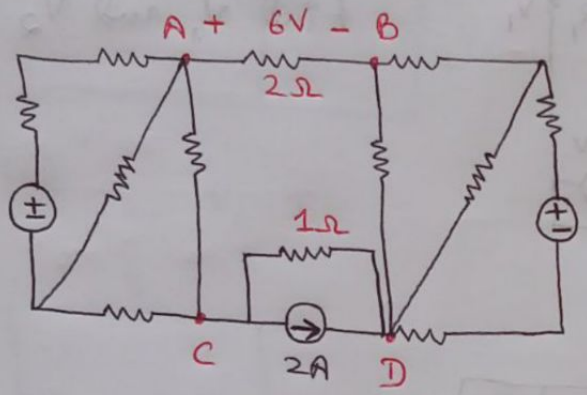
Find V_x.

16.



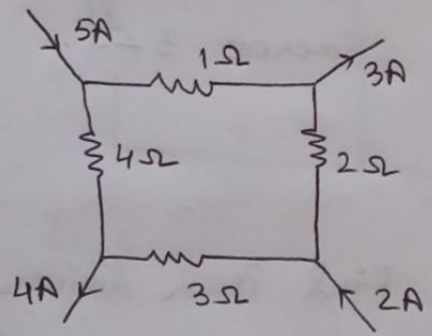
Find V_x.

17.



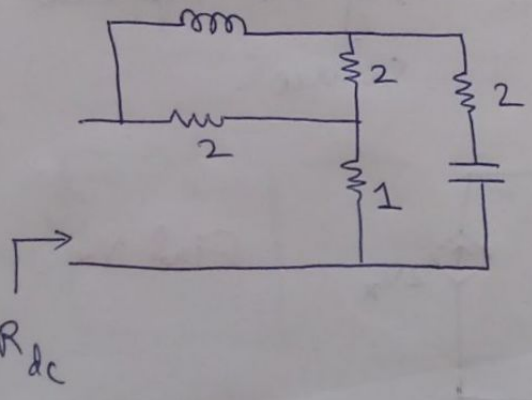
If $V_A - V_B = 6V$
Find $V_C - V_D = ?$

18.



Find the power lost in the network

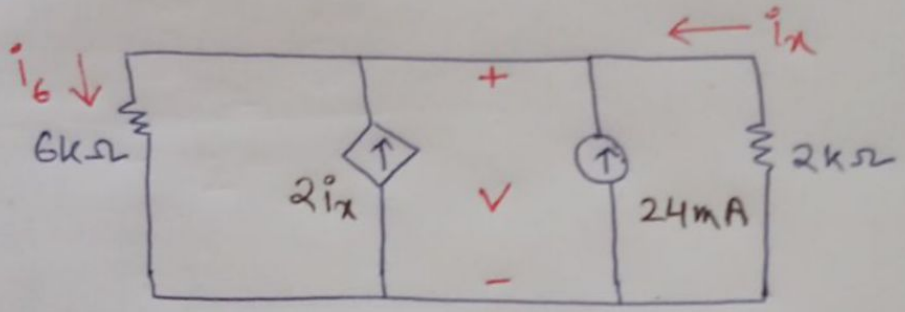
19.



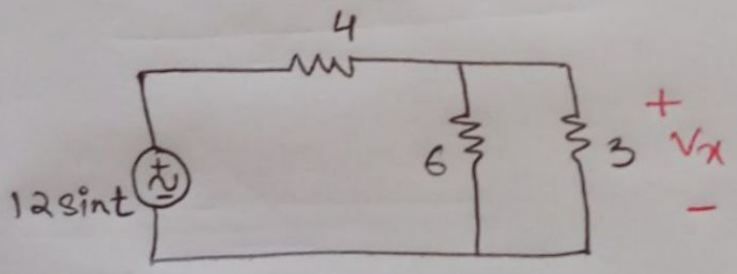
Find R under dc condition.

20. When a resistor R is connected to a current source, it consumes a power of 18W. When the same R is connected to a voltage source having same magnitude as the current source, the power absorbed by R is 4.5W. The magnitude of the current source and value of R are ____ ?

21. Determine the value of v and power supplied by independent current source.

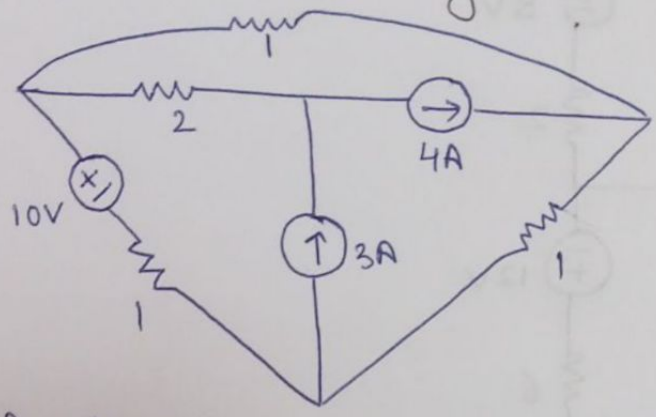


22. Determine V_x in the circuit.

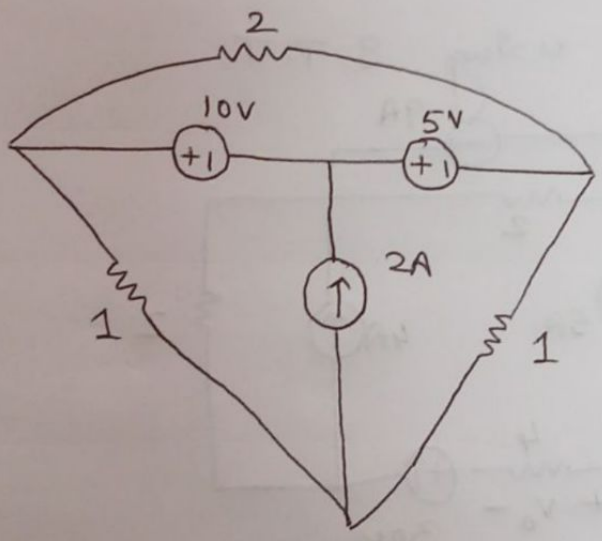


ASSIGNMENT 2

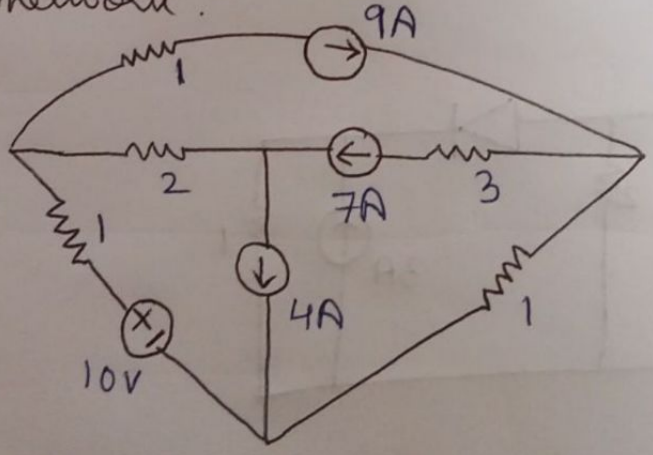
1. Find power delivered by voltage source using mesh and nodal analysis.



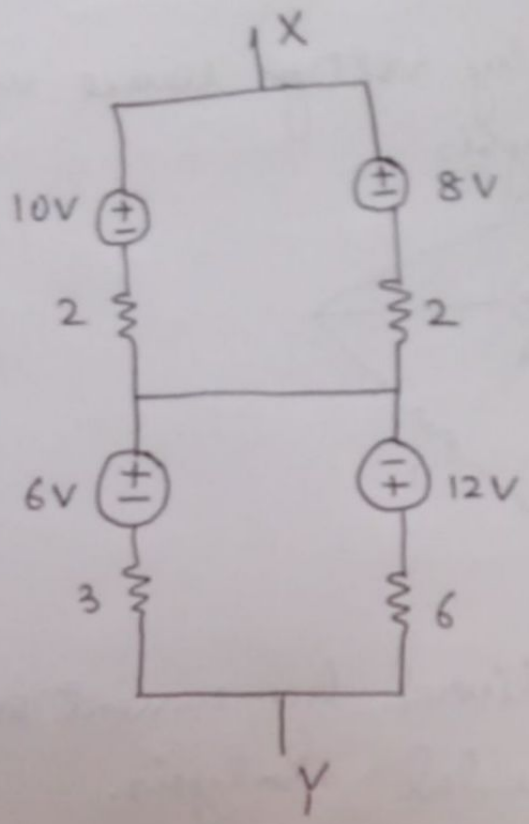
2. Find the power delivered by current source using mesh and nodal analysis.



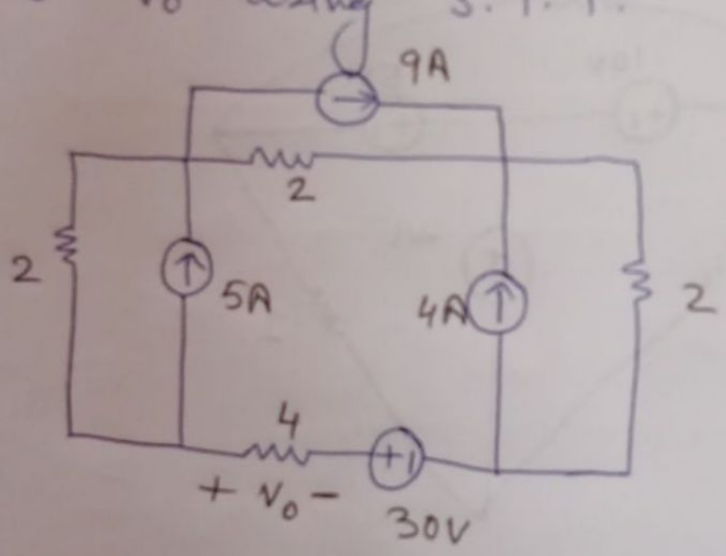
3. Write the mesh and nodal equations governing the network.



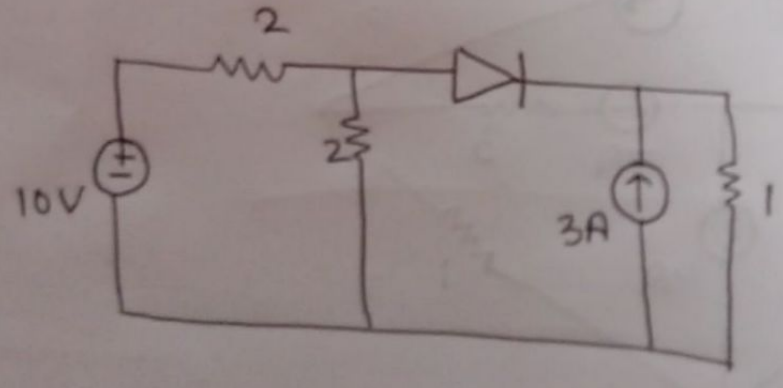
4. Find the equivalent network between X and Y



5. Find V_o using S.T.T.

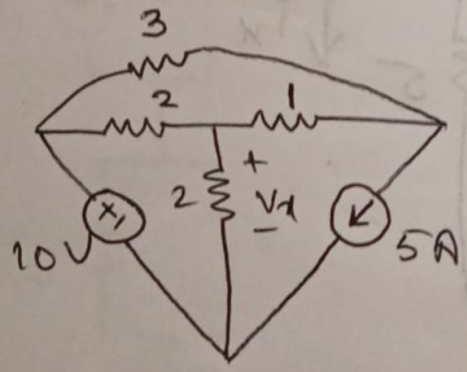


6. If diode is ideal one, find current through it.

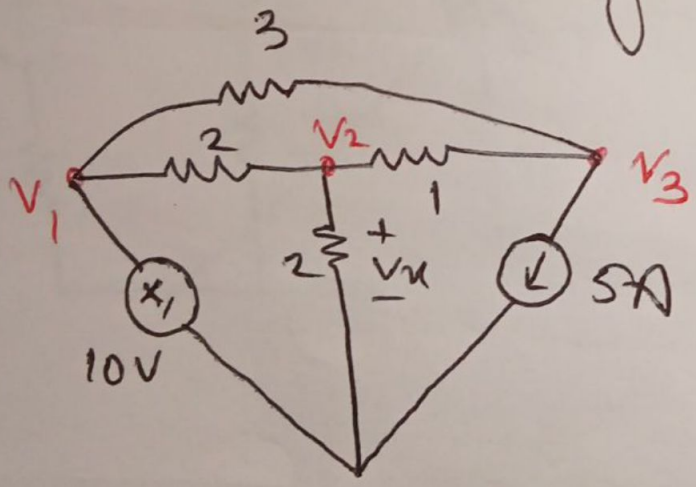


PRACTICE SET 4

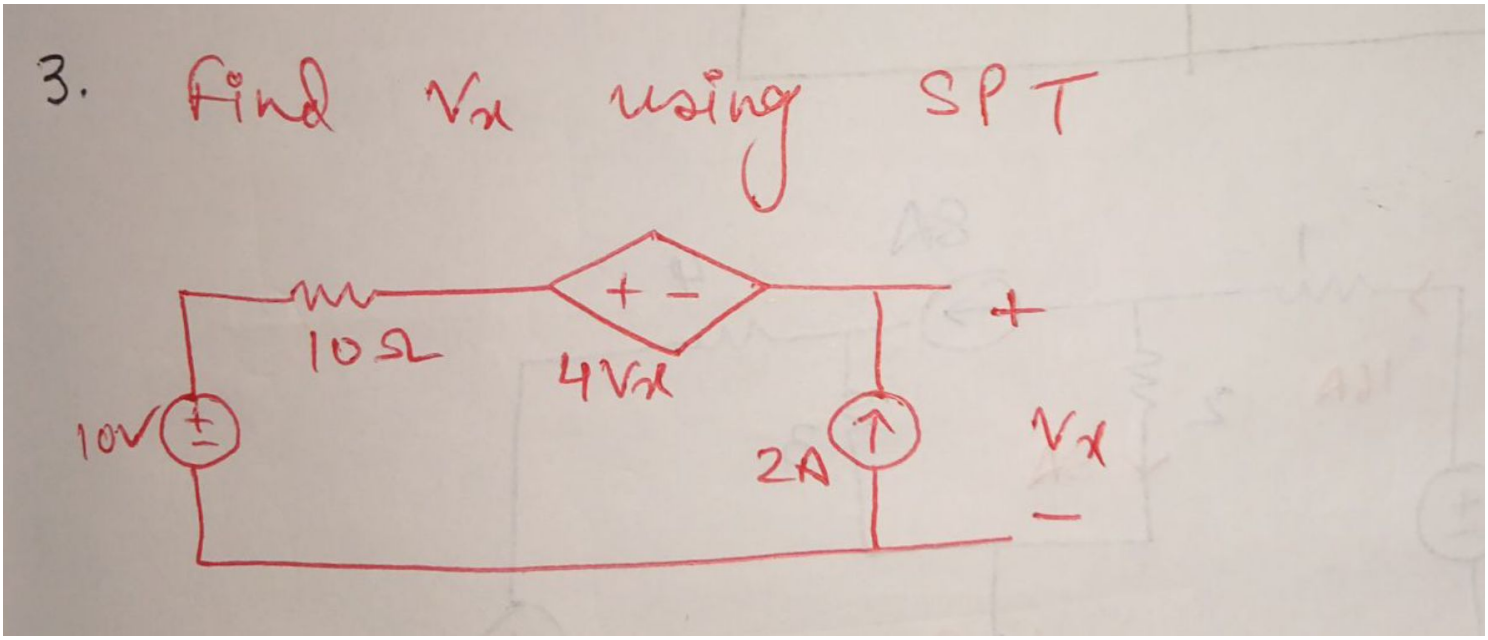
1. Find V_x with the help of SPT



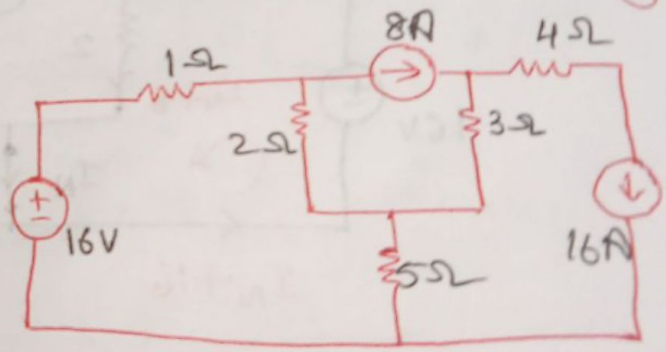
2. Find V_x using Nodal Analysis



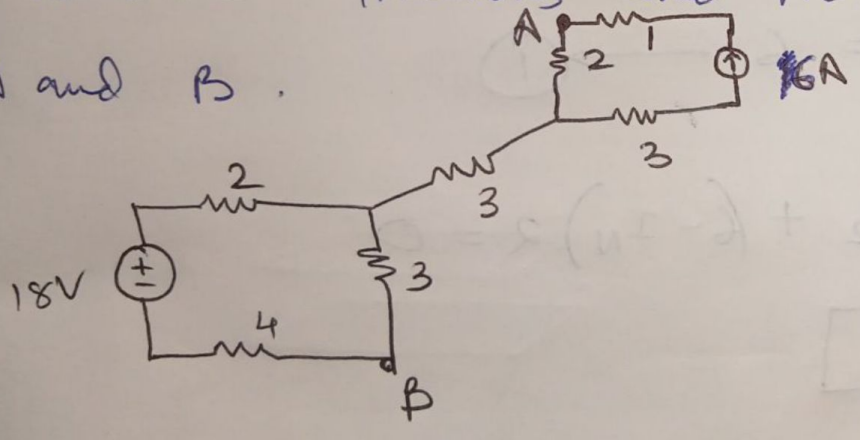
3. Find V_x using SPT



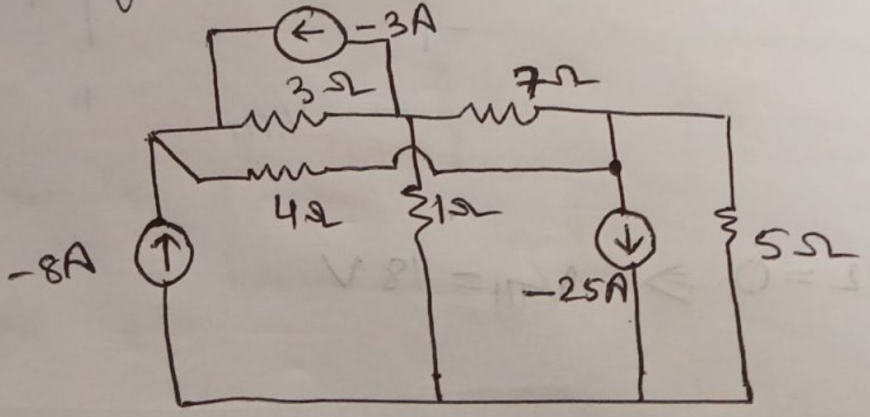
4. Find power lost in 5Ω resistor using Thevenin and Norton



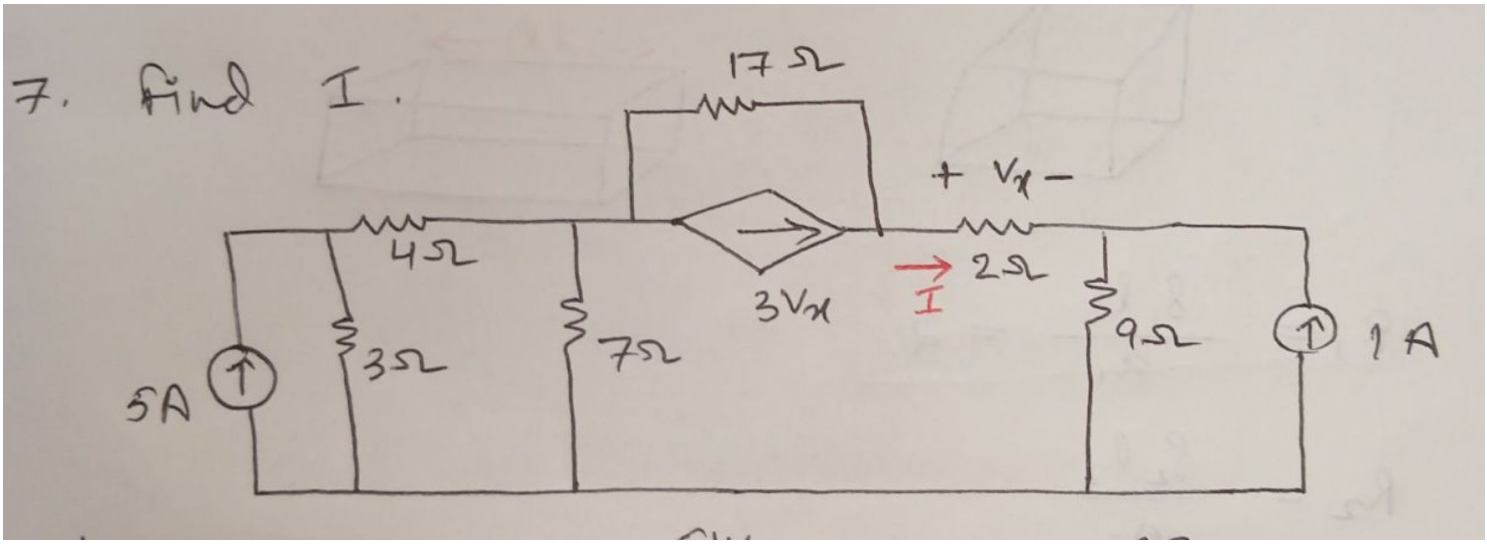
5. Determine Thevenins and Norton equivalent b/w A and B.



6. Determine nodal voltages for the circuit, as referenced to bottom node.

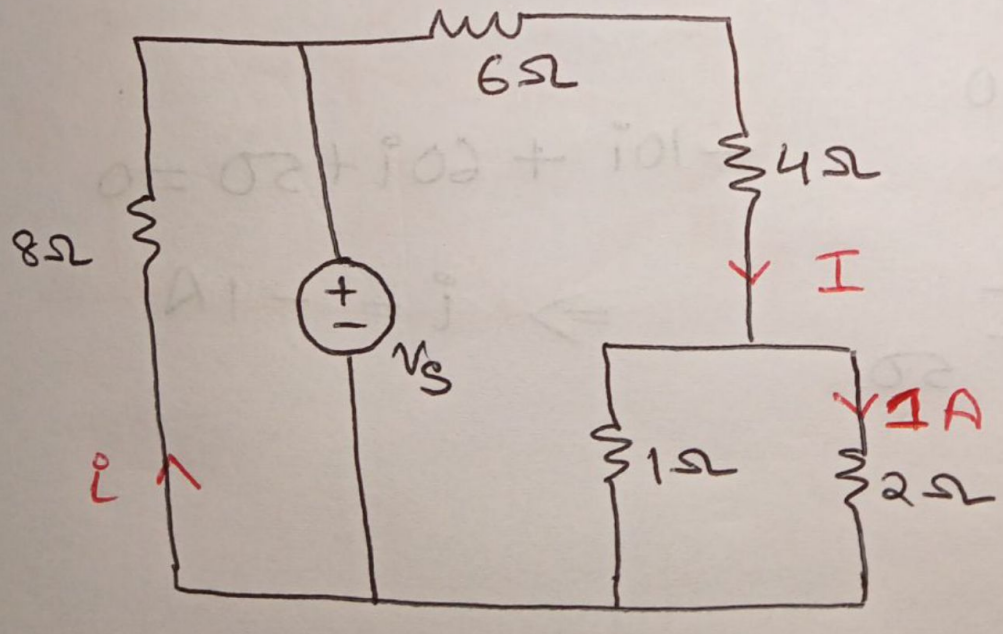


7. find I.

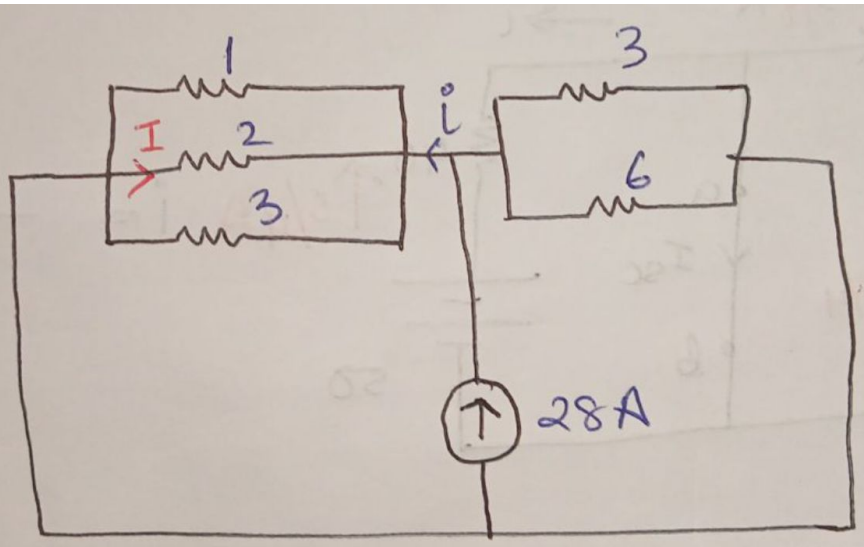


8. A cube shaped material has a resistance of 2Ω b/w any of its opposite faces. Now if this material is streteched in one direction by applying linear force to double its original length, then the resistance b/w the opposite streteched face is _____

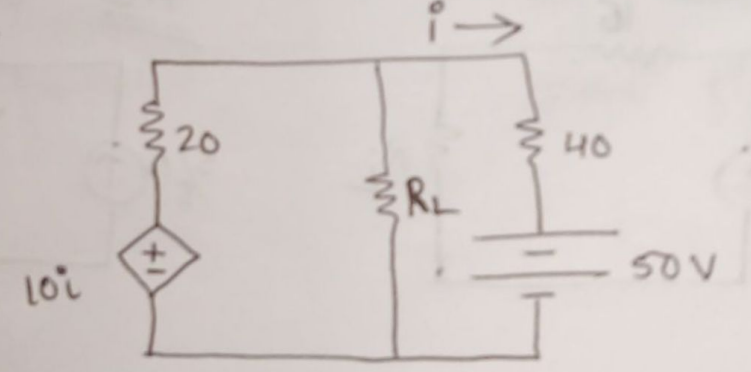
9. Determine i.



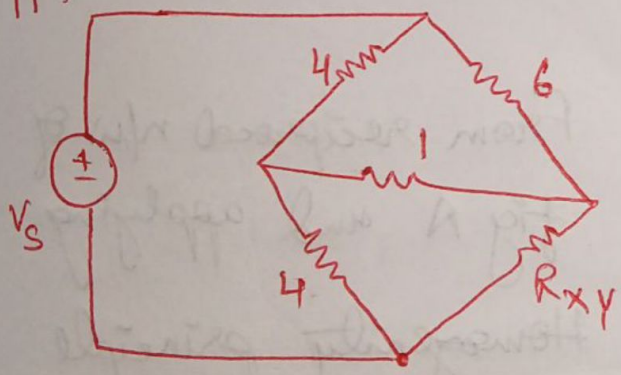
10. find I



11. Determine Thevenin and Norton equivalent across the load.



11.



what is the value of R_x for which P_{max} occurs.

12. Use the data in fig A to find current 'i' in fig. B.

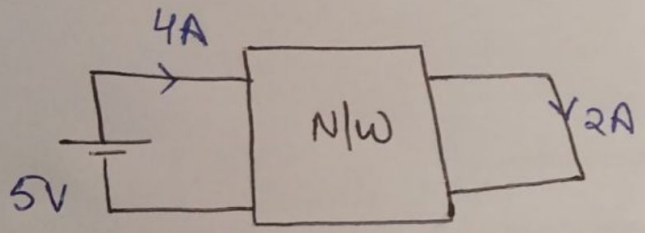


fig A

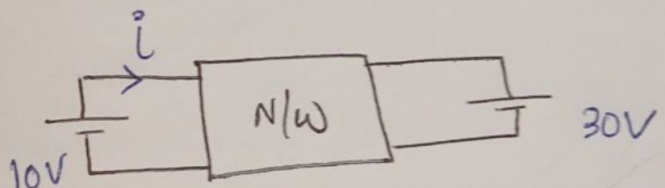


fig B

PRACTISE SET 3

1. If $I_{s_1} = 10A$, $I_{s_2} = 5A$ then $V_x = 20V$

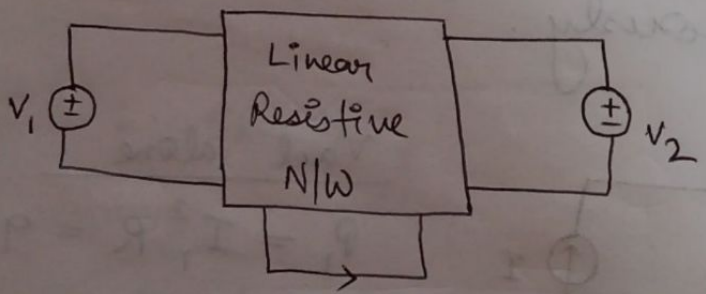
   If $I_{s_1} = 20A$, $I_{s_2} = -5A$ then $V_x = 10V$

   Now if $I_{s_1} = I_{s_2} = 15A$ then $V_x =$ _____

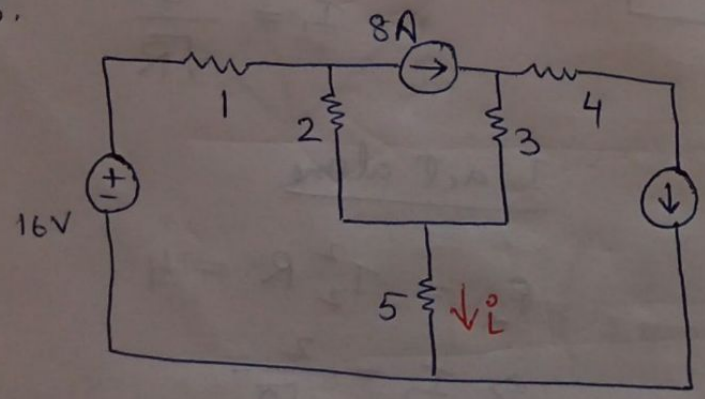
2. If $V_1 = 10V$, $V_2 = 0V$ then $I = 5A$

   If $V_1 = 0V$, $V_2 = -5V$ then $I = 1A$

   Then if $V_1 = V_2 = 15V$, find $I =$ _____



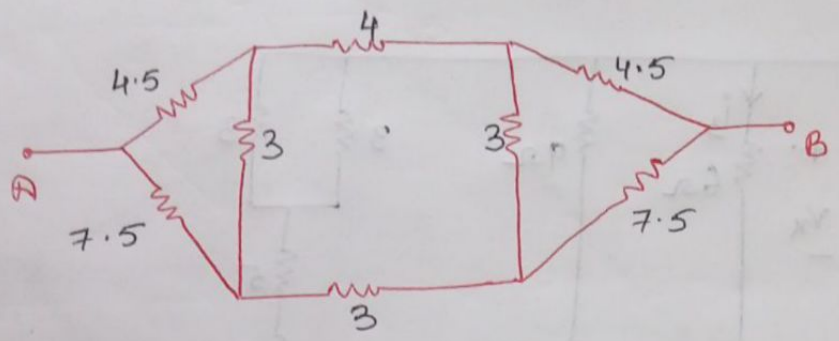
3.



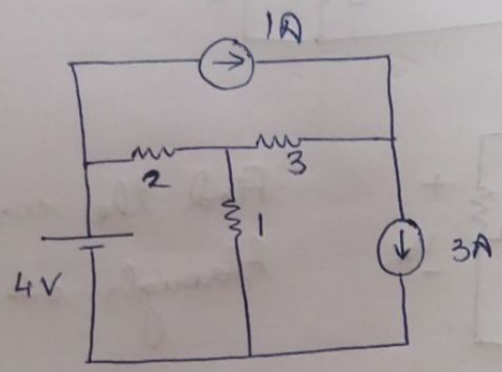
What is the power lost in 5Ω resistor using S.P.T.

Also check using KVL.

4. Find equivalent resistance b/w A and B.

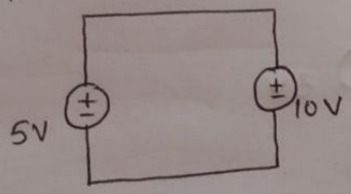


5. Find current in 1 Ω resistor using SPT

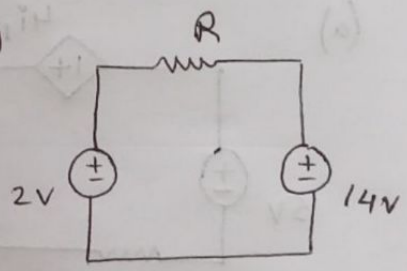


6. Determine which of the circuits are valid.

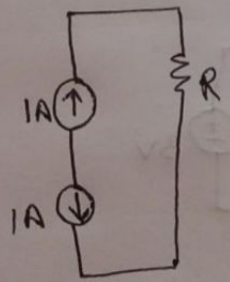
(a)



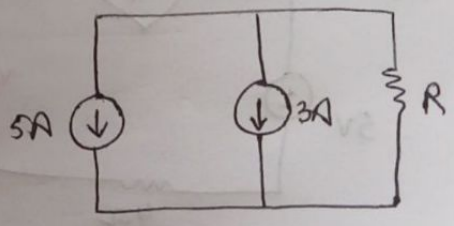
(b)



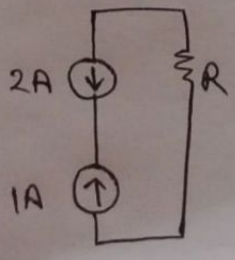
(c)



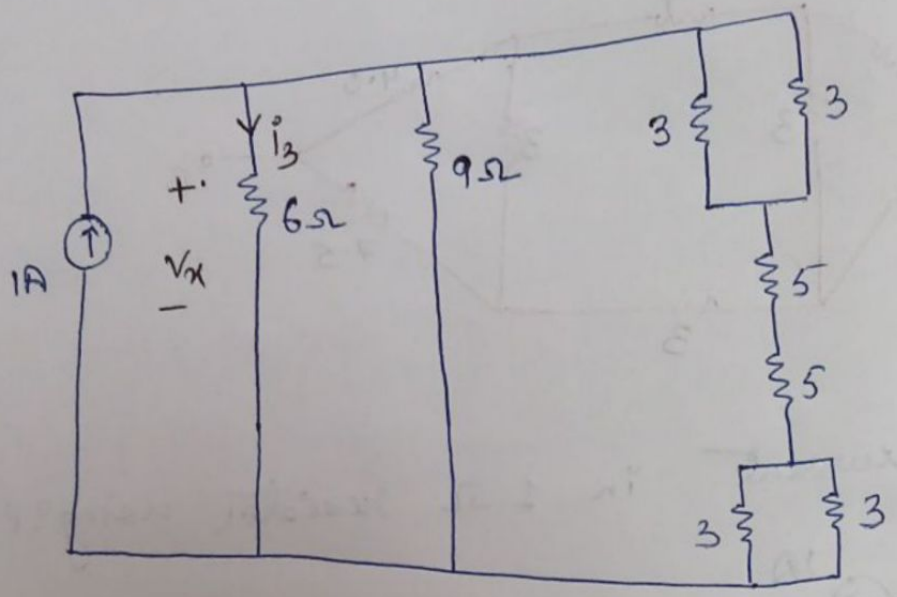
(d)



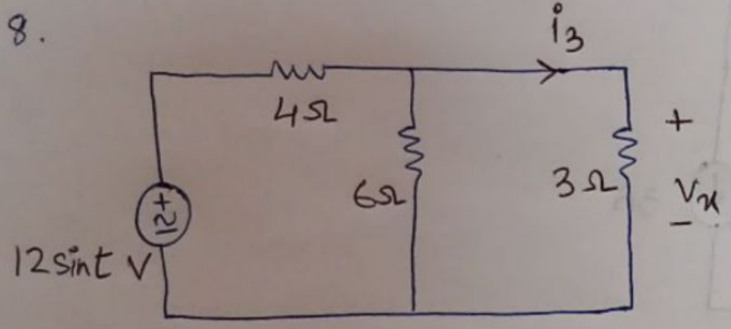
(e)



7. Calculate voltage V_x.



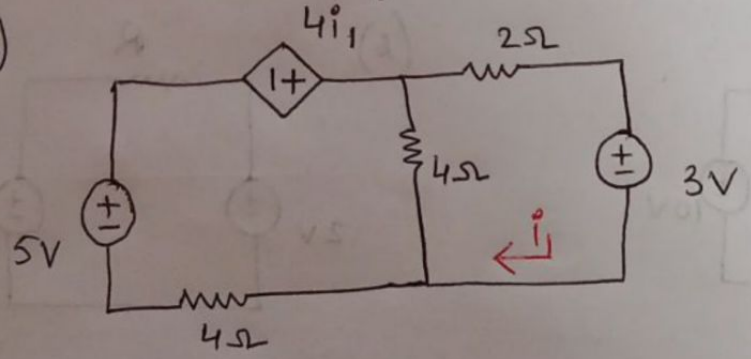
8.



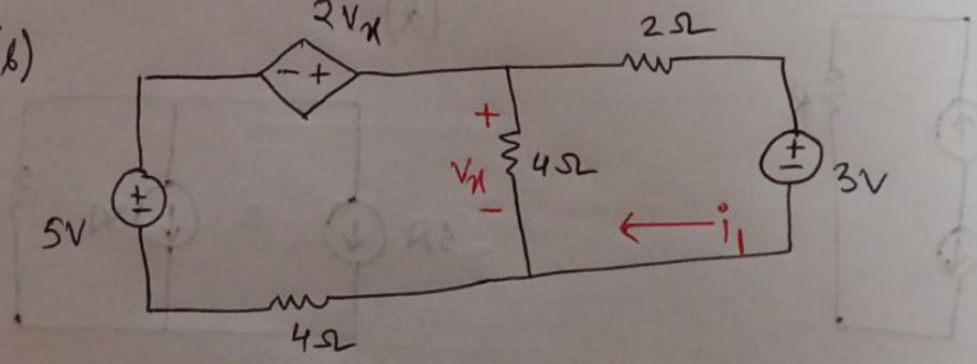
Find the current through 3Ω.

9. Use mesh analysis to find i_1.

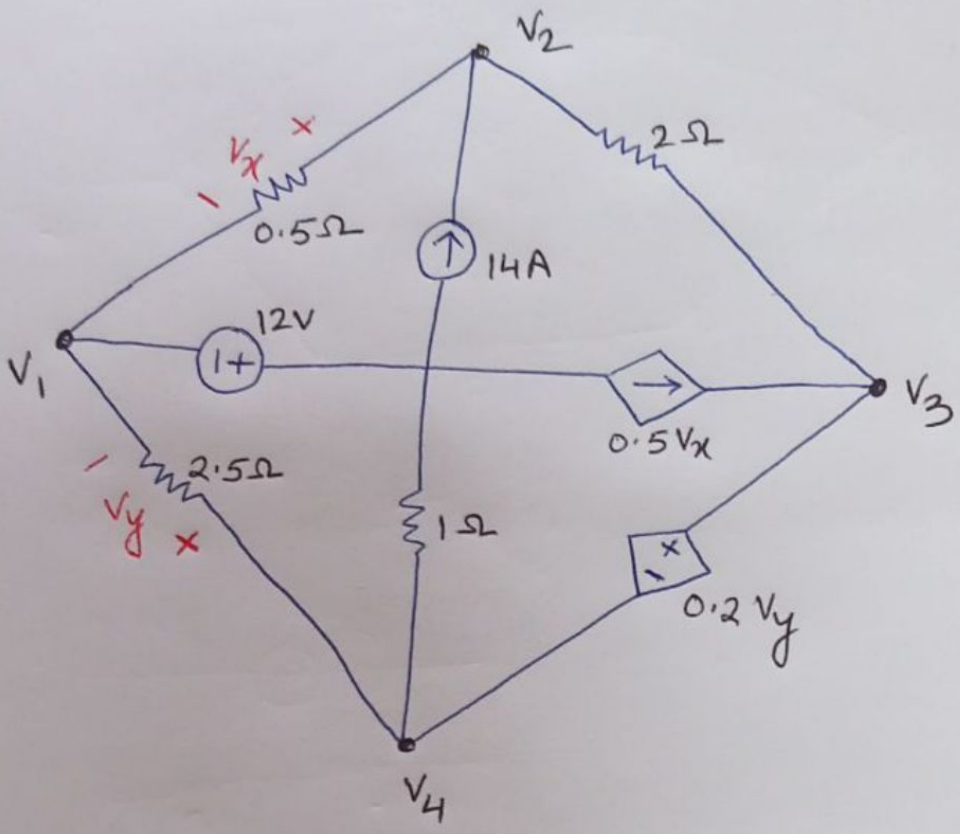
(a)



(b)

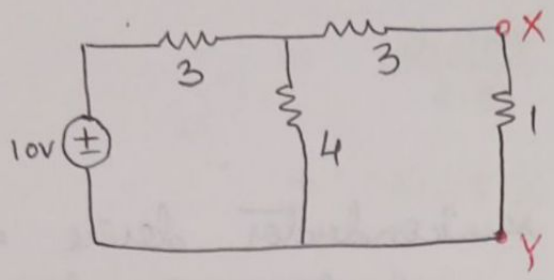


10. Determine V_1, V_2, V_3 and V_4 by Nodal Analysis



Practice set 5

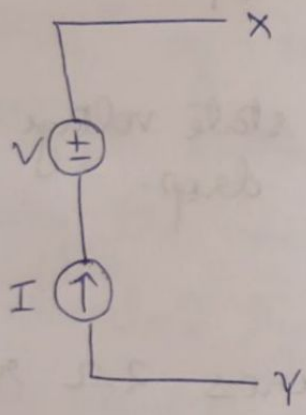
1. Use substitution theorem to substitute 1Ω branch in 5 different ways.



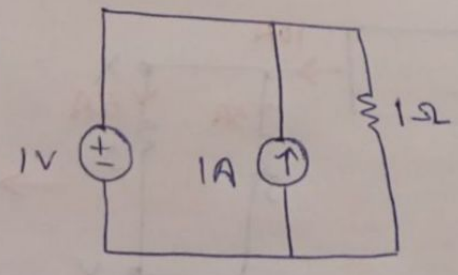
2. Which theorem is applicable?

(a) Thevenin equivalent (b) Norton equivalent

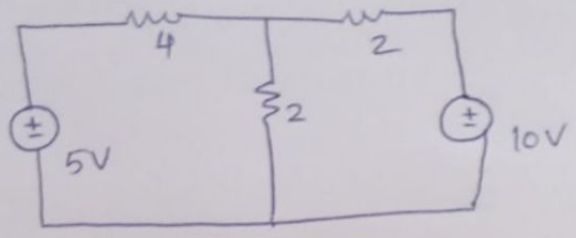
(c) Both (d) None.



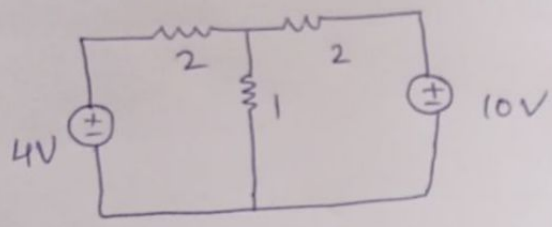
3. Find the power delivered or power absorbed by 1V, 1A and 1Ω.



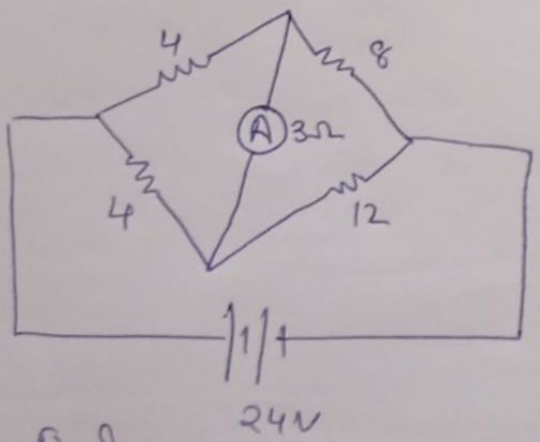
4. Using superposition theorem, determine current flowing in the resistor R_1, R_2 and R_3 and potential of point A relative to point B.



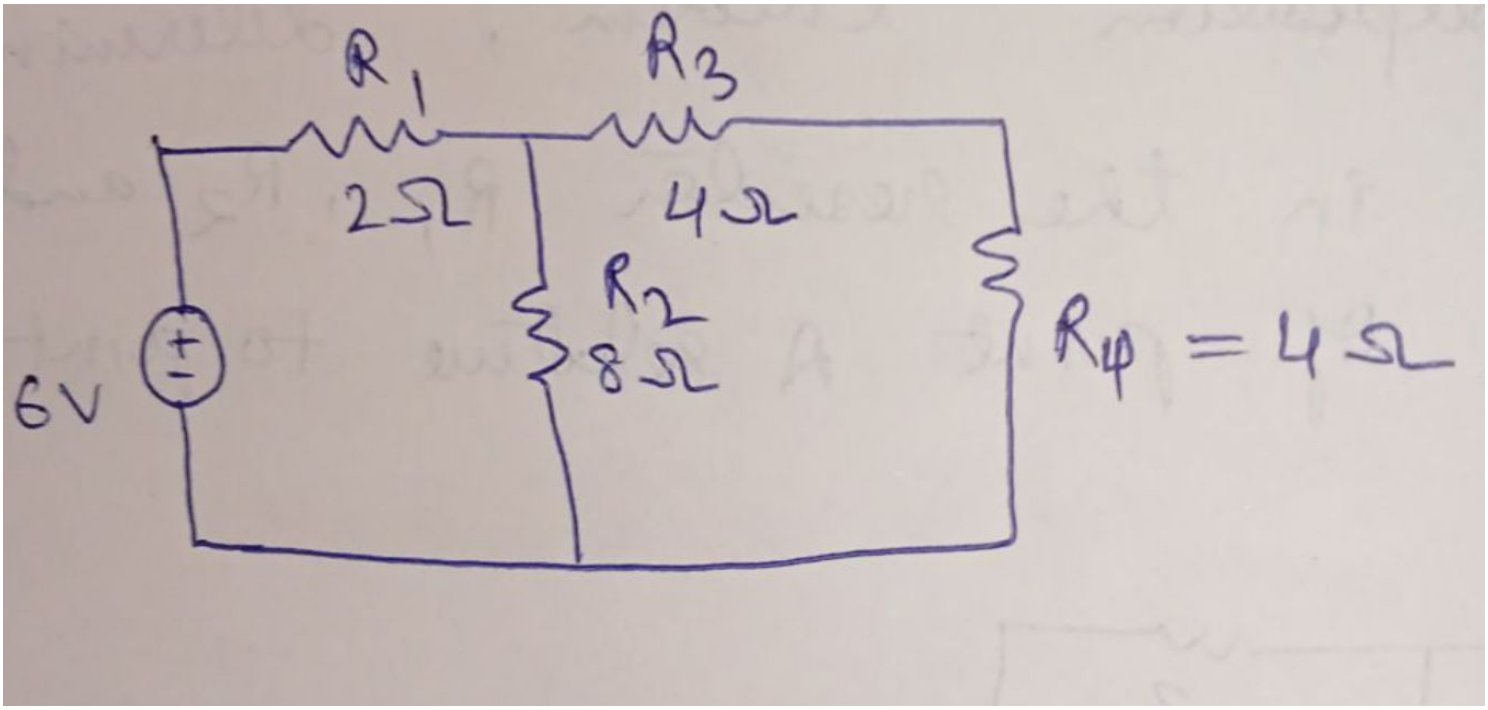
5. Using Milliman theorem, find the current in resistor R_3 in the given network.



6. ~~Using~~ Find the current in ammeter A if resistance 3Ω connected in the unbalanced wheatstone bridge.

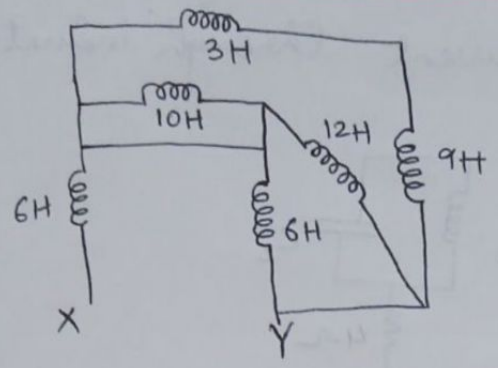


7. Find current flowing in R_4. If ammeter having internal resistance of 1Ω is inserted in series with R_4, what reading will this ammeter show?


R1
2Ω
R3
4Ω
R2
8Ω
6V
+
−
R4 = 4Ω

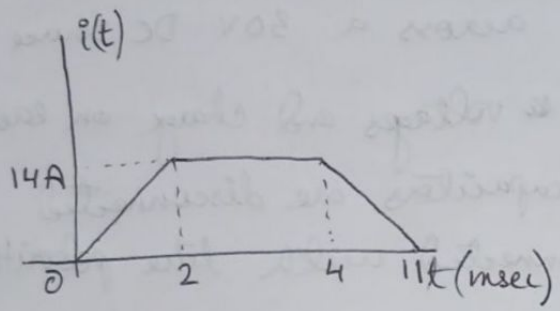
PRACTICE SET 6

1.

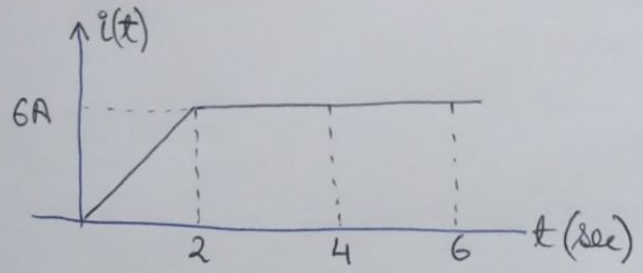


Find L_{eq}

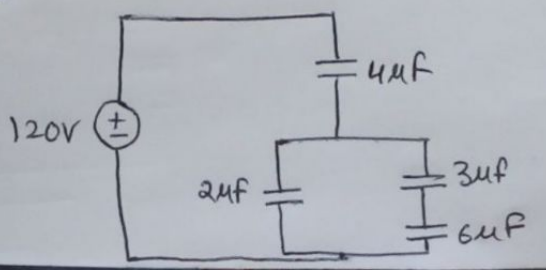
2. If the current flowing through 2H inductor is as shown. Plot the voltage across it.



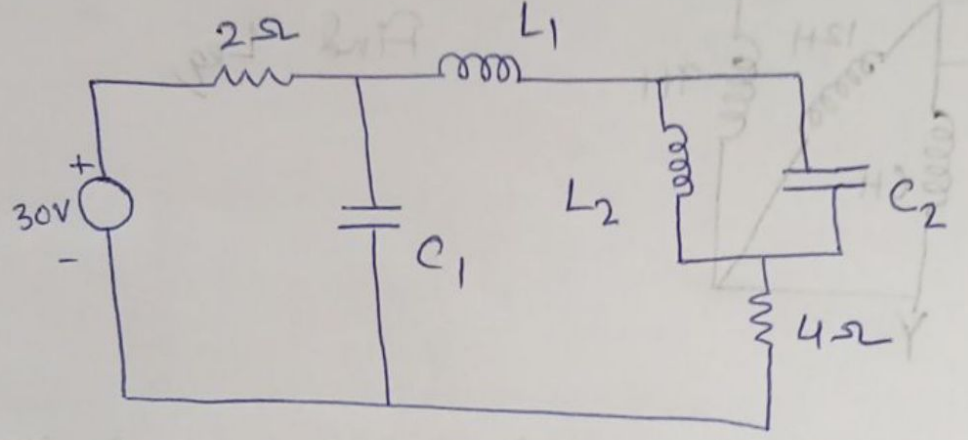
3. A practical coil has inductance of 2H and resistance of 1Ω. If this coil is excited with the current as shown below. Find total energy absorbed by the coil upto 1st 4 seconds.



4. Determine steady state voltages across each capacitor and energy stored in ~~it~~ each.



5. Determine steady state voltages across capacitors and current through inductors.



6. Two capacitors of 1 μF and 2 μF are connected in series across a 30V DC source. Find their steady state voltages and charge on each. Now if these two capacitors are disconnected from supply and connected with like polarities together, now determine steady state voltage and charge on each.