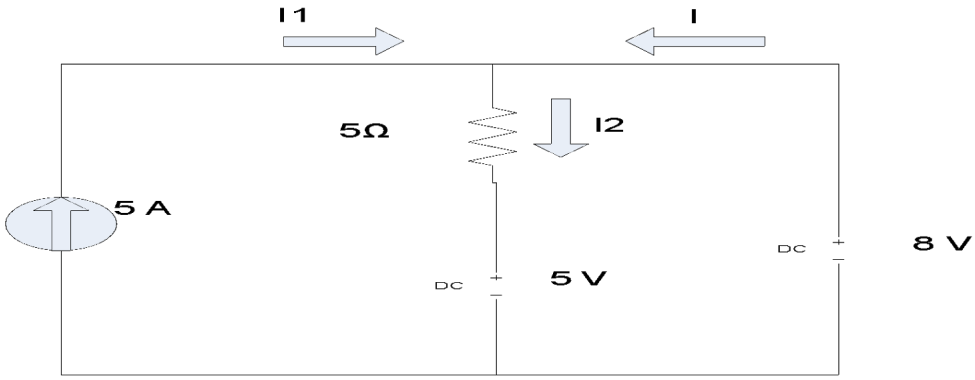
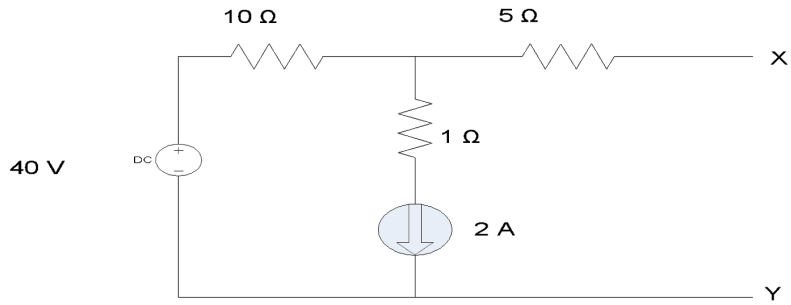
Network Analysis
Tutorial-I

1. Find the current flowing in the 5 Ω resistor.



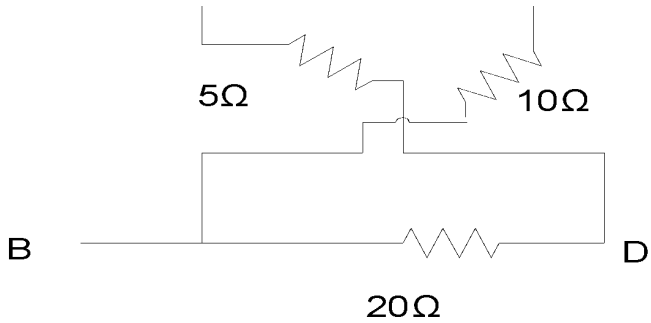
Ans: I_2 = -4.5 A

2. Find (a) open circuit voltage V_{xy} (b) if XY is short circuited, find I_{xy}



Ans: (a) V_{xy} = 20 V (b) I_{xy} = 1.34 A

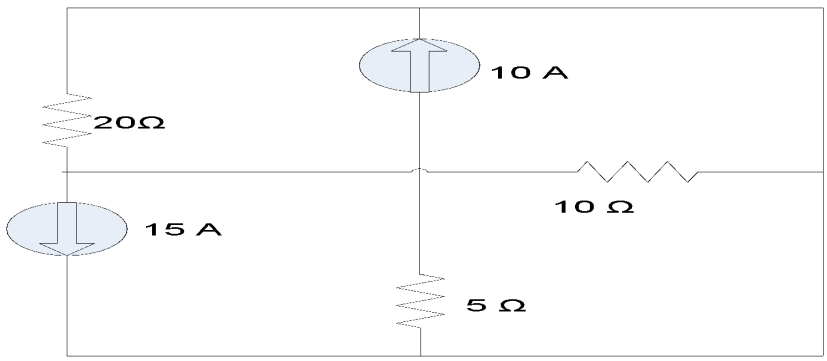
3. Find V_{ab} so that the voltage across 10 Ω resistor is 45 V. Also find drop across 5 Ω.



Ans: V_{ab} = 180 V, V_5 = 36 V

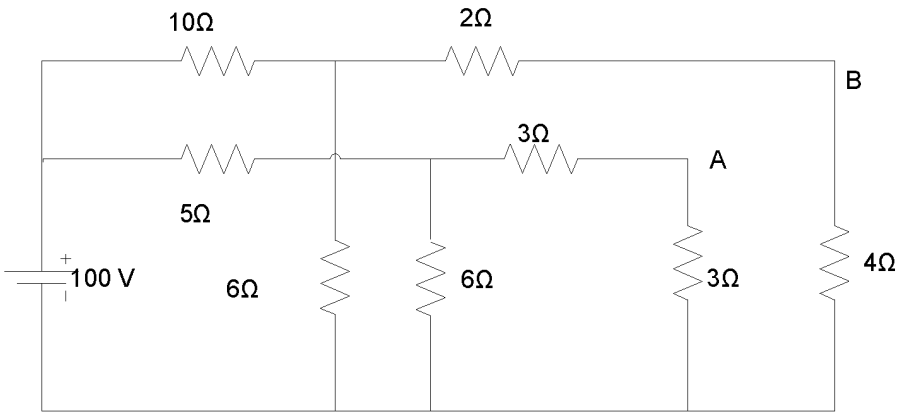
4. Two coupled coils have self inductances $L1 = 50 * 10^{-3}$ H and $L2 = 70 * 10^{-3}$ H. The coefficient of coupling being 0.65 in the air, find voltage in the second coil and the flux of first coil provided the second coil has 500 turns and the circuit current is given by $i1 = 5sin314t$ A.

5. Determine the drop across the 10 Ω resistance in the circuit shown.



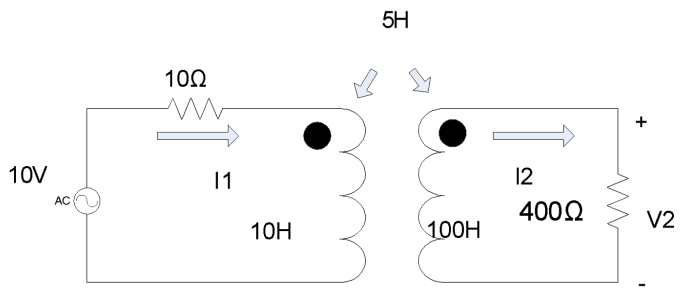
Ans: 71.42 V

6. Determine the voltage Vab in the circuit shown.



Ans: 3.37 V

7. For the circuit shown, find the ratio of output voltage to the source voltage.



Ans: $40.8 * 10^{-3}\ ang(-84.13\square)$