WORK SHEET

1. A 60 W light bulb has a current of 0.5 A flowing through it. Calculate (i) the number of electrons passing through a cross-section of the filament (ii) the number of electrons that pass the cross-section in one hour.

2. Body A has a positive charge of 0.6 µC and body B has a charge of 0.3 µC (negativee). If 87×10^{15} electrons are transferred from A to B, what are the charges in coulombs on A and on B after the transfer?

3. Three equal resistors are connected as shown in Fig 1 below. Find the equivalent resistance between points A and B.
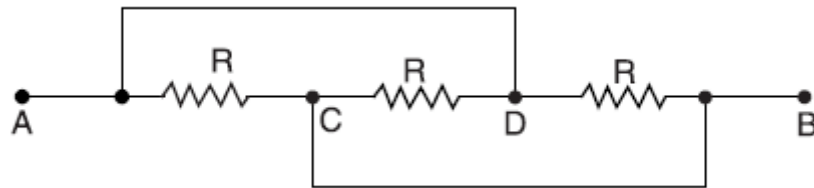

Fig .1

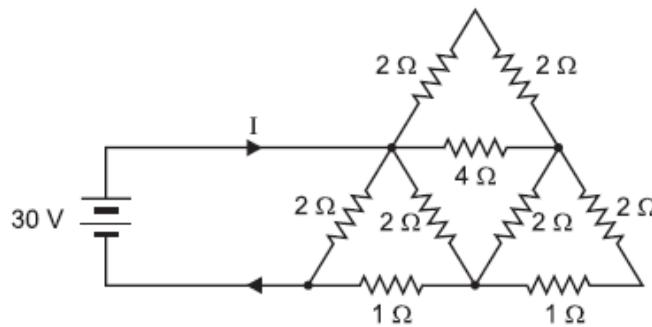4. Find the current supplied by the d.c. source in the circuit shown in Figure 2 below

Fig.2

5. By using KCL and KVL, Determine the current in 4 ohms resistance of the circuit shown in Figure 3 below

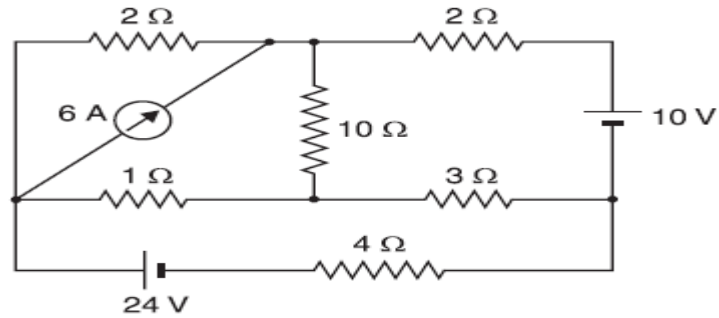fundamental of electrical engineering

Fig.3

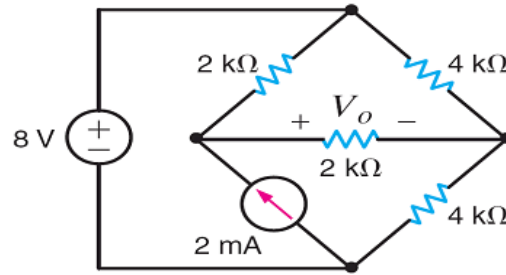6. Use nodal analysis to find V_o in the circuit in fig.4

Fig.4

7. Find V_x using super position in fig. 5
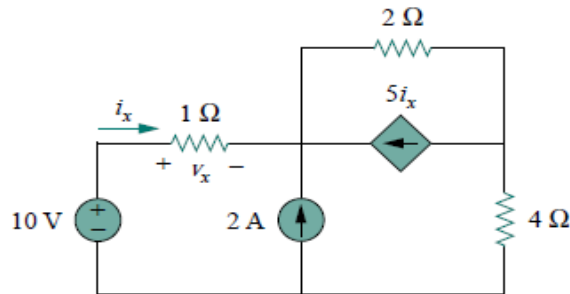

Fig.5

8. By using voltage divider rule, calculate the voltages v_x and v_y in the circuit shown in Figure 6 below.,
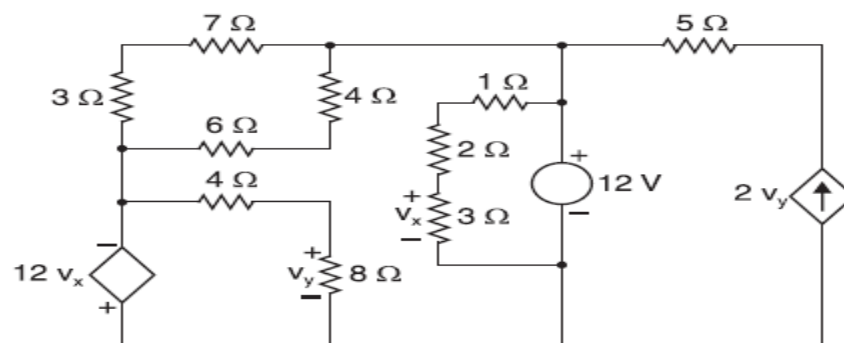

Fig.6

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9. For the circuit in fig 7 obtain the Thevenin equivalent as seen from terminals:
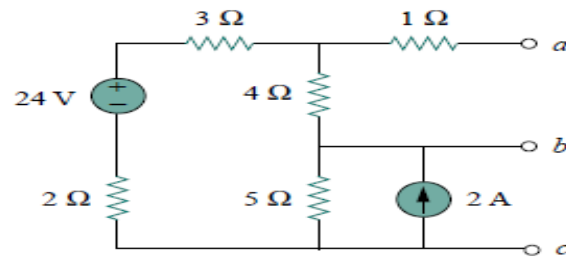
a) a-b b) a-c

Fig.7

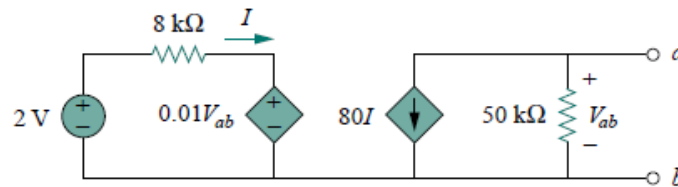10. Obtain Norton equivalent at terminal a-b of the circuit in fig 8.

Fig. 8

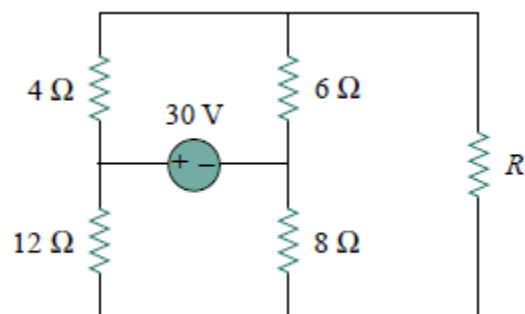11. Refer to fig 9. for what value of R is the power dissipated in R maximum? calculate the power

Fig.9

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