# Chapter 28

1- In the figure, all the resistors have a value of 2 Ohms. The battery is ideal with an emf = 15 V. What is the potential difference across the resistor R3? [3.0 Volts]
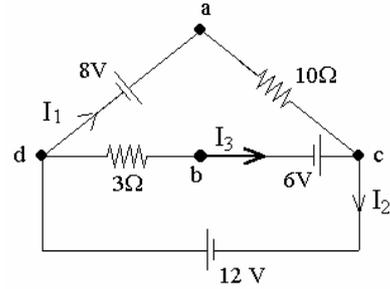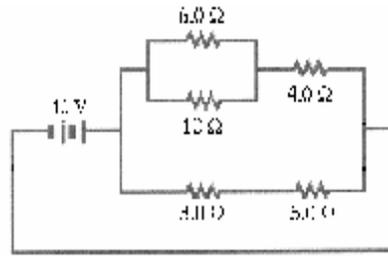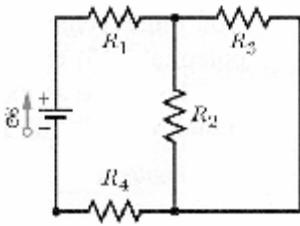

2- The current in the 5.0-ohm resistor in the circuit shown in the figure is: [5.0 A]

3- In the figure, what is the potential difference Va-Vb? [26 V]

4- At t=0, a $2.0*10^{-6}$ Farad capacitor is connected in series to a 20-V battery and a $2.0*10^{6}$ Ohm resistor. How long does it take for the potential difference across the capacitor to be 12 V? [3.7 s]

5- In the figure, a battery of emf of 12-Volt and internal resistance of r = 3.0 Ohm is connected to a bulb of resistance R. If the bulb will light at a steady current of 0.1 A, what should the value of R be? [117 Ohm]
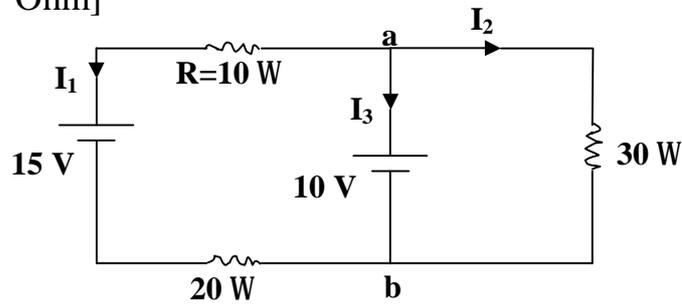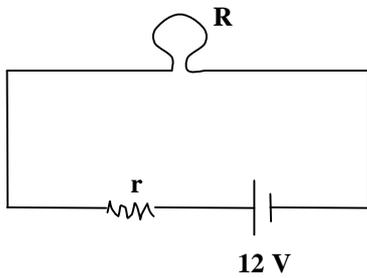
6- In the figure, if R = 10 Ohm find the current in R. [- 0.2 A]
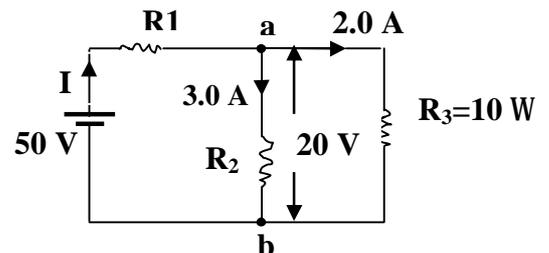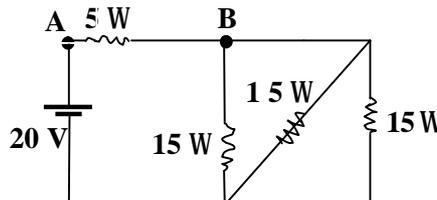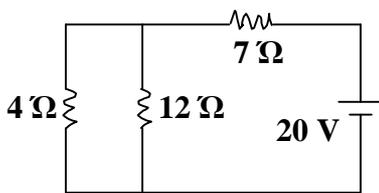
7- What is the power dissipated in the 4.0-Ohm resistor in the figure. [9.0 W]

8- Find the potential difference (VB-VA) between points B and A of the circuit shown in figure. [-10 volts]

9- Find the value of R1 in the circuit of the figure. [6.0 ohms]

10- A 6-V battery supplies a total of 48 W to two identical light bulbs connected in parallel. The resistance (in ohm)of each bulb is: [1.5]

11- A capacitor, initially uncharged in a single-loop RC circuit, is charged to 85% of its final potential difference in 2.4 s. What is its time constant in seconds? [1.3]