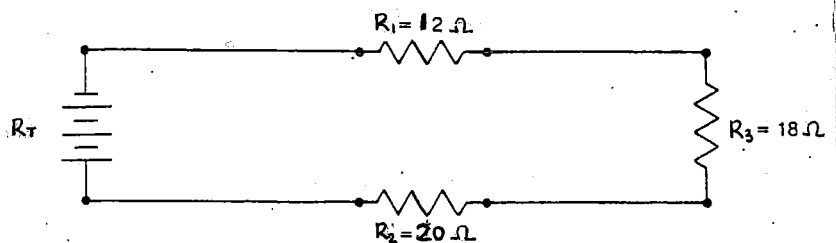
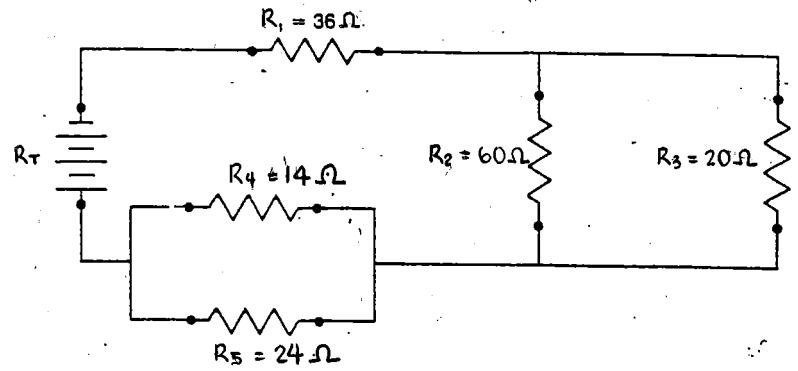


## Electric Circuits Unit Review

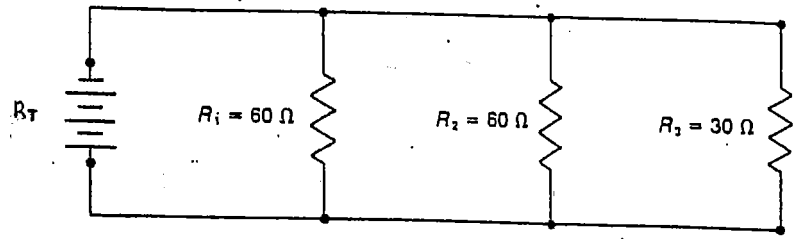
- The flow of charge per unit time defines:  
a) power      b) current      c) voltage      d) resistance
- A current of 3.60 A flows for 15.3 s through a conductor. Calculate the number of electrons that pass through a point in the conductor in this time.
- How long would it take  $2.0 \times 10^{20}$  electrons to pass through a point in a conductor if the current was 10.0 A?
- Calculate the current if a charge of 5.60 C passes through a point in a conductor in 15.4 s.
- How many electrons pass through the appliance in # 8 every minute?
- In an electric circuit,  $6.25 \times 10^{18}$  electrons flows past one point in 0.10 seconds. What is the current?
- A 12 V battery is connected to a  $20 \Omega$  resistor. How much charge flows through the battery in 3.5 seconds?
- A 12 V battery is connected to a  $60 \Omega$  resistor. How much charge will flow through the resistor in 20 seconds?
- What is the potential difference across a conductor to produce a current of 8.00 A if there is a resistance of  $7.20 \Omega$ ?
- When an electric appliance is connected to a 120 V power line, there is a current through the appliance of 18.3 A. What is its resistance?
- What potential difference is required across an electrical appliance to produce a current of 20.0 A when there is a resistance of  $6.00 \Omega$ ?
- What is the current through a 400 W electric appliance when it is connected to a 120 V power line?
- Find the total resistance for each of the following:  
a)



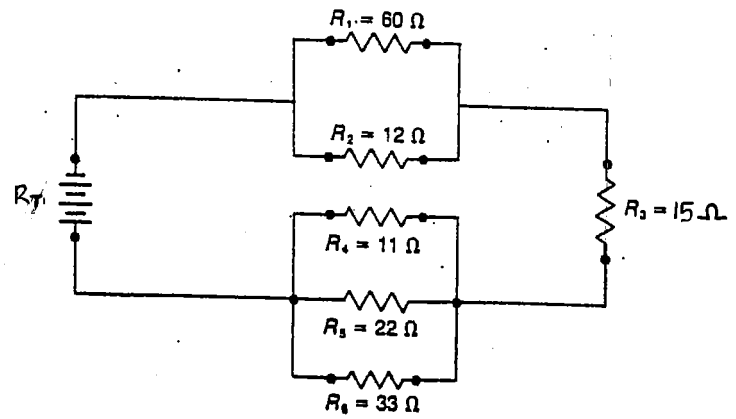
b)



c)

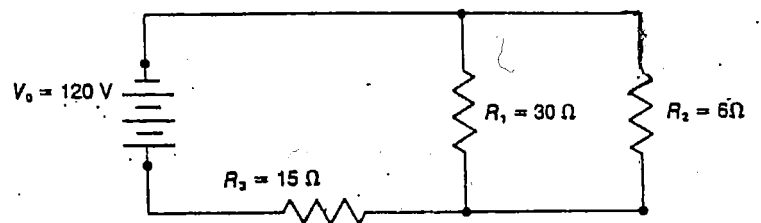


d)

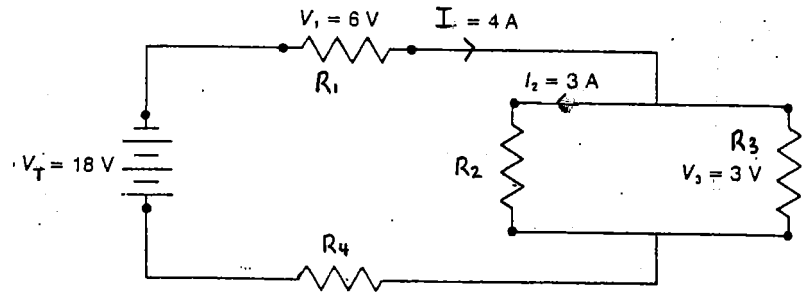


14. Solve the following circuits (find the current, voltage and resistance for each element in the circuit).

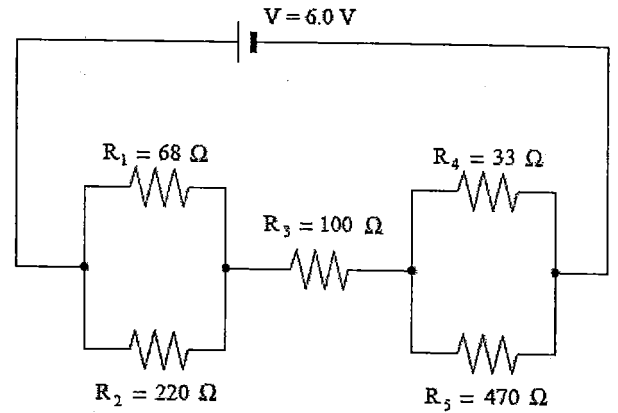
a)



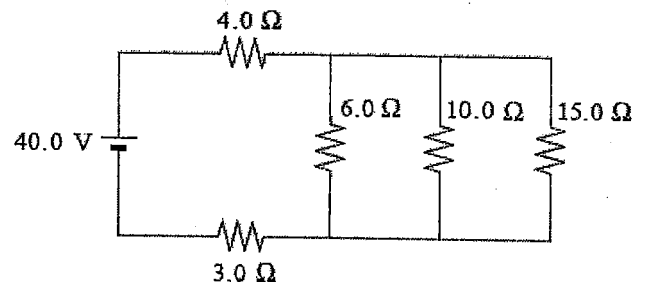
b)



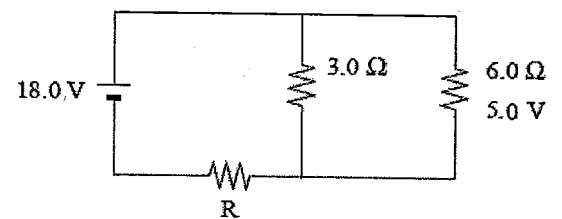
15. What is the total resistance of the circuit?  
What is the current through the  $100\ \Omega$  resistor?



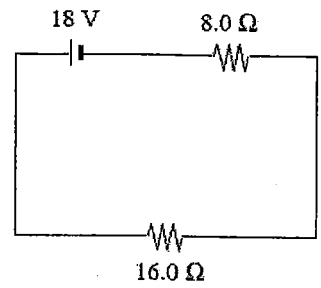
16. Calculate the current through the  $6.0\ \Omega$  resistor.



17. In the following circuit, determine the value of resistor  $R$ .



18. Calculate the power dissipated by the  $8.0\ \Omega$  resistor in the circuit.



19. What is the power dissipated by the  $3.0\ \Omega$  resistor in the circuit?

