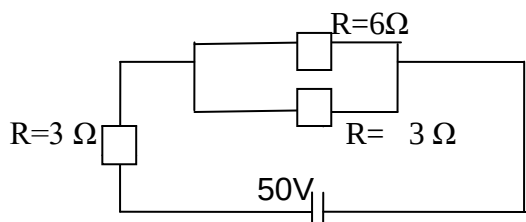
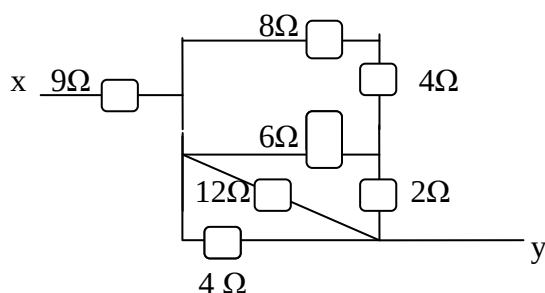


Solve the following Problems.

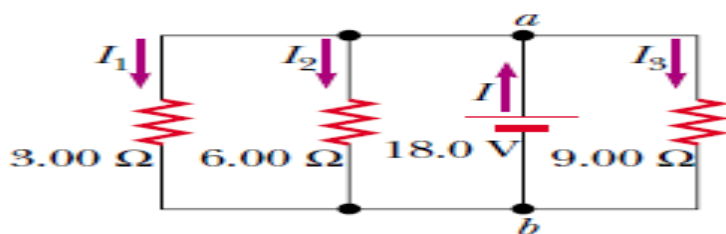
1. A battery has an emf of 12 V and an internal resistance of 0.05Ω . Its terminals are connected to a load resistance of 3Ω . Find the current in the circuit?
2. In the fig , What is the total Resistance and the total current respectively



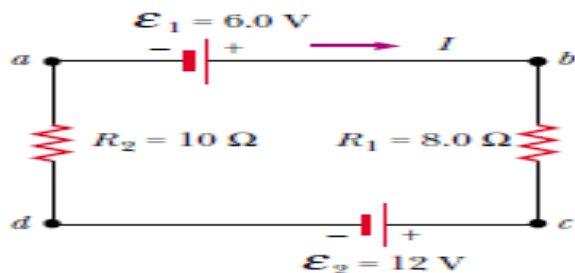
3. What is the resistance of a copper wire if it has cross-sectional area of 1cm^2 and a length of 4km. The resistivity of copper is $2 \times 10^{-8}\Omega\text{m}$.
4. What is the equivalent resistance between x and y on the fig shown below



5. Find the current in I_3 .



6. A single-loop circuit contains two resistors and two batteries, as shown in Figure below. (Neglect the internal resistances of the batteries.). Find the current in the circuit.



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7. A galvanometer of full scale deflection 5mA is to be converted into 0-10A ammeter. Its coil has resistance of 50Ω . What value of resistance must be connected in parallel with the galvanometer?
8. A current of 2A exist in a conductor of area of 2mm^2 . If there are 3.125×10^{19} electrons per cubic centimeter, calculate the drift velocity ?
9. 3Ω and 6Ω resistors are connected in parallel and this combination is connected series with a 2Ω resistor. If 12V is applied across the whole circuits determine the total resistance?
10. What are the currents I_1 , I_2 and I_3 in the circuit shown below respectively?

