1. The ==Ohm's law== states that at ==constant temperature== the current flowing through a conductor is directly proportional to the potential difference across its ends. This means that I proportional to V. To equate this we need to add a constant. This we get V=R*I. But why can't we write the same equation by adding a constant on the other side as I=R*V?

   Answer:

   We know that, $I \propto V$
   $\Rightarrow$ I= constant*V
   $\Rightarrow$ I=G*V
   Here, Conductivity = G
   $G = \frac{1}{R}$
   Thus, I= G*V

   $\Rightarrow$ $V = \frac{1}{G} * I$
   $\Rightarrow$ V= R*I

   We can write it in both ways, this constant, named as resistance when used as "$\frac{1}{G}$" in the equation mentioned above, and it is called conductance when used as "G".

2. We know, current density, J= conductivity, σ X electric field, E
   J= σ*E
   $\Rightarrow$ $E = \frac{1}{\sigma} J$
   $\Rightarrow$ E= ρ*J

   Here, ρ= Resistivity

   Tutorial Question: 1

   What were the key words I mentioned in the class while defining "Electrical Circuit"?

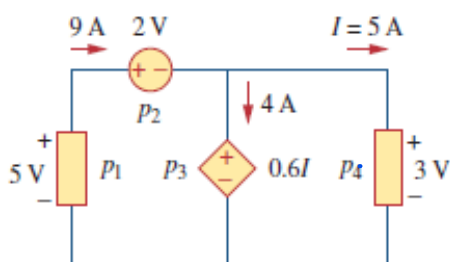   **Tutorial Question: 2**

   Why a resistor is called as a passive element?

   Tutorial Question: 3

   Calculate the amount of charge represented by six million protons.

Tutorial Question: 4

Compute the power absorbed or supplied by each component of the following circuit

Tutorial Question: 5

If an electron beam in a TV picture tube carries electrons/second and is passing through plates maintained at a potential difference of 30 kV, calculate the power in the beam.

Tutorial Question: 6

How To Calculate Electricity Bill?

Tutorial Question: 7

ELECTRICITY TARIFF RATE IN BANGLADESH

Consumer Type	Per Unit Price
01 to 75 units	**3.80 Taka**
76 to 200 units	**5.14 Taka**
201 to 300 units	**5.36 Taka**
301 to 400 units	**5.63 Taka**
401 to 600 units	**8.70 Taka**
Above 600 units	**9.98 Taka**

Appliances	Power ratings	Appliances	Power ratings
Incandescent lamp	40W – 150W	AC (1 ton)	3.517KW
CFL	6W – 30W	Refrigerator	150W – 400W
LED Bulb	4W – 25 W	Computer	100W – 250W
Fluorescent tube light	18W – 60W	Microwave	600W – 1700W
LED tube light	8W – 36W	Washing machine	300W – 500W
Table fan	30W – 70W	TV	60W – 120W

Induction motor Ceiling fan	60W – 80W	Smartphone charger	4W – 7W
Cooler	100W – 500W		

Now, suppose, you use the following appliances:

Number of appliances	Power rating in watt	Daily use in hours
4 LED bulbs	9-W each	10
2 fans	60-W each	16
1 TV	100-W	5
1 Refrigerator	200-W	10

Now, determine the electricity bill for July, 2022.