

Console

```
--> // e be the charge of an electron  $e = -1.6 \times 10^{-19} \text{C}$ 
```

```
-->
```

```
--> // q be the charge,  $q = n \cdot e$  where n is the no. of electrons
```

```
-->
```

```
--> // t is the time in seconds
```

```
-->
```

```
--> //  $i = q/t$ 
```

```
-->
```

```
--> //  $i = (n \cdot e)/t$ 
```

```
-->
```

```
-->  $e = -1.6 \times 10^{-19}$ ;
```

```
-->
```

```
--> disp("e=")
```

```
    e=
```

```
--> disp(e)
```

```
    - 1.600D-19
```

```
--> // in coulombs C
```

```
--> disp("C")
```

```
    C
```

```
-->
```

```
-->  $n = 10^{15}$ ;
```

```
-->
```

```
-->disp(n)
    1.000D+15
-->
-->
-->t=1;
-->
-->disp("t=")
    t=
-->disp(t)
    1.
-->// in seconds
-->disp("sec")
    sec
-->
-->i=(n*e)/t;
-->
-->disp("i=")
    i=
-->disp(i)
    - 0.00016
-->// in amperes A
-->disp("A")
    A
```

```
-->
```

```
-->
```

```
-->
```

```
-->// i current is -0.00016A
```

```
-->
```

```
-->// power in watts  $P=V*I$ 
```

```
-->
```

```
-->p=4;
```

```
-->
```

```
-->disp("p=")
```

```
    p=
```

```
-->disp(p)
```

```
    4.
```

```
-->// in watts W
```

```
-->disp("W")
```

```
    W
```

```
-->
```

```
-->
```

```
-->
```

```
-->v=p/i;
```

```
-->
```

```
-->disp("v=")
```

```
    v=
```

```
-->disp(v)
```

```
- 25000.
```

```
-->// in Volts V
```

```
-->disp("V")
```

```
V
```

```
-->
```

```
-->
```

```
-->// voltage needed to accelerate electron beam to 4w is 25000V
```

```
-->
```

```
-->V/1000;
```

```
-->
```

```
-->disp("V=")
```

```
V=
```

```
-->disp(V/1000)
```

```
- 25.
```

```
-->disp("KV")
```

```
KV
```

```
-->
```

```
-->
```

```
-->// V is 25Kv
```

```
-->
```