

① Worksheet

a) $100\text{w } 220\text{v} \Rightarrow I^2 R = \text{Here } I \text{ is Constant}$

b) $50\text{w } 220\text{v} \Rightarrow \frac{V^2}{R} \text{ Here } V \text{ is Constant}$

1) $P = \frac{V^2}{R}$
 $100 = \frac{(220)^2}{R}$
 $R = \frac{(220)^2}{100}$
 $R = \frac{220 \times 220}{100}$
 $R = 484 \Omega$

[$V = 220$
 $P = 100\text{w}$
 $R = ?$]

2) $P = \frac{V^2}{R}$
 $100 = \frac{(12)^2}{R}$
 $R = \frac{12 \times 12}{100}$
 $R = 144 \Omega \text{ Ans}$

[$V = 12$
 $P = 100\text{w}$
 $R = ?$]

So Resistance is 144Ω

3) $1500\text{w} = VI$
 $1500\text{w } 250\text{V}$
 $\frac{1500}{250} = I$
 $6 \text{ Amper} = I$

$$\text{the energy} = \frac{1500}{1000} \times 50$$

$$\Rightarrow 15 \times 5$$

$$\Rightarrow 75 \text{ kWh or unit}$$

$$75 \times 2.2$$

$$\Rightarrow ₹165$$