

NUMERICALS

1) An electric heater power 3 kW is used for 1 min. Find the energy supplied by the heater.

A- Given that, power $P = 3 \text{ kW}$

Time $t = 1 \text{ min} = 60 \text{ secs}$

We know that, $P = \frac{E}{T}$

T

$$E = P \times t$$

$$\Rightarrow E = 3 \times 10^3 \times 60$$

$$\Rightarrow E = 180 \times 10^3$$

$$\Rightarrow E = 18 \times 10^4 \text{ J}$$

2) A boy has to do 300 J of work in time 0.5 min to lift a luggage to the roof of a bus. How much power does he spend?

A- Given, $W = 300 \text{ J}$,

$t = 0.5 \text{ min} = 0.5 \times 60 \text{ s} = 30 \text{ s}$

$$\text{Power } P = \frac{\text{Work } W}{\text{Time } t} = \frac{300 \text{ J}}{30 \text{ s}} = 10 \text{ W}$$

$$\text{Time } t \quad 30 \text{ s}$$