

NCERT Maths Class X-Statistics Ex 14.3 - Question 5
Solutions by Dev Anoop (Bathinda)



Life Time(in hours)	Number of Lamps	Cumulative Frequency
1500-2000	14	14
2000-2500	56	70
2500-3000	60	130
3000-3500	86	216
3500-4000	74	290
4000-4500	62	352
4500-5000	48	400

Now, $n = 400$

So, $\frac{n}{2} = \frac{400}{2} = 200$

This observation lies in the class 3000 – 3500.

So, 3000 – 3500 is the median class.

Therefore, $l = 3000, h = 500, cf = 130, f = 86$

$$\begin{aligned}\therefore \text{Median} &= l + \left(\frac{\frac{n}{2} - cf}{f} \right) \times h = 3000 + \left(\frac{200 - 130}{86} \right) \\ &= 3000 + 406.98 = 3406.98 \text{ hours}\end{aligned}$$

Hence, the median life time of a lamp is 3406.98 hours.

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