

NCERT Solutions for Class 10 Maths Chapter 13 Exercise 13.4: NCERT Solutions for Class 10 Maths Chapter 13 Exercise 13.4 focuses on further understanding the concepts of statistics through the interpretation of grouped data, cumulative frequency, and the graphical representation of data.

In this exercise, students practice finding the mean, median, and mode from frequency distributions and understand their practical applications. The solutions provide clear steps for calculating the measures of central tendency, ensuring that students grasp both the formula-based and graphical methods of solving problems. By solving this exercise, students can enhance their ability to analyze data sets and interpret statistical information accurately, which is essential for academic exams.

NCERT Solutions for Class 10 Maths Chapter 13 Exercise 13.4 Overview

NCERT Solutions for Class 10 Maths Chapter 13 Exercise 13.4 focuses on calculating the mean, median, and mode for grouped data, helping students deepen their understanding of statistical analysis. The exercise guides students through the process of finding the measures of central tendency for both discrete and continuous frequency distributions.

Through this exercise, students gain proficiency in working with grouped data, learning how to interpret and analyze data effectively.

Class 10 Maths Chapter 13 Exercise 13.4 Questions and Answers PDF

The Class 10 Maths Chapter 13 Exercise 13.4 Questions and Answers PDF provides a detailed and structured approach to solving problems related to the mean, median, and mode for grouped data. It includes step-by-step solutions for all the questions, ensuring that students understand how to apply the appropriate formulas for each statistical measure.

By solving the solutions in the PDF, students can easily grasp the concepts and practice calculating these measures from frequency distributions. The PDF are a valuable resource for exam preparation and for mastering the techniques required for data analysis. You can access the PDF through the link provided below for a comprehensive learning experience.

Class 10 Maths Chapter 13 Exercise 13.4 Questions and Answers PDF

NCERT Class 10 Maths Chapter 13 Statistics Exercise 13.4

Below is the NCERT Class 10 Maths Chapter 13 Statistics Exercise 13.4:

Solve the followings Questions.

1. The following distribution gives the daily income of 50 workers of a factory:

Daily income (in ₹)	No. of workers
100 – 120	12
120 – 140	14
140 – 160	8
160 – 180	6
180 – 200	10

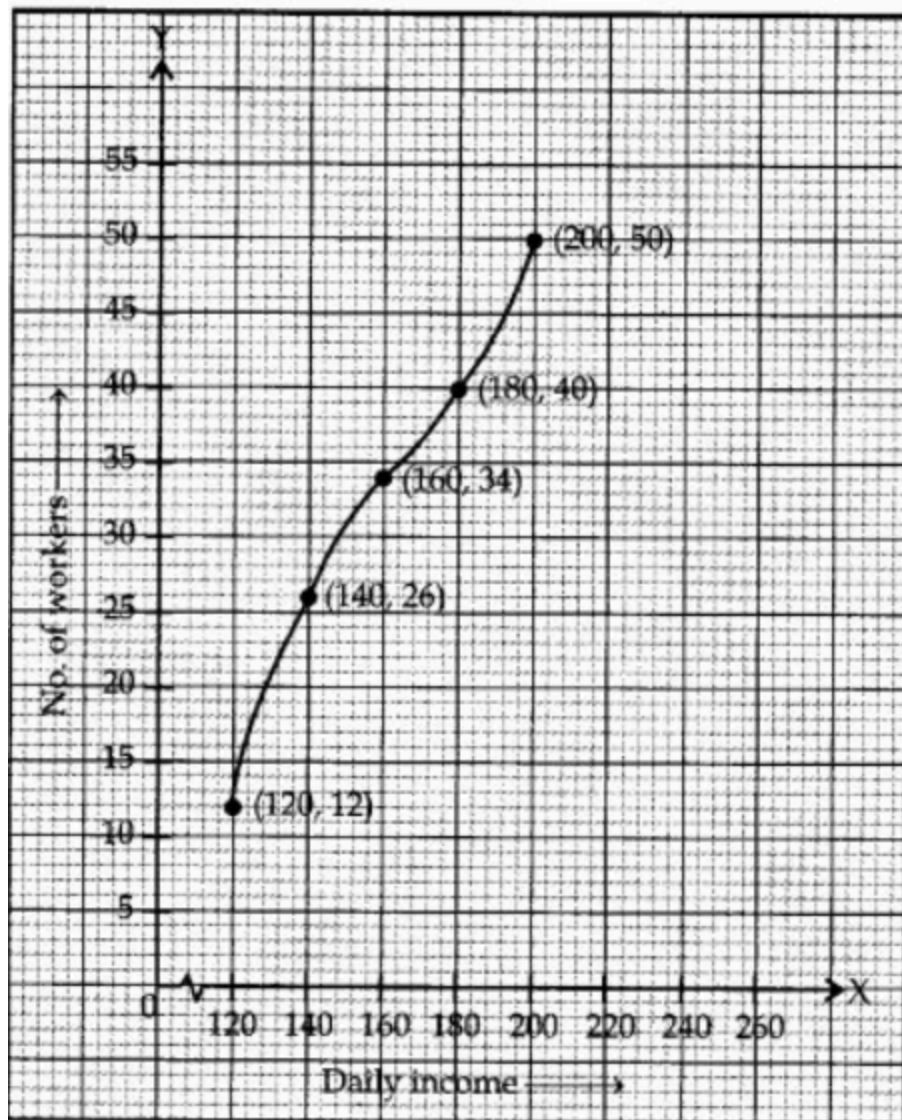
Convert the distribution above to a less than type cumulative frequency distribution and draw its ogive.

Answer:

Daily income (in ₹)	No. of workers	Cumulative frequency
Less than 120	12	12
Less than 140	14	26
Less than 160	8	34
Less than 180	6	40
Less than 200	10	50
	$n = 50$	

Now, by drawing the points on the graph,

i.e., (120, 12); (140, 26); (160, 34); (180, 40); (200, 50)



2. During the medical checkup of 35 students of a class, their weights were recorded as follows:

Weight (in kg)	Number of students
Less than 38	0
Less than 40	3
Less than 42	5
Less than 44	9
Less than 46	14
Less than 48	28
Less than 50	32
Less than 52	35

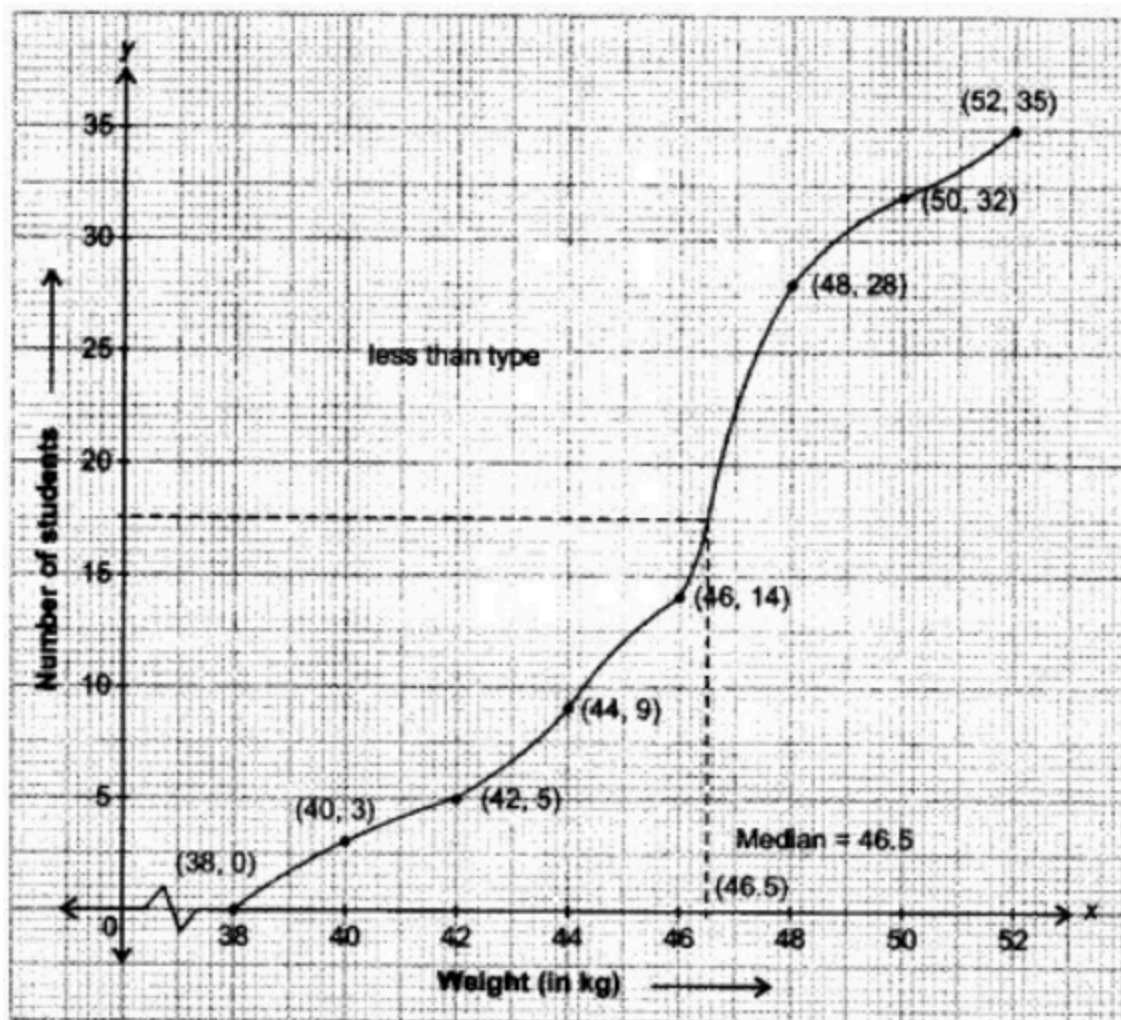
Draw a less than type ogive for the given data. Hence obtain the median weight from the graph and verify the result by using the formula.

Answer:

Weight in (kg)	Number of students
less than 38	0
less than 40	3
less than 42	5
less than 44	9
less than 46	14
less than 48	28
less than 50	32
less than 52	35

Hence, the points for graph are:

(38, 0), (40, 3), (42, 5), (44, 9), (46, 14), (48, 28), (50, 32), (52, 35)



Median by formula:

Class interval	Frequency	<i>cf</i>
Below 38	0	0
38 – 40	3	3
40 – 42	2	5
42 – 44	4	9
44 – 46	5	14
46 – 48	14	28
48 – 50	4	32
50 – 52	3	35

$$n = 35 \quad \text{So, } \frac{n}{2} = \frac{35}{2} = 17.5$$

Now, Median class is 46 – 48, so, $l = 46$, $cf = 14$, $f = 14$, $h = 2$.

$$\text{Median} = l + \left(\frac{\frac{n}{2} - cf}{f} \right) \times h$$

l = Lower limit of class, n = number of observations.

cf = Cumulative frequency of class preceding the median class.

f = Frequency of median class.

h = Class size.

$$\text{Median} = 46 + \left(\frac{17.5 - 14}{14} \right) \times 2 = 46 + \frac{3.5}{14} \times 2 = 46 + \frac{35}{14} \times \frac{2}{10} = 46 + 0.5 = 46.5$$

3. The following table gives production yield per hectare of wheat of 100 farms of a village.

Production yield (in kg/ha)	No. of farms
50 – 55	2
55 – 60	8
60 – 65	12
65 – 70	24
70 – 75	38
75 – 80	16

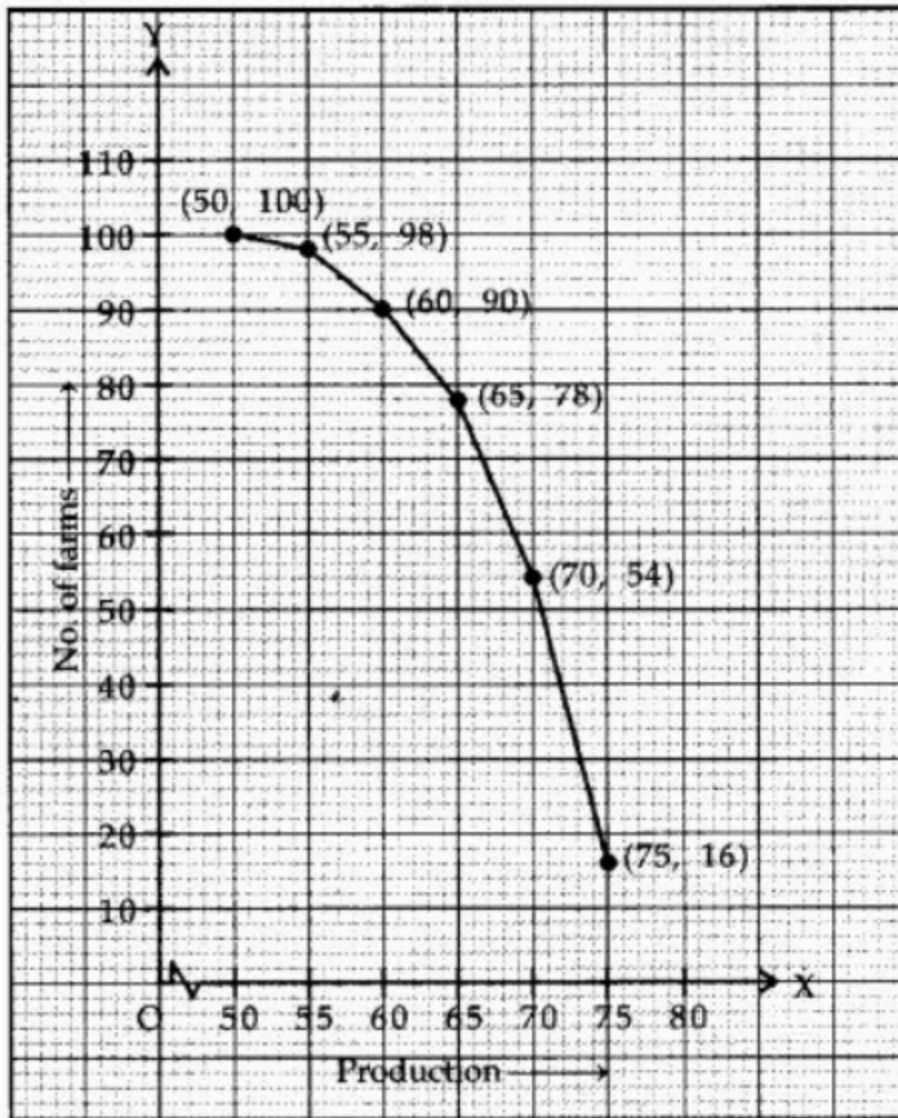
Change the distribution to a more than type distribution and draw its ogive.

Answer:

Production yield (in kg/ha)	No. of farms (frequency)	Cumulative frequency
More than or equal to 50	2	100
More than or equal to 55	8	$100 - 2 = 98$
More than or equal to 60	12	$98 - 8 = 90$
More than or equal to 65	24	$90 - 12 = 78$
More than or equal to 70	38	$78 - 24 = 54$
More than or equal to 75	16	$54 - 38 = 16$
	$n = 100$	

The points for the graph are:

(50, 100), (55, 98), (60, 90), (65, 78), (70, 54), (75, 16)



Benefits of Solving NCERT Solutions for Class 10 Maths Chapter 13 Exercise 13.4

- **Strengthens Understanding of Central Tendency:** Solving this exercise helps students gain a solid understanding of how to calculate the mean, median, and mode for grouped data, which are fundamental concepts in statistics.
- **Improves Problem-Solving Skills:** By practicing the problems in this exercise, students become more adept at applying the relevant formulas and techniques, allowing them to approach similar problems with ease and accuracy.
- **Prepares for Exams:** This exercise covers essential topics that are frequently tested in board exams. Regular practice improves speed and accuracy, making students better prepared for exam questions related to data handling and analysis.

- **Clarifies Conceptual Understanding:** The step-by-step approach in the solutions helps students clarify any doubts about calculating mean, median, and mode, enhancing their conceptual understanding of the topic.
- **Time Management and Efficiency:** Regular practice of these problems helps students develop efficient methods for solving questions quickly, which is especially useful for managing time during exams.