RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.5: RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.5 focus on teaching students about measures of central tendency, including mean, median, and mode for grouped data.

These solutions, prepared by subject experts, provide clear explanations and detailed methods for calculating these measures. By practicing these exercises, students can enhance their understanding of how to interpret and analyze data sets using statistical measures.

RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.5 Overview

The RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.5 were created by experts from Physics Wallah. They explain these concepts clearly, step by step. By using these solutions, students can get better at analyzing and interpreting data sets.

These solutions are made to be easy to understand and are helpful for preparing for exams where these statistical measures are important.

RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.5 PDF

You can find the PDF link for RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.5 below.

It explains clearly how to calculate measures like mean, median, and mode for grouped data. Using this PDF will help you understand these concepts better and improve your skills in analyzing data. It's a useful resource for preparing for exams where these statistical measures are important.

RS Aggarwal Solutions for Class 10 Maths Chapter 9 Mean Median Mode Of Grouped Data Cumulative Frequency Graph And Ogive Exercise 9.5

Here we have provided RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.5 for the ease of students so that they can prepare better for their exams.

Q. Find the median of the following data by making a 'less than ogive'.

Marks	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70
Number of students	5	3	4	3	3	4	7

Solution:

To find median class,

Assume $\Sigma f_i = N$ = Sum of frequencies,

f_i = frequency

and C_f = cumulative frequency

Lets form a table.

AGE(years)	NUMBER OF PATIENTS(f_i)	C_f
0 - 10	4	4
10 - 20	4	4 + 4 = 8
20 - 30	8	8 + 8 = 16
30 - 40	10	16 + 10 = 26
40 - 50	12	26 + 12 = 38
50 - 60	8	38 + 8 = 46

So, N = 50

⇒ N/2 = 50/2 = 25

The cumulative frequency just greater than (N/2 =) 25 is 26, so the corresponding median class is 30 - 40.

Hence, median class = 30 - 40

Q. The given distribution shows the number of wickets taken by the bowlers in one-day international cricket matches:

Number of wickets	Less than 15	Less than 30	Less than 45	Less than 60	Less than
Number of bowlers	2	5	9	17	39

Draw a 'less than type' ogive from the above data.Find the median.

Here, the maximum class frequency is 27.
The class corresponding to this frequency is the modal class. ⇒
modal class = 40 - 50
∴ lower limit of the modal class (l) = 40

Q. Draw a 'more than' ogive for the data given below which gives the marks of 100 students.

Number of wickets	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70	70
Number of students	4	6	10	10	25	22	18	

Solution:

Here, the maximum class frequency is 30.

The class corresponding to this frequency is the modal class. ⇒

modal class = 150 - 200

∴ lower limit of the modal class (l) = 150

The class mark is found by,

$$\frac{150 + 200}{2} = \frac{350}{2} = 175$$

∴ Class mark is 175.

Q. The heights of 50 girls of Class X of a school are recorded as follows:

Height(in cm)	135 – 140	140 – 145	145 – 150	150 – 155	155 – 160	160 – 165
Number of gilrs	5	8	9	12	14	2

Draw a 'more than type' ogive for the above data.

Solution:

Since we have 25 observations, that is odd number of observations, median is found at $\left(\frac{n+1}{2}\right)^{th}$ position.

So since, n = 25

⇒ Median will be found at $\left(\frac{25+1}{2}\right)^{th}$ position. ⇒ Median = 13^{th} observation

Q. The monthly consumption of electricity (in units) of some families of a locality is given in the follwoing frequency distribution.

Monthly consumption(in units)	140 – 160	160 – 180	180 – 200	200 – 240	220 – 240
Number of families	3	8	15	40	50

Prepare a 'more than type'ogive for the given frequency distribution:

Solution:

Given: mode = 1000 and median = 1250

The empirical relationship between mean, median and mode is,

Mode = 3(Median) – 2(Mean)

⇒ 2(Mean) = 3(Median) – Mode

⇒ Mean = [3(Median) – Mode]/2

⇒ Mean = [3(1250) – 1000]/2

⇒ Mean = [3750 – 1000]/2 = 2750/2 = 1375

∴ mean = 1375

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

Production yield(kg/ha)	50 – 55	55 – 60	60 – 65	65 – 70	70 – 75	75 – 80
Number of farms	2	8	12	24	38	16

Change the distribution to a 'more than type' distribution and draw its ogive.Using ogive, find the median of the given data.

Here, the maximum class frequency is 25.
The class corresponding to this frequency is the modal class. ⇒
modal class
= 40 - 60
To find median class,
Assume Σfi = N = Sum of frequencies,
fi = frequency
and Cf = cumulative frequency

So, N = 50
⇒ N/2 = 50/2 = 25
The cumulative frequency just greater than (N/2 =) 25 is 35, so the corresponding median class is 40 - 60.
∴ modal class = 40 - 60 and median class = 40 - 60

Q. The table given below shows the weekly expenditures on food of some households in a locality.

Weekly expenditure(in Rs.)	Number of households
100 – 200	5
200 – 300	6
300 – 400	11
400 – 500	13
500 – 600	5
600 – 700	4
700 – 800	3
800 – 900	2

Draw a 'less than type ogive' and a 'more than type ogive' for this distribution.

Solution:

Class mark is given by $\frac{\text{Upper limit + Lower limit}}{2}$

Class mark of class 10 - 25 = $\frac{10+25}{2} = \frac{35}{2} = 17.5$

Class mark of class 35 - 55 = $\frac{35+55}{2} = \frac{90}{2} = 45$

∴ Class mark of class 10 - 25 is 17.5 and 35 - 55 is 45.

Q. From the following frequency distribution, prepare the 'more than' ogive.

Score	Number of candidates
400 – 450	2
450 – 500	35
500 – 550	40
550 – 600	32
600 – 650	24
650 – 700	27
700 – 750	18
750 – 800	34
Total	212

Solution:

Class mark is given by $\frac{\text{Upper limit + Lower limit}}{2}$

Class mark of class 10 - 25 $= \frac{10+25}{2} = \frac{35}{2} = 17.5$

Class mark of class 35 - 55 $= \frac{35+55}{2} = \frac{90}{2} = 45$

$\therefore$ Class mark of class 10 - 25 is 17.5 and 35 - 55 is 45.

Q. The marks obtained by 100 students of a class in an examination are given below:

Marks	Number of students
0 – 5	2
5 – 10	5
10 – 15	6
15 – 20	8
20 – 25	10
25 – 30	25
30 – 35	20
35 – 40	18
40 – 45	4
45 – 50	2

Draw cumulative frequency curves by using (i) 'less than's series and (ii) 'more than' series.

Hence, find the median.

We have got
A = 25, Σfi = 50 & Σfidi = 110

∵ By Assumed - mean method, mean is given by
$\bar{x} = A + \sum fi\, id \sum fi\, i$
$\Rightarrow \bar{x} = 25 + 110$

50
$\Rightarrow \bar{x} = 27.2$
Thus, mean is 27.2

Q. From the following data, draw the two types of cumulative frequency curves and determine the median.

Height(in cm)	Frequency
140 – 144	3
144 – 148	9
148 – 152	24
152 – 156	31
156 – 160	42
160 – 164	64
164 – 168	75
168 – 172	82
172 – 176	86
176 – 180	34

Solution:

According to the question,

$4 = \frac{X}{36}$ and $3 = \frac{Y}{64}$

$\Rightarrow X = 36 \times 4 = 144$ and $Y = 64 \times 3 = 192$

We have, $X = 144$ and $Y = 192$

Mean of distribution $(X + Y = 144 + 192 =)$ 336 is,

Mean = 336/(36 + 64) = 336/100 = 3.36

Hence, mean = 3.36

Benefits of RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.5

- **Clear Explanation:** The solutions provide clear explanations and step-by-step methods for calculating measures of central tendency like mean, median, and mode for grouped data, making it easier for students to understand these statistical concepts.
- **Comprehensive Practice:** By practicing these solutions, students gain proficiency in applying statistical measures to real-world data sets, enhancing their analytical skills.
- **Conceptual Clarity:** Students develop a deeper understanding of how to interpret and analyze data using measures of central tendency, which are fundamental in statistics.

- **Expert Guidance:** Prepared by subject experts from Physics Wallah, these solutions ensure accuracy and reliability, providing students with reliable guidance in mastering statistical concepts.