

RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.3: The RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.3 provide detailed explanations and step-by-step solutions to problems involving the cumulative frequency distribution and its graphical representation.

These solutions prepared by subject experts at Physics Wallah, help students understand how to construct and interpret cumulative frequency curves (ogives). By practicing these exercises, students can enhance their ability to analyze and interpret data trends effectively.

RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.3 Overview

The RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.3 prepared by subject experts from Physics Wallah provide clear and simple explanations of cumulative frequency distribution and its graphs.

These solutions help students learn how to create and understand cumulative frequency curves (ogives). By practicing these exercises, students can improve their skills in analyzing and interpreting data.

RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.3 PDF

The PDF link for RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.3 is available below. This PDF contains solutions prepared by subject experts at Physics Wallah provide clear and simple explanations for problems related to cumulative frequency distribution and its graphical representation.

[RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.3 PDF](#)

RS Aggarwal Solutions for Class 10 Maths Chapter 9 Mean Median Mode Of Grouped Data Cumulative Frequency Graph And Ogive Exercise 9.3

Here we have provided RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.3 for the ease of students so that they can prepare better for their exams.

Q. Find the mode of the following frequency distribution:

Marks	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60
Frequency	12	35	45	25	13

Solution:

Here, the maximum class frequency is 45.

The class corresponding to this frequency is the modal class. \Rightarrow

modal class = 30 - 40

\therefore lower limit of the modal class (l) = 30

Modal class size (h) = 10

Frequency of the modal class (f_1) = 45

Frequency of class preceding the modal class (f_0) = 35

Frequency of class succeeding the modal (f_2) = 25

Mode is given by,

Mode = $l +$ (

$f_1 - f_0$

$2f_1 - f_0 - f_2$

) $\times h$

\Rightarrow Mode = $30 +$ (

$45 - 35$

$2(45) - 35 - 25$) $\times 10$

\Rightarrow Mode = $30 +$ (

10

30) $\times 10$

\Rightarrow Mode = $30 + 3.33 = 33.33$

Hence, the mode is 33.33

Q. Compute the mode of the following data:

Class	0 - 20	20 - 40	40 - 60	60 - 80	80 - 100
Frequency	25	16	28	20	5

Solution:

Here, the maximum class frequency is 28.

The class corresponding to this frequency is the modal class. \Rightarrow

modal class = 40 - 60

\therefore lower limit of the modal class (l) = 40

Modal class size (h) = 20

Frequency of the modal class (f₁) = 28

Frequency of class preceding the modal class (f₀) = 16

Frequency of class succeeding the modal (f₂) = 20

Mode is given by,

Mode = l + (

f₁ - f₀

2f₁ - f₀ - f₂

) × h

⇒ Mode = 40 + (

28-16

2(28)-16-20) × 20

⇒ Mode = 40 + (

12

20) × 20

⇒ Mode = 40 + 12 = 56

Hence, the mode is 56.

Q. Heights of students of Class X are given in the following frequency distribution :

Marks	150 - 155	155 - 160	160 - 165	165 - 170	170 - 175
Number of students	15	8	20	12	5

Find the modal height.

Also, find the mean height. Compare and interpret the two measures of central tendency.

Solution:

Here, the maximum class frequency is 20.

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

modal class = 160 - 165

∴ lower limit of the modal class (l) = 160

Modal class size (h) = 5

Frequency of the modal class (f₁) = 20

Frequency of class preceding the modal class (f₀) = 8

Frequency of class succeeding the modal (f₂) = 12

Mode is given by,

Mode = l + (f₁ - f₀ / 2f₁ - f₀ - f₂) × h

$$\Rightarrow \text{Mode} = 160 + \left(\frac{20-8}{2(20)-8-12} \right) \times 5$$

$$\Rightarrow \text{Mode} = 160 + \left(\frac{12}{20} \right) \times 5$$

$$\Rightarrow \text{Mode} = 160 + 3 = 163$$

Hence, the mode is 163 cm.

Mode represents frequency, hence 163 cm is the height of maximum number of students.

To find the mean, we will solve by using direct method.

HEIGHT (cm)	MID - POINT(x_i)	NUMBER OF STUDENTS(f_i)	$f_i x_i$
150 - 155	152.5	15	2287.5
155 - 160	157.5	8	1260
160 - 165	162.5	20	3250
165 - 170	167.5	12	2010
170 - 175	172.5	5	862.5
TOTAL		60	9670

We have got

$$\Sigma f_i = 60 \text{ \& \; } \Sigma f_i x_i = 9670$$

\therefore mean is given by

$$\bar{x} = \frac{\Sigma f_i x_i}{\Sigma f_i}$$

$$\Rightarrow \bar{x} = \frac{9670}{60}$$

Q. Find the mode of the following distribution:

Class interval	10 - 14	14 - 18	18 - 22	22 - 26	26 - 30	30 - 34	34 - 38	38 - 42
Frequency	8	6	11	20	25	22	10	4

Solution:

Here, the maximum class frequency is 25.

The class corresponding to this frequency is the modal class. \Rightarrow
modal class = 26 - 30

\therefore lower limit of the modal class (l) = 26

Modal class size (h) = 4

Frequency of the modal class (f_1) = 25

Frequency of class preceding the modal class (f_0) = 20

Frequency of class succeeding the modal (f_2) = 22

Mode is given by,

$$\text{Mode} = l + \left(\frac{f_1 - f_0}{2f_1 - f_0 - f_2} \right) \times h$$

$$\Rightarrow \text{Mode} = 26 + \left(\frac{25 - 20}{2(25) - 20 - 22} \right) \times 4$$

$$\Rightarrow \text{Mode} = 26 + (58) \times 4$$

$$\Rightarrow \text{Mode} = 26 + 2.5 = 28.5$$

Hence, the mode is 28.5.

Q. Given below is the distribution of total household expenditure of 200 manual workers in a city.

Expenditure (in Rs.)	No. of manual workers
1000 - 1500	24
1500 - 2000	40
2000 - 2500	31
2500 - 3000	28
3000 - 3500	32
3500 - 4000	23
4000 - 4500	17
4500 - 5000	5

Find the expenditure done by maximum number of manual workers.

Expenditure done by maximum number of manual workers is estimated by finding mode.

So here, the maximum class frequency is 40.

The class corresponding to this frequency is the modal class. \Rightarrow

modal class = 1500 - 2000

\therefore lower limit of the modal class (l) = 1500

Modal class size (h) = 500

Frequency of the modal class (f_1) = 40

Frequency of class preceding the modal class (f_0) = 24

Frequency of class succeeding the modal (f_2) = 31

Mode is given by,

$$\text{Mode} = l + \left(\frac{f_1 - f_0}{2f_1 - f_0 - f_2} \right) \times h$$

$$\Rightarrow \text{Mode} = 1500 + \left(\frac{40 - 24}{2(40) - 24 - 31} \right) \times 500$$

$$\Rightarrow \text{Mode} = 1500 + \left(\frac{16}{25} \right) \times 500$$

$$\Rightarrow \text{Mode} = 1500 + 320 = 1820$$

Hence, the mode is Rs.1820.

Q. Calculate the mode from the following data:

Monthly salary(in Rs.)	No. of employees
0 - 5000	90
5000 - 10000	150
10000 - 15000	100
15000 - 20000	80
20000 - 25000	70
25000 - 30000	10

Solution:

Here, the maximum class frequency is 150.

The class corresponding to this frequency is the modal class. \Rightarrow

modal class = 5000 - 10000

\therefore lower limit of the modal class (l) = 5000

Modal class size (h) = 5000

Frequency of the modal class (f_1) = 150

Frequency of class preceding the modal class (f_0) = 90

Frequency of class succeeding the modal (f_2) = 100

Mode is given by,

$$\text{Mode} = l + \left(\frac{f_1 - f_0}{2f_1 - f_0 - f_2} \right) \times h$$

$$\Rightarrow \text{Mode} = 5000 + \left(\frac{150-90}{2(150)-90-100} \right) \times 5000$$

$$\Rightarrow \text{Mode} = 5000 + \left(\frac{60}{110} \right) \times 5000$$

$$\Rightarrow \text{Mode} = 5000 + 2727.27 = 7727.27$$

Hence, the mode is Rs.7727.27.

Q. Compute the mode from the following data:

Age(in years)	0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35
Number of patients	6	11	18	24	17	13	5

Solution:

Here, the maximum class frequency is 24.

The class corresponding to this frequency is the modal class. \Rightarrow
modal class = 15 - 20

\therefore lower limit of the modal class (l) = 15

Modal class size (h) = 5

Frequency of the modal class (f_1) = 24

Frequency of class preceding the modal class (f_0) = 18

Frequency of class succeeding the modal (f_2) = 17

Mode is given by,

$$\text{Mode} = l + \left(\frac{f_1 - f_0}{2f_1 - f_0 - f_2} \right) \times h$$

$$\Rightarrow \text{Mode} = 15 + \left(\frac{24 - 18}{2(24) - 18 - 17} \right) \times 5$$

$$\Rightarrow \text{Mode} = 15 + \left(\frac{6}{13} \right) \times 5$$

$$\Rightarrow \text{Mode} = 15 + 2.30 = 17.30$$

Hence, the mode is 17.30 years.

Benefits of RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.3

- **Clear Explanations:** The solutions provide clear explanations and step-by-step methods to help students understand cumulative frequency distribution and ogive graphs.
- **Expert Guidance:** Prepared by subject experts from Physics Wallah, these solutions ensure accuracy and reliability in learning the topic.
- **Graphical Representation Skills:** Students learn how to construct and interpret cumulative frequency curves (ogives), improving their ability to visualize and analyze data.

- **Enhanced Problem-Solving:** By practicing these solutions, students can develop strong problem-solving skills, crucial for exams and real-life applications.
- **Comprehensive Practice:** The exercises provide ample practice opportunities, reinforcing understanding and confidence in applying cumulative frequency concepts.