

RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.2: RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.2 provide detailed explanations to help students solve problems related to cumulative frequency distribution and drawing ogive curves.

By working through these exercises, students can improve their ability to create cumulative frequency tables and graphs, which are important for analyzing data. These solutions are a great resource for students to practice and prepare for their math exams effectively.

RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.2 Overview

The RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.2 have been prepared by subject experts from Physics Wallah. These solutions provide clear and detailed explanations for solving problems related to cumulative frequency distribution and drawing ogive curves.

By practicing these exercises students can improve their skills and confidence making these solutions a valuable resource for exam preparation.

RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.2 PDF

The PDF link for RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.2 is available below. This PDF provides detailed solutions to problems involving cumulative frequency distribution and ogive curves, prepared by subject experts from Physics Wallah.

By accessing this PDF, students can practice and improve their skills in data representation and analysis making it a valuable resource for their exam preparation.

[RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.2 PDF](#)

RS Aggarwal Solutions for Class 10 Maths Chapter 9 Mean Median Mode Of Grouped Data Cumulative Frequency Graph And Ogive Exercise 9.2

Here we have provided RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.2 for the ease of students so that they can prepare better for their exams.

Q. In a hospital, the ages of diabetic patients were recorded as follows. Find the median age.

Age (in years)	0 – 15	15 – 30	30 – 45	45 – 60	60 – 75
Numbers of patients	5	20	40	50	25

Solution:

To find median,

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

h = length of median class,

l = lower boundary of the median class,

f = frequency of median class

and C_r = cumulative frequency

Lets form a table.

AGE(years)	NUMBER OF PATIENTS(f_i)	C_r
0 - 15	5	5
15 - 30	20	$5 + 20 = 25$
30 - 45	40	$25 + 40 = 65$

45 - 60	50	65 + 50 = 115
60 - 75	25	115 + 25 = 140
TOTAL	140	

So, $N = 140$

$$\Rightarrow N/2 = 140/2 = 70$$

The cumulative frequency just greater than ($N/2 =$) 70 is 115, so the corresponding median class is 45 - 60 and accordingly we get $C_f = 65$ (cumulative frequency before the median class).

Now, since median class is 45 - 60.

$$\therefore l = 45, h = 15, f = 50, N/2 = 70 \text{ and } C_f = 65$$

Median is given by,

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

$$\Rightarrow \text{Median} = 45 + \left(\frac{70 - 65}{50} \right) \times 15$$

$$= 45 + 1.5$$

$$= 46.5$$

Thus, median age is 46.5 years.

Q. Compute the median from the following data:

Marks	0 - 7	7 - 14	14 - 21	21 - 28	28 - 35	35 - 42	42 - 49
Numbers of students	3	4	7	11	0	16	9

Solution:

To find median,
Assume $\Sigma f_i = N =$ Sum of frequencies,
 h = length of median class,
 l = lower boundary of the median class,
 f = frequency of median class
and C_f = cumulative frequency
Let's form a table.

MARKS	NUMBER OF STUDENTS(f_i)	C_f
0 - 7	3	3
7 - 14	4	$3 + 4 = 7$
14 - 21	7	$7 + 7 = 14$
21 - 28	11	$14 + 11 = 25$
28 - 35	0	$25 + 0 = 25$
35 - 42	16	$25 + 16 = 41$

42 - 49	9	41 + 9 = 50
TOTAL	50	

So, $N = 50$

$$\Rightarrow N/2 = 50/2 = 25$$

The cumulative frequency just greater than ($N/2 =$) 25 is 41, so the corresponding median class is 35 - 42 and accordingly we get $C_f = 25$ (cumulative frequency before the median class).

Now, since median class is 35 - 42.

$$\therefore l = 35, h = 7, f = 16, N/2 = 25 \text{ and } C_f = 25$$

Median is given by,

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

$$\Rightarrow \text{Median} = 35 + \left(\frac{25 - 25}{16} \right) \times 7$$

$$= 35 + 0$$

$$= 35$$

Thus, median marks are 35.

Q. The following table shows the daily wages of workers in a factory:

Daily eages (in Rs)	0 - 100	100 - 200	200 - 300	300 - 400	400 - 500
Number of workers	40	32	48	22	8

Find the median daily wage income of the workers.

Solution:

To find median,

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

h = length of median class,

l = lower boundary of the median class,

f = frequency of median class

and C_f = cumulative frequency

Lets form a table.

DAILY WAGES(Rs.)	NUMBER OF WORKERS(f_i)	C_f
0 - 100	40	40
100 - 200	32	$40 + 32 = 72$
200 - 300	48	$72 + 48 = 120$
300 - 400	22	$120 + 22 = 142$
400 - 500	8	$142 + 8 = 150$
TOTAL	150	

So, $N = 150$

$$\Rightarrow N/2 = 150/2 = 75$$

The cumulative frequency just greater than ($N/2 =$) 75 is 120, so the corresponding median class is 200 - 300 and accordingly we get $C_f = 72$ (cumulative frequency before the median class).

Now, since median class is 200 - 300.

$$\therefore l = 200, h = 100, f = 48, N/2 = 75 \text{ and } C_f = 72$$

Median is given by,

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

N

2

$- C_f$

f

$) \times h$

$$\Rightarrow \text{Median} = 200 + \left(\frac{150}{2} - 72 \right) \times \frac{100}{48}$$

75-72

$48) \times 100$

$= 200 + 6.25$

$= 206.25$

Thus, median wage is Rs. 206.25.

Q. Calculate the median from the following frequency distribution:

Class	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45
Frequency	5	6	15	10	5	4	2	2

To find median, Assume

$\Sigma fi = N =$ Sum of frequencies,

l = lower boundary of the median class,

f = frequency of median class

and Cf = cumulative frequency

Lets form a table.

CLASS	FREQUENCY(f_i)	C_r
5 - 10	5	5
10 - 15	6	$5 + 6 = 11$
15 - 20	15	$11 + 15 = 26$
20 - 25	10	$26 + 10 = 36$
25 - 30	5	$36 + 5 = 41$
30 - 35	4	$41 + 4 = 45$
35 - 40	2	$45 + 2 = 47$
40 - 45	2	$47 + 2 = 49$
TOTAL	49	

So, $N = 49$

$$\Rightarrow N/2 = 49/2 = 24.5$$

The cumulative frequency just greater than ($N/2 =$) 24.5 is 26,
so the corresponding median class is 15 - 20 and accordingly we
get $C_r = 11$ (cumulative frequency before the median class).

Now, since median class is 15 - 20.

$\therefore l = 15, h = 5, f = 15, N/2 = 24.5$ and $C_f = 11$

Median is given by,

Median = $l + \left(\frac{N}{2} - C_f \right) \times \frac{h}{f}$

$\Rightarrow \text{Median} = 15 + \left(\frac{24.5 - 11}{15} \right) \times 5$

$= 15 + 4.5$

$= 19.5$

Thus, median is 19.5.

Q. Given below is the number of units of electricity consumed in a week in a certain locality:

Consumption (in units)	65 – 85	85 – 105	105 – 125	125 – 145	145 – 165	165 – 185	185 – 205
Number of consumers	4	5	13	20	14	7	4

Calculate the median.

To find median, Assume

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

h = length of median class,

l = lower boundary of the median class,

f = frequency of median class

and C_f = cumulative frequency

Lets form a table.

CONSUMPTION (unit)	NUMBER OF CONSUMERS(f_i)	C_f
65 - 85	4	4
85 - 105	5	$4 + 5 = 9$
105 - 125	13	$9 + 13 = 22$
125 - 145	20	$22 + 20 = 42$
145 - 165	14	$42 + 14 = 56$
165 - 185	7	$56 + 7 = 63$
185 - 205	4	$63 + 4 = 67$
TOTAL	67	

So, $N = 67$

$$\Rightarrow N/2 = 67/2 = 33.5$$

The cumulative frequency just greater than $(N/2 =)$ 33.5 is 42,
so the corresponding median class is 125 - 145 and accordingly
we get $C_f = 22$ (cumulative frequency before the median class).

Now, since median class is 125 - 145.

$\therefore l = 125, h = 20, f = 20, N/2 = 33.5$ and $Cf = 22$

Median is given by,

Median = $l + \left(\frac{N}{2} - Cf \right) \times \frac{h}{f}$

$\Rightarrow \text{Median} = 125 + \left(\frac{33.5 - 22}{20} \right) \times 20$

$= 125 + 11.5$

$= 136.5$

Thus, median is 136.5.

Q. Calculate the median from the following data:

Height (in cm)	135 – 140	140 – 145	145 – 150	150 – 155	155 – 160	160 – 165	165 – 170
No. of boys	6	10	18	22	20	15	6

To find median, Assume

$\Sigma fi = N =$ Sum of frequencies,

$h =$ length of median class,

$l =$ lower boundary of the median class,

$f =$ frequency of median class

and $Cf =$ cumulative frequency

Lets form a table.

HEIGHT(cm)	NUMBER OF BOYS(f_i)	C_f
135 - 140	6	6
140 - 145	10	$6 + 10 = 16$
145 - 150	18	$16 + 18 = 34$
150 - 155	22	$34 + 22 = 56$
155 - 160	20	$56 + 20 = 76$
160 - 165	15	$76 + 15 = 91$
165 - 170	6	$91 + 6 = 97$
170 - 175	3	$97 + 3 = 100$
TOTAL	100	

So, $N = 100$

$$\Rightarrow N/2 = 100/2 = 50$$

The cumulative frequency just greater than ($N/2 =$) 50 is 56, so the corresponding median class is 150 - 155 and accordingly we get $C_f = 34$ (cumulative frequency before the median class).

Now, since median class is 150 - 155.

$$\therefore l = 150, h = 5, f = 22, N/2 = 50 \text{ and } C_f = 34$$

Median is given by,

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

$$\Rightarrow \text{Median} = 150 + \left(\frac{50-34}{22} \right) \times 5$$

$$= 150 + 3.636$$

$$= 153.64$$

Thus, median is 153.64 cm.

Q. Calculate the missing frequency from the following distribution, it being given that the median of the distribution is 24.

Class	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
Frequency	5	25	?	18	7

Median(given) = 24, Assume

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

h = length of median class,

l = lower boundary of the median class,

f = frequency of median class

and C_f = cumulative frequency

Lets form a table, where x is the unknown frequency.

0 - 10	5	5
10 - 20	25	5 + 25 = 30
20 - 30	x	30 + x
30 - 40	18	30 + x + 18 = 48 + x
40 - 50	7	48 + x + 7 = 55 + x
TOTAL	55 + x	

Median = 24 (as already mentioned in the question)

24 lies between 20 - 30 $\Rightarrow$ Median class = 20 - 30

$\therefore l = 20, h = 10, f = x, N/2 = (55 + x)/2$ and $C_f = 30$

Median is given by,

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

$$\Rightarrow 24 = 20 + \left(\frac{\frac{55+x}{2} - 30}{x} \right) \times 10$$

$$\Rightarrow 24 = 20 + \left(\frac{55+x-60}{2x} \right) \times 10$$

$$\Rightarrow 24 - 20 = (10x - 50)/2x$$

$$\Rightarrow (4)(2x) = 10x - 50$$

$$\Rightarrow 8x = 10x - 50$$

$$\Rightarrow 10x - 8x = 50$$

$$\Rightarrow 2x = 50$$

$$\Rightarrow x = 25$$

Thus, the unknown frequency is 25.

Benefits of RS Aggarwal Solutions for Class 10 Maths Chapter 9 Exercise 9.2

- **Clear Explanations:** The solutions provide step-by-step explanations making it easier for students to understand how to solve problems related to cumulative frequency distribution and ogive curves.
- **Expert Guidance:** Prepared by subject experts from Physics Wallah, the solutions ensure accuracy and reliability, giving students confidence in their learning.
- **Enhanced Understanding:** By practicing these solutions, students can deepen their understanding of data representation and analysis which are important concepts in statistics.
- **Improved Graphing Skills:** The solutions help students learn how to create and interpret cumulative frequency tables and ogive curves improving their graphing skills.
- **Boosts Confidence:** With clear guidance and thorough practice students can build their confidence in tackling similar problems in exams and real-life situations.