

- Digvijay
- Arjun

Practice Set 7.1 Algebra 9th Std Maths Part 1

Answers Chapter 7 Statistics

Question 1.

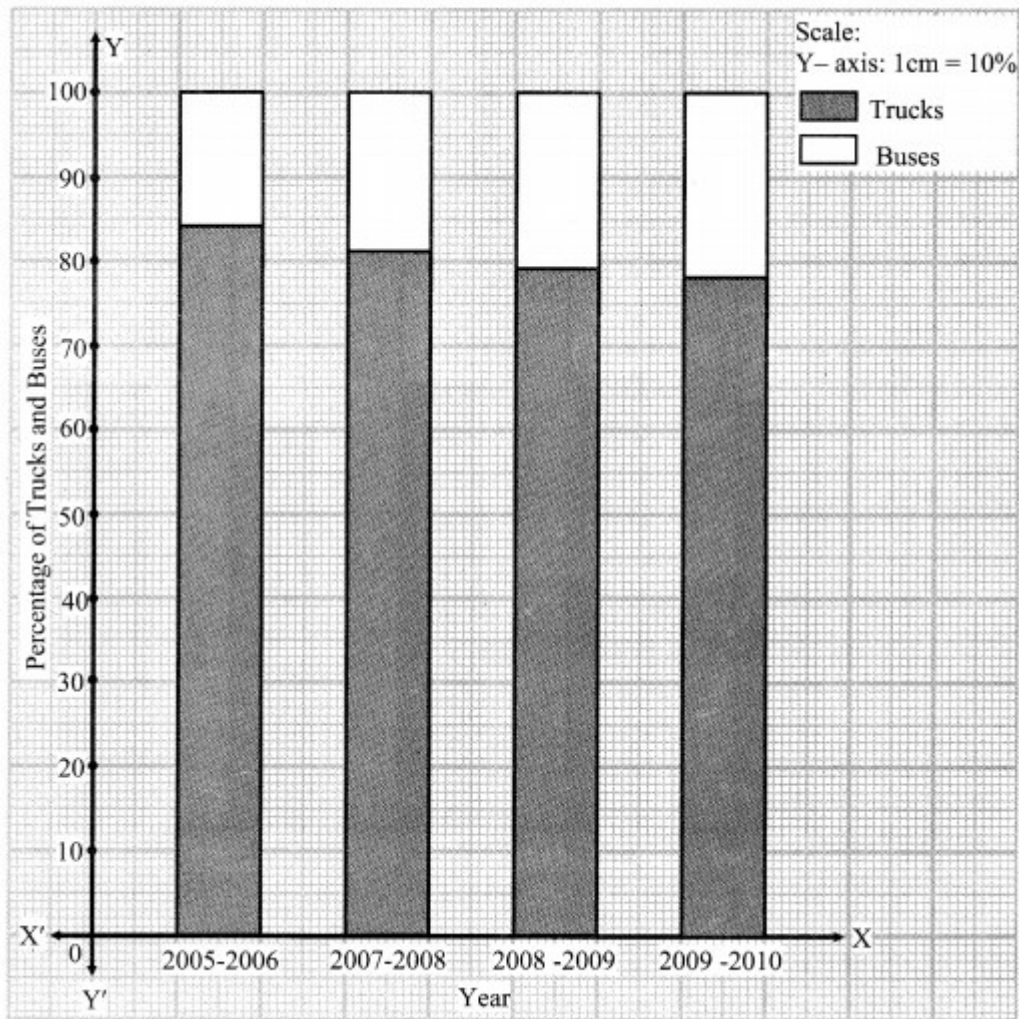
The following table shows the number of Buses and Trucks in nearest lakh units. Draw percentage bar diagram. (Approximate the percentages to the nearest integer)

Year	2005-2006	2007-2008	2008-2009	2009-2010
No. of Trucks	47	56	60	63
No. of Buses	9	13	16	18

Solution:

Year	2005-2006	2007-2008	2008-2009	2009-2010
No. of Trucks	47	56	60	63
No. of Buses	9	13	16	18
Total	56	69	76	81
Percentage of Trucks	$\frac{47}{56} \times 100 = 83.93\%$ ~ 84 %	$\frac{56}{69} \times 100 = 81.16\%$ ~ 81 %	$\frac{60}{76} \times 100 = 78.95\%$ ~ 79 %	$\frac{63}{81} \times 100 = 77.78\%$ ~ 78 %
% Percentage of Buses	$100 - 84 = 16 \%$	$100 - 81 = 19 \%$	$100 - 79 = 21 \%$	$100 - 78 = 22 \%$

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Question 2.

In the table given below, the information is given about roads. Using this draw sub-divided and percentage bar diagram (Approximate the percentages to the nearest integer)

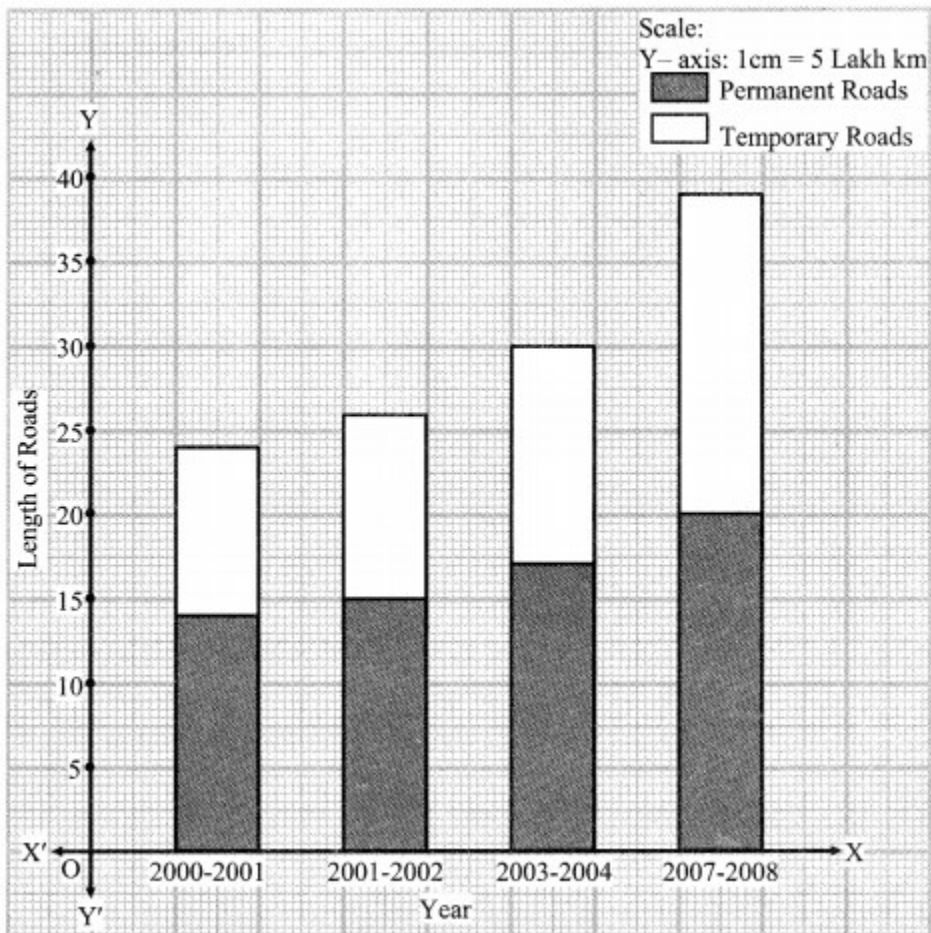
Year	Permanent Roads (Lakh km.)	Temporary Roads (Lakh km.)
2000-2001	14	10
2001-2002	15	11
2003-2004	17	13
2007-2008	20	19

Solution:

i. Sub-divided bar diagram:

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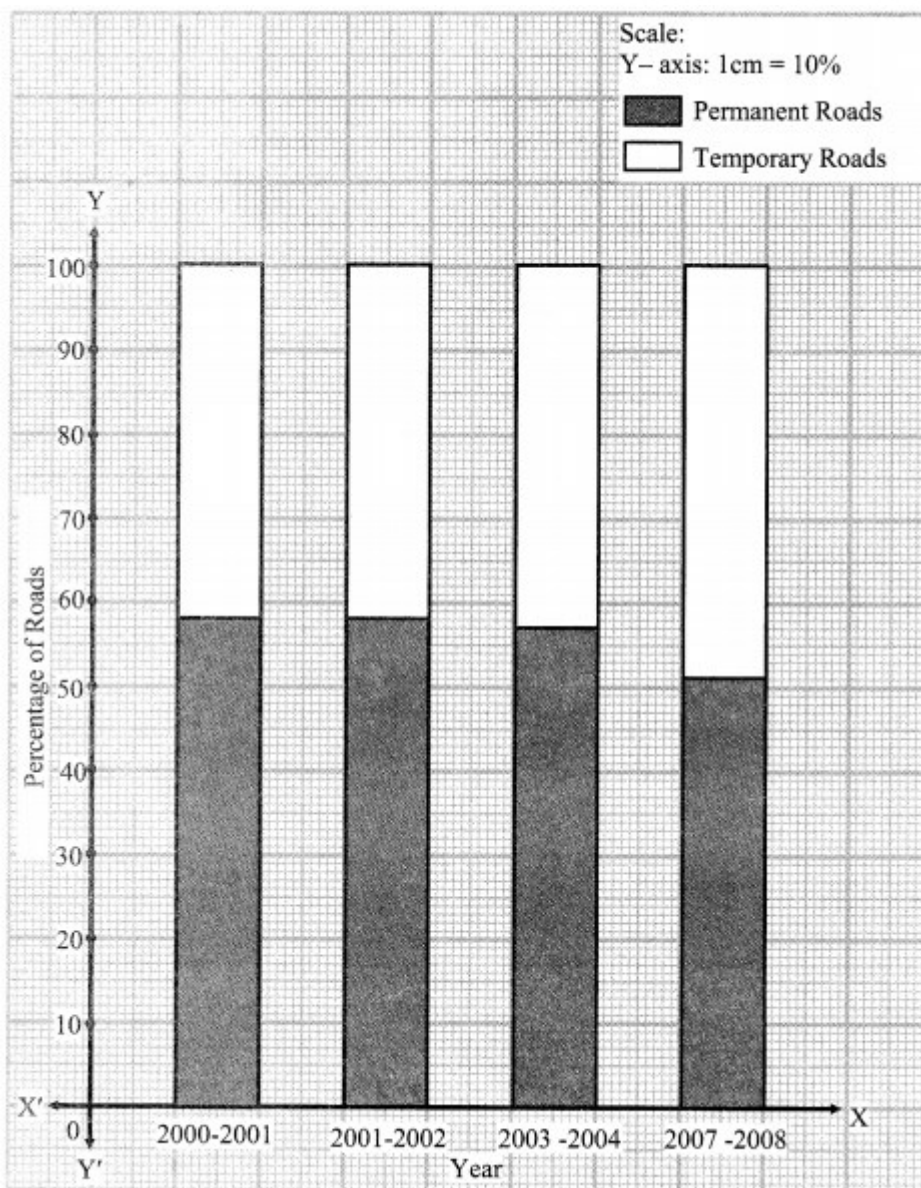
Year	Permanent Roads (Lakh km.)	Temporary Roads (Lakh km.)	Total
2000-2001	14	10	24
2001-2002	15	11	26
2003-2004	17	13	30
2007-2008	20	19	39



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ii. Percentage bar diagram:

Year	2000-2001	2001-2002	2003-2004	2007-2008
Permanent Roads (Lakh km.)	14	15	17	20
Temporary Roads (Lakh km.)	10	11	13	19
Total	24	26	30	39
Percentage of Permanent Roads	$\frac{14}{24} \times 100 = 58.33\%$ ~ 58 %	$\frac{15}{26} \times 100 = 57.69\%$ ~ 58 %	$\frac{17}{30} \times 100 = 56.67\%$ ~ 57 %	$\frac{20}{39} \times 100 = 51.28\%$ ~ 51 %
Percentage of Temporary Roads	100 – 58 = 42 %	100 – 58 = 42 %	100 – 57 = 43 %	100 – 51 = 49 %



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Maharashtra Board Class 9 Maths Chapter 7 Statistics Practice Set 7.1

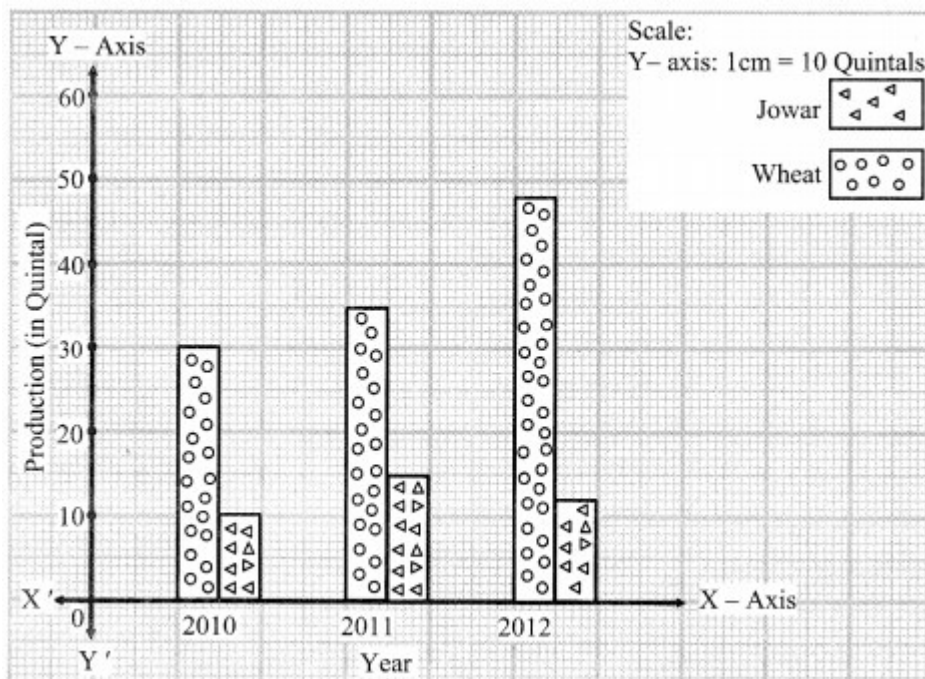
Intext Questions and Activities

Question 1.

A farmer has produced Wheat and Jowar in his field. The following joint bar diagram shows the production of Wheat and Jowar. From the given diagram answer the following questions: (Textbook pg. no. 108)

- i. Which crop production has increased consistently in 3 years?
- ii. By how many quintals the production of jowar has reduced in 2012 as compared to 2011?
- iii. What is the difference between the production of wheat in 2010 and 2012 ?
- iv. Complete the following table using this diagram.

Year \ Production (in Quintal)	Wheat	Jowar	Total
2010			
2011			
2012	48	12	60



Solution:

- i. The crop production of wheat has increased consistently in 3 years.
- ii. The production of jowar has reduced by 3 quintals in 2012 as compared to 2011.

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iii. The difference between the production of wheat in 2010 and 2012 = 48 – 30 = 18 quintals

iv.

Year \ Production (in Quintal)	Wheat	Jowar	Total
2010	30	10	40
2011	35	15	50
2012	48	12	60

Question 2.

In the following table, the information of number of girls per 1000 boys is given for different states. Fill In the blanks and complete the table.

(Textbook pg. no. 111)

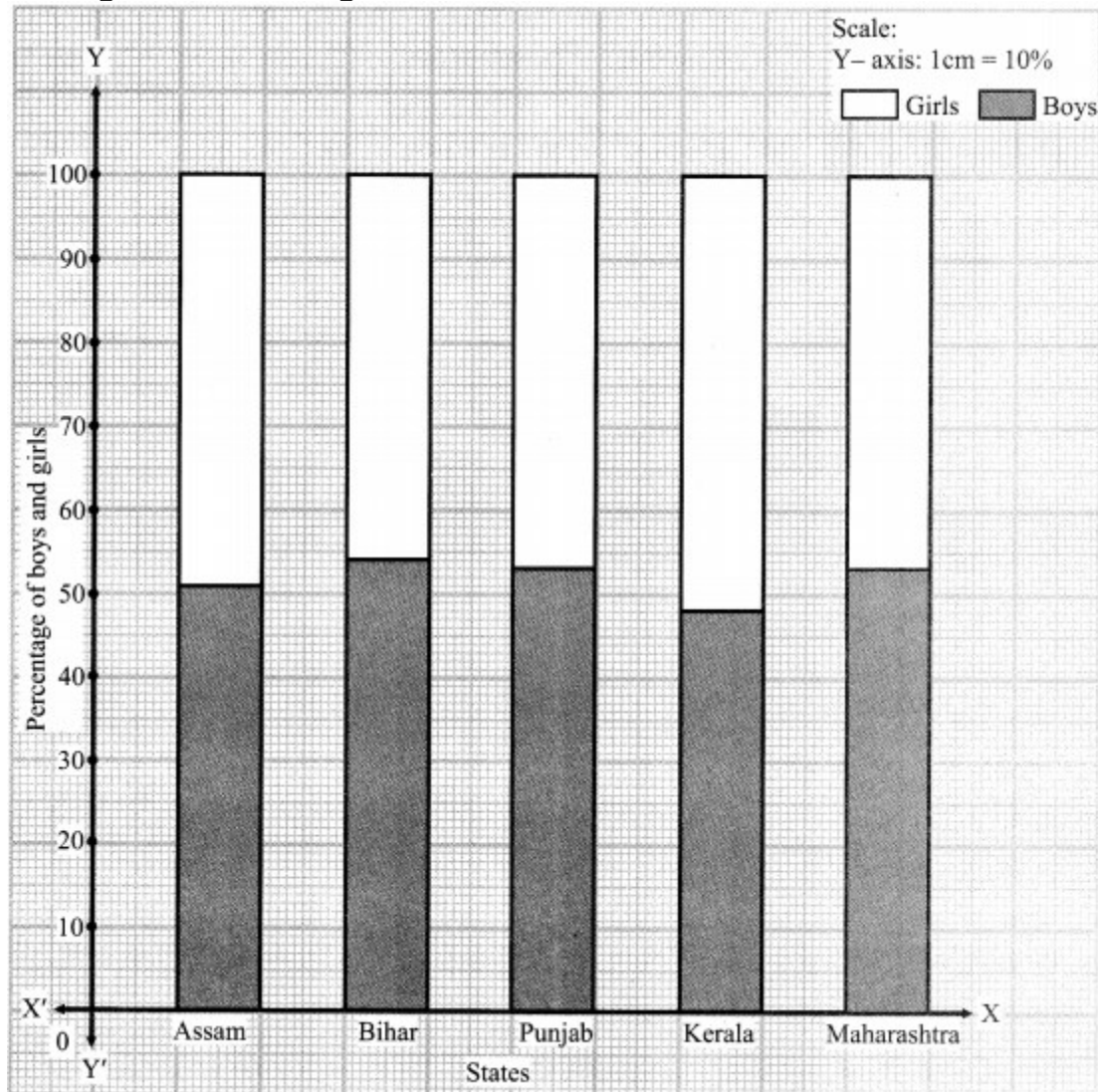
States	Boys	Girls	Total	Percentage of boys (to the nearest integer)	Percentage of girls (to the nearest integer)
Assam	1000	960	1960	$\frac{1000}{1960} \times \frac{100}{1} = 51\%$	$100 - 51 = 49\%$
Bihar	1000	840	1840	$\frac{1000}{1840} \times \frac{100}{1} = 54.35\% \sim 54\%$	$100 - 54 = 46\%$
Punjab	1000	900	1900	$\frac{1000}{1900} \times \frac{100}{1} = 52.63\% \sim 53\%$	$100 - 53 = 47\%$
Kerala	1000	1080	2080	$\frac{1000}{2080} \times \frac{100}{1} = 48.08\% \sim 48\%$	$100 - 48 = 52\%$
Maharashtra	1000	900	1900	$\frac{1000}{1900} \times \frac{100}{1} = 52.63\% \sim 53\%$	$100 - 53 = 47\%$

Solution:

Draw percentage bar diagram from this information and discuss the

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findings from the diagram.



Question 3.

For the above given activity, the information of number of girls per 1000 boys is given for five states. The literacy percentage of these five states is given below. Assam (73%), Bihar (64%), Punjab (77%), Kerala (94%), Maharashtra (83%). Think of the number of girls and the literacy percentages in the respective states. Can you draw any conclusions from it? (Textbook pg. no. 112)

Solution:

By observing the number of girls per 1000 boys and literacy percentages in the given respective states, we can conclude that the literacy rate of girls is least in Bihar and is highest in Kerala.

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Practice Set 7.2 Algebra 9th Std Maths Part 1

Answers Chapter 7 Statistics

Question 1.

Classify following information as primary or secondary data.

- i. Information of attendance of every student collected by visiting every class in a school
- ii. The information of heights of students was gathered from school records and sent to the head office, as it was to be sent urgently.
- iii. In the village Nandpur, the information collected from every house regarding students not attending school.
- iv. For science project, information of trees gathered by visiting a forest.

Answer:

- i. Primary data
- ii. Secondary data
- iii. Primary data
- iv. Primary data

Practice Set 7.3 Algebra 9th Std Maths Part 1

Answers Chapter 7 Statistics

Question 1.

For class interval 20 – 25 write the lower class limit and the upper class limit.

Answer:

Lower class limit = 20

Upper class limit = 25

Question 2.

Find the class-mark of the class 35-40.

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Solution:

Class-mark

$$= \frac{\text{Lower class limit} + \text{Upper class limit}}{2}$$

$$= \frac{35+40}{2}$$

$$= \frac{75}{2}$$

$$= 37.5$$

∴ Class-mark of the class 35 – 40 is 37.5

Question 3.

If class-mark is 10 and class width is 6, then find the class.

Solution:

Let the upper class limit be x and the lower class limit be y.

Class mark = 10 ...[Given]

Class-mark

Class-mark

$$= \frac{\text{Lower class limit} + \text{Upper class limit}}{2}$$

$$\therefore 10 = \frac{x+y}{2}$$

$$\therefore x + y = 20 \dots(i)$$

Class width = 6 ... [Given]

Class width = Upper class limit – Lower class limit

$$\therefore x - y = 6 \dots(ii)$$

Adding equations (i) and (ii),

$$x + y = 20$$

$$x - y = 6$$

$$2x = 26$$

$$\therefore x = 13$$

Substituting x = 13 in equation (i),

$$13 + y = 20$$

$$\therefore y = 20 - 13$$

$$\therefore y = 7$$

∴ The required class is 7 – 13.

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Question 4.

Complete the following table.

Classes (age)	Tally marks	Frequency (No. of students)
12 – 13		
13 – 14		
14 – 15		
15 – 16		
		$N = \sum f = 35$

Solution:

Let frequency of the class 14 – 15 be x then, from table,

$$5 + 14 + x + 4 = 35$$

$$\therefore 23 + x = 35$$

$$\therefore x = 35 - 23$$

$$\therefore x = 12$$

Classes (age)	Tally marks	Frequency (No. of students)
12 – 13		5
13 – 14		14
14 – 15		12
15 – 16		4
		$N = \sum f = 35$

Question 5.

In a 'tree plantation' project of a certain school there are 45 students of 'Harit Sena.' The record of trees planted by each student is given below:

3, 5, 7, 6, 4, 3, 5, 4, 3, 5, 4, 7, 5, 3, 6, 6, 5, 3, 4, 5, 7, 3, 5, 6, 4, 4, 3, 5, 6, 6, 4, 3, 5, 7, 3, 4, 5, 7, 6, 4, 3, 5, 4, 4, 7.

Prepare a frequency distribution table of the data.

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Solution:

Numbers of Trees	Tally marks	Frequency (f) (No. of students)
3		10
4		11
5		11
6		7
7		6
		Total (N) = 45

Question 6.

The value of n upto 50 decimal places is given below:

3.14159265358979323846264338327950288419716939937510

From this information prepare an ungrouped frequency distribution table of digits appearing after the decimal point.

Solution:

Digit	Tally marks	Frequency (f) (Number of digits)
0		2
1		5
2		5
3		8
4		4
5		5
6		4
7		4
8		5
9		8
		Total (N) = 50

Question 7.

In the tables given below, class-mark and frequencies is given. Construct the frequency tables taking inclusive and exclusive classes.

i.

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Class mark	Frequency
5	3
15	9
25	15
35	13

ii.

Class mark	Frequency
22	6
24	7
26	13
28	4

Solution:

i. Let the Lower class limit and upper class limit of the class mark 5 be x and y respectively.

$$\text{Class mark} = \frac{\text{Lower class limit} + \text{Upper class limit}}{2}$$

$$\therefore 5 = \frac{x+y}{2}$$

$$\therefore x + y = 10$$

Here, class width = 15 – 5 = 10

But, Class width = Upper class limit – Lower class limit

$$\therefore y - x = 10$$

$$\therefore -x + y = 10 \dots(ii)$$

Adding equations (i) and (ii),

$$x + y = 10$$

$$-x + y = 10$$

$$\therefore 2y = 20$$

$$\therefore y = 10$$

Substituting y = 10 in equation (i),

$$\therefore x + 10 = 10$$

$$\therefore x = 0$$

\therefore class with class-mark 5 is 0 – 10

Similarly, we can find the remaining classes.

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∴ frequency table taking inclusive and exclusive classes.

Exclusive Class	Inclusive Class	Class mark	Frequency
0 – 10	0.5 – 9.5	5	3
10 – 20	10.5 – 19.5	15	9
20 – 30	20.5 – 29.5	25	15
30 – 40	30.5 – 39.5	35	13

ii. Let the lower class limit and upper class limit of the class mark 22 be x and y respectively.

$$\text{Class mark} = \frac{\text{Lower class limit} + \text{Upper class limit}}{2}$$

$$\therefore 22 = \frac{x + y}{2}$$

$$\therefore x + y = 44 \dots (i)$$

$$\text{Here, class width} = 24 - 22 = 2$$

$$\text{But, Class width} = \text{Upper class limit} - \text{Lower class limit}$$

$$\therefore y - x = 2$$

$$\therefore -x + y = 2 \dots (ii)$$

Adding equations (i) and (ii),

$$x + y = 44$$

$$-x + y = 2$$

$$2y = 46$$

$$\therefore y = 23$$

Substituting y = 23 in equation (i),

$$\therefore x + 23 = 44$$

$$\therefore x = 21$$

$$\therefore \text{class with class-mark 22 is } 21 - 23$$

Similarly, we can find the remaining classes

∴ frequency table taking inclusive and exclusive classes.

Exclusive Class	Inclusive Class	Class mark	Frequency
21 – 23	21.5 – 22.5	22	6
23 – 25	23.5 – 24.5	24	7
25 – 27	25.5 – 26.5	26	13
27 – 29	27.5 – 28.5	28	4

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Question 8.

In a school, 46 students of 9th standard, were told to measure the lengths of the pencils in their compass-boxes in Centimetres. The data collected was as follows:

16, 15, 7, 4.5, 8.5, 5.5, 5, 6.5, 6, 10, 12, 13,
4.5, 4.9, 16, 11, 9.2, 7.3, 11.4, 12.7, 13.9, 16,
5.5, 9.9, 8.4, 11.4, 13.1, 15, 4.8, 10, 7.5, 8.5,
6.5, 7.2, 4.5, 5.7, 16, 5.7, 6.9, 8.9, 9.2, 10.2, 12.3, 13.7, 14.5, 10

By taking exclusive classes 0-5, 5-10, 10-15,.... prepare a grouped frequency distribution table.

Solution:

Class (Lengths of the pencils)	Tally marks	Frequency (f) (No. of students)
0 – 5		5
5 – 10	 	20
10 – 15	 	15
15 – 20		6
		Total (N) = 46

Question 9.

In a village, the milk was collected from 50 milkmen at a collection center in litres as given below:

27, 75, 5, 99, 70, 12, 15, 20, 30, 35, 45, 80, 77,
90, 92, 72, 4, 33, 22, 15, 20, 28, 29, 14, 16, 20,
72, 81, 85, 10, 16, 9, 25, 23, 26, 46, 55, 56, 66,
67, 51, 57, 44, 43, 6, 65, 42, 36, 7, 35

By taking suitable classes, prepare grouped frequency distribution table.

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Solution:

Class (Milk in litres)	Tally marks	Frequency (f) (No. of milkmen)
0 – 20		12
20 – 40		15
40 – 60		9
60 – 80		8
80 – 100		6
		Total (N) = 50

Question 10.

38 people donated to an organisation working for differently abled persons. The amount in rupees were as follows:

101, 500, 401, 201, 301, 160, 210, 125, 175,
190, 450, 151, 101, 351, 251, 451, 151, 260,
360, 410, 150, 125, 161, 195, 351, 170, 225,
260, 290, 310, 360, 425, 420, 100, 105, 170, 250, 100

- i. By taking classes 100 – 149, 150 – 199, 200 – 249... prepare grouped frequency distribution table.
- ii. From the table, find the number of people who donated ₹350 or more.

Solution:

i.

Class (donation in ₹)	Tally marks	Frequency (No. of peoples)
100 – 149		7
150 – 199		10
200 – 249		3
250 – 299		5
300 – 349		2
350 – 399		4
400 – 449		4
450 – 499		2
500 – 549		1
		Total (N) = 38

- ii. Number of people who donated ₹ 350 or more = 4 + 4 + 2 + 1 = 11

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Maharashtra Board Class 9 Maths Chapter 7 Statistics Practice Set 7.3

Intext Questions and Activities

Question 1.

The record of marks out of 20 in Mathematics in the first unit test is as follows:

20, 6, 14, 10, 13, 15, 12, 14, 17, 17, 18, 11, 19,
9, 16, 18, 14, 7, 17, 20, 8, 15, 16, 10, 15, 12,
18, 17, 12, 11, 11, 10, 16, 14, 16, 18, 10, 7, 17,
14, 20, 17, 13, 15, 18, 20, 12, 12, 15, 10

Answer the following questions, from the above information.

- a. How many students scored 15 marks?
- b. How many students scored more than 15 marks?
- c. How many students scored less than 15 marks?
- d. What is the lowest score of the group?
- e. What is the highest score of the group? (Textbook pg. no. 114)

Solution:

- a. 5 students scored 15 marks.
- b. 20 students scored more than 15 marks.
- c. 25 students scored less than 15 marks.
- d. 6 is the lowest score of the group.
- e. 20 is the highest score of the group.

Question 2.

For the above Question prepare Frequency Distribution Table. (Textbook pg. no. 115)

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Solution:

Score	Tally Marks	Frequency (No. of students)
6		1
7		2
8		1
9		1
10		5
11		3
12		5
13		2
14		5
15		5
16		4
17		6
18		5
19		1
20		4
		Total (N) = 50

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Practice Set 7.4 Algebra 9th Std Maths Part 1

Answers Chapter 7 Statistics

Question 1.

Complete the following cumulative frequency table:

Class (Height in cm)	Frequency (No. of students)	Less than type frequency
150 – 153	05	05
153 – 156	07	$05 + \square = \square$
156 – 159	15	$\square + 15 = \square$
159 – 162	10	$\square + \square = 37$
162 – 165	05	$37 + 5 = 42$
165 – 168	03	$\square + \square = 45$
	Total (N) = 45	

Solution:

Class (Height in cm)	Frequency (No. of students)	Less than type frequency
150 – 153	05	05
153 – 156	07	$05 + \boxed{07} = \boxed{12}$
156 – 159	15	$\boxed{12} + 15 = \boxed{27}$
159 – 162	10	$\boxed{27} + \boxed{10} = 37$
162 – 165	05	$37 + 5 = 42$
165 – 168	03	$\boxed{42} + \boxed{03} = 45$
	Total (N) = 45	

Question 2.

Complete the following Cumulative Frequency Table:

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Class (Monthly income in ₹)	Frequency (No. of individuals)	More than or equal to type cumulative frequency
1000 – 5000	45	
5000 – 10000	19	
10000 – 15000	16	
15000 – 20000	02	
20000 – 25000	05	
	Total (N) = 87	

Solution:

Class (Monthly income in ₹)	Frequency (No. of individuals)	More than or equal to type cumulative frequency
1000 – 5000	45	87
5000 – 10000	19	$87 - 45 = 42$
10000 – 15000	16	$42 - 19 = 23$
15000 – 20000	02	$23 - 16 = 7$
20000 – 25000	05	$7 - 2 = 5$
	Total (N) = 87	

Question 3.

The data is given for 62 students in a certain class regarding their mathematics marks out of 100. Take the classes 0 – 10, 10 – 20,... and prepare frequency distribution

table and cumulative frequency table more than or equal to type.

55. 60, 81, 90, 45, 65, 45, 52, 30, 85, 20, 10,
75, 95, 09, 20, 25, 39, 45, 50, 78, 70, 46, 64,
42. 58. 31, 82, 27, 11, 78, 97, 07, 22, 27, 36,
35, 40, 75, 80, 47, 69, 48, 59, 32, 83, 23, 17,
77, 45, 05, 23, 37, 38, 35, 25, 46, 57, 68, 45.
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From the prepared table, answer the following questions :

- i. How many students obtained marks 40 or above 40?
- ii. How many students obtained marks 90 or above 90?
- iii. How many students obtained marks 60 or above 60?

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iv. What is the cumulative frequency of equal to or more than type of the class 0 – 10?

Solution:

Class (Marks)	Tally marks	Frequency (No. of students)	More than or equal to type cumulative frequency
0 – 10		3	62
10 – 20		3	$62 - 3 = 59$
20 – 30		9	$59 - 3 = 56$
30 – 40		9	$56 - 9 = 47$
40 – 50	 	13	$47 - 9 = 38$
50 – 60		6	$38 - 13 = 25$
60 – 70		5	$25 - 6 = 19$
70 – 80		6	$19 - 5 = 14$
80 – 90		5	$14 - 6 = 8$
90 – 100		3	$8 - 5 = 3$
		Total (N) = 62	

- i. 38 students obtained marks 40 or above 40.
- ii. 3 students obtained marks 90 or above 90.
- iii. 19 students obtained marks 60 or above 60.
- iv. Cumulative frequency of equal to or more than type of the class 0 – 10 is 62.

Question 4.

Using the data In example (3) above, prepare less than type cumulative frequency table and answer the following questions.

- i. How many students obtained less than 40 marks?
- ii. How many students obtained less than 10 marks?
- iii. How many students obtained less than 60 marks?
- iv. Find the cumulative frequency of the class 50 – 60.

Solution:

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Class (Marks)	Frequency (No. of students)	Less than cumulative frequency
0 – 10	3	3
10 – 20	3	$3 + 3 = 6$
20 – 30	9	$6 + 9 = 15$
30 – 40	9	$15 + 9 = 24$
40 – 50	13	$24 + 13 = 37$
50 – 60	6	$37 + 6 = 43$
60 – 70	5	$43 + 5 = 48$
70 – 80	6	$48 + 6 = 54$
80 – 90	5	$54 + 5 = 59$
90 – 100	3	$59 + 3 = 62$
Total (N) = 62		

- i. 24 students obtained less than 40 marks.
- ii. 3 students obtained less than 10 marks.
- iii. 43 students obtained less than 60 marks.
- iv. Cumulative frequency of the class 50 – 60 is 43.

Maharashtra Board Class 9 Maths Chapter 7 Statistics Practice Set 7.4 Intext Questions and Activities

Question 1.

The following information is regarding marks in mathematics, obtained out of 40, scored by 50 students of 9th std. in the first unit test. (Textbook pg. no. 120)

Class interval	Frequency (f) (No. of students)
0 – 10	02
10 – 20	12
20 – 30	20
30 – 40	16
Total (N) = 50	

From the table, fill in the blanks in the following statements.

- i. For class interval 10 – 20 the lower class limit is ____ and upper class limit is ____
- ii. How many students obtained marks less than 10? 2

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iii. How many students obtained marks less than 20? $2 + \underline{\hspace{1cm}} = 14$

iv. How many students obtained marks less than 30? $\underline{\hspace{1cm}} + \underline{\hspace{1cm}} = 34$

v. How many students obtained marks less than 40? $\underline{\hspace{1cm}} + \underline{\hspace{1cm}} = 50$

Solution:

i. 10, 20

iii. 12

iv. $14 + 20$

v. $34 + 16$

Question 2.

A sports club has organised a table-tennis tournaments. The following table gives the distribution of players ages. Find the cumulative frequencies equal to or more than the lower class limit and complete the table (Textbook pg. no. 121)

Solution:

Equal to lower limit or more than lower limit type of cumulative table.

Age (Year)	Tally marks	Frequency (No. of students)	Equal to lower limit or more than lower limit
10 – 12		09	50
12 – 14		23	$50 - 9 = 41$
14 – 16		13	$41 - 23 = 18$
15 – 16		05	$18 - 13 = 5$
		Total (N) = 50	

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Practice Set 7.4 Algebra 9th Std Maths Part 1

Answers Chapter 7 Statistics

Question 1.

Complete the following cumulative frequency table:

Class (Height in cm)	Frequency (No. of students)	Less than type frequency
150 – 153	05	05
153 – 156	07	$05 + \square = \square$
156 – 159	15	$\square + 15 = \square$
159 – 162	10	$\square + \square = 37$
162 – 165	05	$37 + 5 = 42$
165 – 168	03	$\square + \square = 45$
	Total (N) = 45	

Solution:

Class (Height in cm)	Frequency (No. of students)	Less than type frequency
150 – 153	05	05
153 – 156	07	$05 + \boxed{07} = \boxed{12}$
156 – 159	15	$\boxed{12} + 15 = \boxed{27}$
159 – 162	10	$\boxed{27} + \boxed{10} = 37$
162 – 165	05	$37 + 5 = 42$
165 – 168	03	$\boxed{42} + \boxed{03} = 45$
	Total (N) = 45	

Question 2.

Complete the following Cumulative Frequency Table:

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Class (Monthly income in ₹)	Frequency (No. of individuals)	More than or equal to type cumulative frequency
1000 – 5000	45	
5000 – 10000	19	
10000 – 15000	16	
15000 – 20000	02	
20000 – 25000	05	
	Total (N) = 87	

Solution:

Class (Monthly income in ₹)	Frequency (No. of individuals)	More than or equal to type cumulative frequency
1000 – 5000	45	87
5000 – 10000	19	$87 - 45 = 42$
10000 – 15000	16	$42 - 19 = 23$
15000 – 20000	02	$23 - 16 = 7$
20000 – 25000	05	$7 - 2 = 5$
	Total (N) = 87	

Question 3.

The data is given for 62 students in a certain class regarding their mathematics marks out of 100. Take the classes 0 – 10, 10 – 20,... and prepare frequency distribution

table and cumulative frequency table more than or equal to type.

55. 60, 81, 90, 45, 65, 45, 52, 30, 85, 20, 10,
75, 95, 09, 20, 25, 39, 45, 50, 78, 70, 46, 64,
42. 58. 31, 82, 27, 11, 78, 97, 07, 22, 27, 36,
35, 40, 75, 80, 47, 69, 48, 59, 32, 83, 23, 17,
77, 45, 05, 23, 37, 38, 35, 25, 46, 57, 68, 45.
47,49

From the prepared table, answer the following questions :

- i. How many students obtained marks 40 or above 40?
- ii. How many students obtained marks 90 or above 90?
- iii. How many students obtained marks 60 or above 60?

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iv. What is the cumulative frequency of equal to or more than type of the class 0 – 10?

Solution:

Class (Marks)	Tally marks	Frequency (No. of students)	More than or equal to type cumulative frequency
0 – 10		3	62
10 – 20		3	$62 - 3 = 59$
20 – 30		9	$59 - 3 = 56$
30 – 40		9	$56 - 9 = 47$
40 – 50	 	13	$47 - 9 = 38$
50 – 60		6	$38 - 13 = 25$
60 – 70		5	$25 - 6 = 19$
70 – 80		6	$19 - 5 = 14$
80 – 90		5	$14 - 6 = 8$
90 – 100		3	$8 - 5 = 3$
		Total (N) = 62	

- i. 38 students obtained marks 40 or above 40.
- ii. 3 students obtained marks 90 or above 90.
- iii. 19 students obtained marks 60 or above 60.
- iv. Cumulative frequency of equal to or more than type of the class 0 – 10 is 62.

Question 4.

Using the data In example (3) above, prepare less than type cumulative frequency table and answer the following questions.

- i. How many students obtained less than 40 marks?
- ii. How many students obtained less than 10 marks?
- iii. How many students obtained less than 60 marks?
- iv. Find the cumulative frequency of the class 50 – 60.

Solution:

- Digvijay
- Arjun

Class (Marks)	Frequency (No. of students)	Less than cumulative frequency
0 – 10	3	3
10 – 20	3	$3 + 3 = 6$
20 – 30	9	$6 + 9 = 15$
30 – 40	9	$15 + 9 = 24$
40 – 50	13	$24 + 13 = 37$
50 – 60	6	$37 + 6 = 43$
60 – 70	5	$43 + 5 = 48$
70 – 80	6	$48 + 6 = 54$
80 – 90	5	$54 + 5 = 59$
90 – 100	3	$59 + 3 = 62$
Total (N) = 62		

- i. 24 students obtained less than 40 marks.
- ii. 3 students obtained less than 10 marks.
- iii. 43 students obtained less than 60 marks.
- iv. Cumulative frequency of the class 50 – 60 is 43.

Maharashtra Board Class 9 Maths Chapter 7 Statistics Practice Set 7.4 Intext Questions and Activities

Question 1.

The following information is regarding marks in mathematics, obtained out of 40, scored by 50 students of 9th std. in the first unit test. (Textbook pg. no. 120)

Class interval	Frequency (f) (No. of students)
0 – 10	02
10 – 20	12
20 – 30	20
30 – 40	16
Total (N) = 50	

From the table, fill in the blanks in the following statements.

- i. For class interval 10 – 20 the lower class limit is ____ and upper class limit is ____
- ii. How many students obtained marks less than 10? 2

- Digvijay
- Arjun

iii. How many students obtained marks less than 20? $2 + \underline{\hspace{1cm}} = 14$

iv. How many students obtained marks less than 30? $\underline{\hspace{1cm}} + \underline{\hspace{1cm}} = 34$

v. How many students obtained marks less than 40? $\underline{\hspace{1cm}} + \underline{\hspace{1cm}} = 50$

Solution:

i. 10, 20

iii. 12

iv. $14 + 20$

v. $34 + 16$

Question 2.

A sports club has organised a table-tennis tournaments. The following table gives the distribution of players ages. Find the cumulative frequencies equal to or more than the lower class limit and complete the table (Textbook pg. no. 121)

Solution:

Equal to lower limit or more than lower limit type of cumulative table.

Age (Year)	Tally marks	Frequency (No. of students)	Equal to lower limit or more than lower limit
10 – 12		09	50
12 – 14		23	$50 - 9 = 41$
14 – 16		13	$41 - 23 = 18$
15 – 16		05	$18 - 13 = 5$
		Total (N) = 50	

- Digvijay
- Arjun

Practice Set 7.5 Algebra 9th Std Maths Part 1

Answers Chapter 7 Statistics

Question 1.

Yield of soyabean per acre in quintal in Mukund's field for 7 years was 10, 7, 5, 3, 9, 6, 9. Find the mean of yield per acre.

Solution:

$$\begin{aligned}\text{Mean} &= \frac{\text{The sum of all observations in the data}}{\text{Total number of observations}} \\ &= \frac{10+7+5+3+9+6+9}{7} \\ &= \frac{49}{7}\end{aligned}$$

Mean = 7

The mean of yield per acre is 7 quintals.

Question 2.

Find the median of the observations, 59, 75, 68, 70, 74, 75, 80.

Solution:

Given data in ascending order:

59, 68, 70, 74, 75, 75, 80

∴ Number of observations(n) = 7 (i.e., odd)

∴ Median is the middle most observation

Here, 4th number is at the middle position, which is = 74

∴ The median of the given data is 74.

Question 3.

The marks (out of 100) obtained by 7 students in Mathematics examination are given below. Find the mode for these marks.

99, 100, 95, 100, 100, 60, 90

Solution:

Given data in ascending order:

60, 90, 95, 99, 100, 100, 100

Here, the observation repeated maximum number of times = 100

∴ The mode of the given data is 100.

- Digvijay
- Arjun

Question 4.

The monthly salaries in rupees of 30 workers in a factory are given below.

5000, 7000, 3000, 4000, 4000, 3000, 3000,
3000, 8000, 4000, 4000, 9000, 3000, 5000,
5000, 4000, 4000, 3000, 5000, 5000, 6000,
8000, 3000, 3000, 6000, 7000, 7000, 6000,
6000, 4000

From the above data find the mean of monthly salary.

Solution:

Monthly salary (x_i)	No. of workers (f_i)	$f_i \times x_i$
3000	8	24000
4000	7	28000
5000	5	25000
6000	4	24000
7000	3	21000
8000	2	16000
9000	1	9000
	$\Sigma f_i = 30$	$\Sigma f_i x_i = 1,47,000$

$$\begin{aligned}
 \text{Mean } (\bar{x}) &= \frac{\sum f_i x_i}{\sum f_i} \\
 &= \frac{1,47,000}{30} \\
 &= ₹ 4900
 \end{aligned}$$

∴ The mean of monthly salary is ₹ 4900.

Question 5.

In a basket there are 10 tomatoes. The weight of each of these tomatoes in grams is as follows:

60, 70, 90, 95, 50, 65, 70, 80, 85, 95.

Find the median of the weights of tomatoes.

Solution:

Given data in ascending order:

50, 60, 65, 70, 70, 80, 85, 90, 95, 95

∴ Number of observations (n) = 10 (i.e., even)

∴ Median is the average of middle two observations

Here, 5th and 6th numbers are in the middle position

- Digvijay
- Arjun

$$\therefore \text{Median} = 70+802$$

$$\therefore \text{Median} = 1502$$

\therefore The median of the weights of tomatoes is 75 grams.

Question 6.

A hockey player has scored following number of goals in 9 matches: 5, 4, 0, 2, 2, 4, 4, 3, 3.

Find the mean, median and mode of the data.

Solution:

i. Given data: 5, 4, 0, 2, 2, 4, 4, 3, 3.

Total number of observations = 9

$$\begin{aligned}\text{Mean} &= \frac{\text{The sum of all observations in the data}}{\text{Total number of observations}} \\ &= \frac{5+4+0+2+2+4+4+3+3}{9} \\ &= \frac{27}{9}\end{aligned}$$

\therefore The mean of the given data is 3.

ii. Given data in ascending order:

0, 2, 2, 3, 3, 4, 4, 4, 5

\therefore Number of observations(n) = 9 (i.e., odd)

\therefore Median is the middle most observation

Here, the 5th number is at the middle position, which is 3.

\therefore The median of the given data is 3.

iii. Given data in ascending order:

0, 2, 2, 3, 3, 4, 4, 4, 5

Here, the observation repeated maximum number of times = 4

\therefore The mode of the given data is 4.

Question 7.

The calculated mean of 50 observations was 80. It was later discovered that observation 19 was recorded by mistake as 91. What Was the correct mean?

Solution:

Here, mean = 80, number of observations = 50

Mean = $\frac{\text{The sum of all observations}}{\text{Total number of observations}}$

\therefore The sum of all observations = Mean x Total number of observations

- Digvijay
- Arjun

∴ The sum of 50 observations = 80×50
= 4000

One of the observation was 19. However, by mistake it was recorded as 91.

Sum of observations after correction = sum of 50 observation + correct observation – incorrect observation

$$= 4000 + 19 - 91$$

$$= 3928$$

∴ Corrected mean

$$= \frac{\text{Sum of observations after correction}}{\text{Total number of observations}}$$

$$= \frac{3928}{50}$$

$$= 78.56$$

∴ The corrected mean is 78.56.

Question 8.

Following 10 observations are arranged in ascending order as follows. 2, 3, 5, 9, $x + 1$, $x + 3$, 14, 16, 19, 20. If the median of the data is 11, find the value of x .

Solution:

Given data in ascending order :

2, 3, 5, 9, $x + 1$, $x + 3$, 14, 16, 19, 20.

∴ Number of observations (n) = 10 (i.e., even)

∴ Median is the average of middle two observations

Here, the 5th and 6th numbers are in the middle position.

$$\therefore \text{Median} = \frac{(x+1) + (x+3)}{2}$$

$$\therefore 11 = \frac{2x+4}{2}$$

$$\therefore 22 = 2x + 4$$

$$\therefore 22 - 4 = 2x$$

$$\therefore 18 = 2x$$

$$\therefore x = 9$$

Question 9.

The mean of 35 observations is 20, out of which mean of first 18 observations is 15 and mean of last 18 observations is 25. Find the 18th observation.

Solution:

Mean = $\frac{\text{The sum of all observations}}{\text{Total number of observations}}$

∴ The sum of all observations

$$= \text{Mean} \times \text{Total number of observations}$$

- Digvijay
- Arjun

The mean of 35 observations is 20

$$\therefore \text{Sum of 35 observations} = 20 \times 35 = 700 \dots (i)$$

The mean of first 18 observations is 15

$$\text{Sum of first 18 observations} = 15 \times 18$$

$$= 270 \dots (ii)$$

The mean of last 18 observations is 25 Sum of last 18 observations = 25×18

$$= 450 \dots (iii)$$

$$\therefore 18^{\text{th}} \text{ observation} = (\text{Sum of first 18 observations} + \text{Sum of last 18 observations}) - (\text{Sum of 35 observations})$$

$$= (270 + 450) - (700) \dots [\text{From (i), (ii) and (iii)}]$$

$$= 720 - 700 = 20$$

The 18th observation is 20.

Question 10.

The mean of 5 observations is 50. One of the observations was removed from the data, hence the mean became 45. Find the observation which was removed.

Solution:

Mean = $\frac{\text{The sum of all observations}}{\text{Total number of observations}}$

$$\therefore \text{The sum of all observations} = \text{Mean} \times \text{Total number of observations}$$

The mean of 5 observations is 50

$$\text{Sum of 5 observations} = 50 \times 5 = 250 \dots (i)$$

One observation was removed and mean of remaining data is 45.

$$\text{Total number of observations after removing one observation} = 5 - 1 = 4$$

Now, mean of 4 observations is 45.

$$\therefore \text{Sum of 4 observations} = 45 \times 4 = 180 \dots (ii)$$

\therefore Observation which was removed

$$= \text{Sum of 5 observations} - \text{Sum of 4 observations} = 250 - 180 \dots [\text{From (i) and (ii)}]$$

$$= 70$$

\therefore The observation which was removed is 70.

Question 11.

There are 40 students in a class, out of them 15 are boys. The mean of marks obtained by boys is 33 and that for girls is 35. Find out the mean of all students in the class.

Solution:

$$\text{Total number of students} = 40$$

- Digvijay
- Arjun

Number of boys = 15

∴ Number of girls = $40 - 15 = 25$

The mean of marks obtained by 15 boys is 33

Here, sum of the marks obtained by boys

$$= 33 \times 15$$

$$= 495 \dots (i)$$

The mean of marks obtained by 25 girls is 35 Sum of the marks obtained by girls = 35×25

$$= 875 \dots (ii)$$

Sum of the marks obtained by boys and girls = $495 + 875 \dots$ [From (i) and (ii)]

$$= 1370$$

∴ Mean of all the students

$$= \frac{\text{Sum of the marks of all the students}}{\text{Total number of students}}$$

$$= \frac{1370}{40}$$

$$= 34.25$$

∴ The mean of all the students in the class is 34.25.

Question 12.

The weights of 10 students (in kg) are given below:

40, 35, 42, 43, 37, 35, 37, 37, 42, 37. Find the mode of the data.

Solution:

Given data in ascending order:

35, 35, 37, 37, 37, 37, 40, 42, 42, 43

∴ The observation repeated maximum number of times = 37

∴ Mode of the given data is 37 kg

Question 13.

In the following table, the information is given about the number of families and the siblings in the families less than 14 years of age. Find the mode of the data.

No. of siblings	1	2	3	4
Families	15	25	5	5

Solution:

Here, the maximum frequency is 25.

- Digvijay
- Arjun

Since, Mode = observations having maximum frequency

∴ The mode of the given data is 2.

Question 14.

Find the mode of the following data.

Marks	35	36	37	38	39	40
No. of students	09	07	09	04	04	02

Solution:

Here, the maximum frequency is 9.

Since, Mode = observations having maximum frequency

But, this is the frequency of two observations.

∴ Mode = 35 and 37

Maharashtra Board Class 9 Maths Chapter 7 Statistics Practice Set 7.5 Intext Questions and Activities

Question 1.

The first unit test of 40 marks was conducted for a class of 35 students. The marks obtained by the students were as follows. Find the mean of the marks.

40, 35, 30, 25, 23, 20, 14, 15, 16, 20, 17, 37, 37, 20, 36, 16, 30, 25, 25, 36, 37, 39, 39, 40, 15, 16, 17, 30, 16, 39, 40, 35, 37, 23, 16.

(Textbook pg, no. 123)

Solution:

Here, we can add all observations, but it will be a tedious job. It is easy to make frequency distribution table to calculate mean.

- Digvijay
- Arjun

Marks (x_i)	No. of students (f_i)	$f_i \times x_i$
14	1	$14 \times 1 = 14$
15	2	$15 \times 2 = 30$
16	5	$16 \times 5 = 80$
17	2	$17 \times 2 = 34$
20	3	$20 \times 3 = 60$
23	2	$23 \times 2 = 46$
25	3	$25 \times 3 = 75$
30	3	$30 \times 3 = 90$
35	2	$35 \times 2 = 70$
36	2	$36 \times 2 = 72$
37	4	$37 \times 4 = 148$
39	3	$39 \times 3 = 117$
40	3	$40 \times 3 = 120$
	N = 35	$\Sigma f_i x_i = 956$

$$\begin{aligned} \text{Mean } (\bar{x}) &= \frac{\Sigma f_i x_i}{N} \\ &= \frac{956}{35} \end{aligned}$$

= 27.31 marks (approximately)

∴ The mean of the mark is 27.31.

- Digvijay
- Arjun

Problem Set 7 Algebra 9th Std Maths Part 1

Answers Chapter 7 Statistics

Question 1.

Write the correct alternative answer for each of the following questions.

i. Which of the following data is not primary ?

- (A) By visiting a certain class, gathering information about attendance of students.
- (B) By actual visit to homes, to find number of family members.
- (C) To get information regarding plantation of soyabean done by each farmer from the village Talathi.
- (D) Review the cleanliness status of canals by actually visiting them.

Answer:

(C) To get information regarding plantation of soyabean done by each farmer from the village Talathi.

ii. What is the upper class limit for the class 25 – 35?

- (A) 25
- (B) 35
- (C) 60
- (D) 30

Answer:

(B) 35

iii. What is the class-mark of class 25 – 35?

- (A) 25
- (B) 35
- (C) 60
- (D) 30

Answer:

(D) 30

iv. If the classes are 0 – 10, 10 – 20, 20 – 30, ..., then in which class should the observation 10 be included?

- Digvijay
- Arjun

- (A) 0 – 10
 (B) 10 – 20
 (C) 0 – 10 and 10-20 in these 2 classes
 (D) 20 – 30

Answer:

- (B) 10 – 20

v. If \bar{x} is the mean of x_1, x_2, \dots, x_n and \bar{y} is the mean of y_1, y_2, \dots, y_n and \bar{z} is the mean of $x_1, x_2, \dots, x_n, y_1, y_2, \dots, y_n$, then $\bar{z} = ?$

- (A) $\frac{\bar{x} + \bar{y}}{2}$ (B) $\bar{x} + \bar{y}$
 (C) $\frac{\bar{x} + \bar{y}}{n}$ (D) $\frac{\bar{x} + \bar{y}}{2n}$

Answer:

$x_1, x_2, x_3, \dots, x_n$

$$\therefore \bar{x} = \frac{\sum x}{n}$$

$$\therefore n\bar{x} = \sum x$$

$$\text{Similarly, } n\bar{y} = \sum y$$

Now,

$$\bar{z} = \frac{\sum x + \sum y}{n + n} = \frac{n\bar{x} + n\bar{y}}{2n} = \frac{n(\bar{x} + \bar{y})}{2n} = \frac{(\bar{x} + \bar{y})}{2}$$

- (A) $\bar{x} + \bar{y} - 2$

vi. The mean of five numbers is 50, out of which mean of 4 numbers is 46, find the 5th number.

- (A) 4
 (B) 20
 (C) 434
 (D) 66

Answer:

5th number = Sum of five numbers – Sum of four numbers

$$= (5 \times 50) - (4 \times 46)$$

$$= 250 - 184$$

$$= 66$$

- (D) 66

vii. Mean of 100 observations is 40. The 9th observation is 30. If this is replaced by 70 keeping all other observations same, find the new mean.

- Digvijay
- Arjun

- (A) 40.6
(B) 40.4
(C) 40.3
(D) 40.7

Answer:

$$\begin{aligned}\text{New mean} &= 4000 - 30 + 70100 \\ &= 40.4\end{aligned}$$

- (B) 40.4

viii. What is the mode of 19, 19, 15, 20, 25, 15, 20, 15?

- (A) 15
(B) 20
(C) 19
(D) 25

Answer:

- (A) 15

ix. What is the median of 7, 10, 7, 5, 9, 10 ?

- (A) 7
(B) 9
(C) 8
(D) 10

Answer:

- (C) 8

x. From following table, what is the cumulative frequency of less than type for the class 30 – 40?

Class	Frequency
0 – 10	7
10 – 20	3
20 – 30	12
30 – 40	13
40 – 50	2

- (A) 13
(B) 15
(C) 35
(D) 22

Answer:

- Digvijay
- Arjun

Cumulative frequency of less than type for the class 30 – 40 = 7 + 3 + 12 + 13 = 35

(C) 35

Question 2.

The mean salary of 20 workers is ₹10,250. If the salary of office superintendent is added, the mean will increase by ₹ 750. Find the salary of the office superintendent.

Solution:

Mean = $\frac{\text{The sum of all observations}}{\text{Total number of observations}}$

∴ The sum of all observations = Mean x Total number of observations

The mean salary of 20 workers is ₹ 10,250.

∴ Sum of the salaries of 20 workers

$$= 20 \times 10,250$$

$$= ₹ 2,05,000 \dots(i)$$

If the superintendent's salary is added, then mean increases by 750

$$\text{new mean} = 10,250 + 750 = 11,000$$

Total number of people after adding superintendent = 20 + 1 = 21

$$\begin{aligned} \therefore \text{Sum of the salaries including the superintendent's salary} &= 21 \times 11,000 = \\ &= ₹ 2,31,000 \dots(ii) \end{aligned}$$

∴ Superintendent salary = sum of the salaries including superintendent's salary – sum of salaries of 20 workers

$$= 2,31,000 - 2,05,000 \dots[\text{From (i) and (ii)}]$$

$$= 26,000$$

∴ The salary of the office superintendent is ₹ 26,000.

Question 3.

The mean of nine numbers is 77. If one more number is added to it, then the mean increases by 5. Find the number added in the data.

Solution:

∴ **Mean** = $\frac{\text{The sum of all observations}}{\text{Total number of observations}}$

∴ The sum of all observations = Mean x Total number of observations

mean of nine numbers is 77

$$\therefore \text{sum of 9 numbers} = 77 \times 9 = 693 \dots(i)$$

If one more number is added, then mean increases by 5

$$\text{mean of 10 numbers} = 77 + 5 = 82$$

$$\therefore \text{sum of the 10 numbers} = 82 \times 10 = 820 \dots(ii)$$

$$\therefore \text{Number added} = \text{sum of the 10 numbers} - \text{sum of the 9 numbers} = 820$$

- Digvijay
- Arjun

– 693 ... [From (i) and (ii)]

= 127

∴ The number added in the data is 127.

Question 4.

The monthly maximum temperature of a city is given in degree Celsius in the following data. By taking suitable classes, prepare the grouped frequency distribution table

29.2, 29.0, 28.1, 28.5, 32.9, 29.2, 34.2, 36.8, 32.0, 31.0, 30.5, 30.0, 33, 32.5, 35.5, 34.0, 32.9, 31.5, 30.3, 31.4, 30.3, 34.7, 35.0, 32.5, 33.5, 29.0.

29.5, 29.9, 33.2, 30.2

From the table, answer the following questions.

- i. For how many days the maximum temperature was less than 34°C?
- ii. For how many days the maximum temperature was 34°C or more than 34°C?

Solution:

Temperature	Tally Marks	Frequency
28 – 30		8
30 – 32		8
32 – 34		8
34 – 36		5
36 – 38		1
		Total (N) = 30

i. Number of days for which the maximum temperature was less than 34°C
= 8 + 8 + 8 = 24

ii. Number of days for which the maximum temperature was 34°C or more than 34°C
= 5 + 1 = 6

Question 5.

If the mean of the following data is 20.2, then find the value of p.

x_i	10	15	20	25	30
f_i	6	8	p	10	6

Solution:

- Digvijay
- Arjun

x_i	f_i	$f_i x_i$
10	6	60
15	8	120
20	p	20p
25	10	250
30	6	180
	$\Sigma f_i = 30 + p$	$\Sigma f_i x_i = 610 + 20p$

$$\text{Mean } (\bar{x}) = \frac{\sum f_i x_i}{\sum f_i}$$

$$\therefore 20.2 = \frac{610 + 20p}{30 + p}$$

$$\therefore 20.2 (30 + p) = 610 + 20p$$

$$\therefore 606 + 20.2p = 610 + 20p$$

$$\therefore 20.2p - 20p = 610 - 606$$

$$\therefore 0.2p = 4$$

$$\therefore p = \frac{4}{0.2} = 4 \times 2 = 20$$

$$\therefore p = 20$$

Question 6.

There are 68 students of 9th standard from Model Highschool, Nandpur. They have scored following marks out of 80, in written exam of mathematics.

70, 50, 60, 66, 45, 46, 38, 30, 40, 47, 56, 68,
80, 79, 39, 43, 57, 61, 51, 32, 42, 43, 75, 43,
36, 37, 61, 71, 32, 40, 45, 32, 36, 42, 43, 55,
56, 62, 66, 72, 73, 78, 36, 46, 47, 52, 68, 78,
80, 49, 59, 69, 65, 35, 46, 56, 57, 60, 36, 37,
45, 42, 70, 37, 45, 66, 56, 47

By taking classes 30 – 40, 40 – 50, prepare the less than type cumulative frequency table. Using the table, answer the following questions:

- i. How many students have scored marks less than 80?
- ii. How many students have scored marks less than 40?
- iii. How many students have scored marks less than 60?

Solution:

Class

- Digvijay
- Arjun

Class (Marks)	Tally Marks	Frequency (No. of students)	Less than type cumulative frequency
30 – 40		14	14
40 – 50		20	$14 + 20 = 34$
50 – 60		11	$34 + 11 = 45$
60 – 70		12	$45 + 12 = 57$
70 – 80		9	$57 + 9 = 66$
80 – 90		2	$66 + 2 = 68$
		N = 68	

- i. 66 students have scored marks less than 80.
- ii. 14 students have scored marks less than 40.
- iii. 45 students have scored marks less than 60.

Question 7.

By using data in example (6), and taking classes 30 – 40, 40 – 50,... prepare equal to or more than type cumulative frequency table and answer the following questions based on it.

- i. How many students have scored marks 70 or more than 70?
- ii. How many students have scored marks 30 or more than 30?

Solution:

Class (Marks)	Frequency (No. of students)	More than or equal to type Cumulative Frequency
30 – 40	14	68
40 – 50	20	$68 - 14 = 54$
50 – 60	11	$54 - 20 = 34$
60 – 70	12	$34 - 11 = 23$
70 – 80	9	$23 - 12 = 11$
80 – 90	2	$11 - 9 = 2$
	N = 68	

- Digvijay
- Arjun

- i. 11 students have scored marks 70 or more than 70.
- ii. 68 students have scored marks 30 or more than 30.

Question 8.

There are 10 observations arranged in ascending order as given below.

45, 47, 50, 52, JC, JC + 2, 60, 62, 63, 74. The median of these observations is 53.

Find the value of JC. Also find the mean and the mode of the data.

Solution:

i. Given data in ascending order:

45, 47, 50, 52, x, JC+2, 60, 62, 63, 74.

∴ Number of observations (n) = 10 (i.e., even)

∴ Median is the average of middle two observations

Here, the 5th and 6th numbers are in the middle position.

$$\therefore \text{Median} = \frac{(x) + (x+2)}{2}$$

$$\therefore 53 = \frac{2x+2}{2}$$

$$\therefore 106 = 2x + 2$$

$$\therefore 106 - 2 = 2x$$

$$\therefore 104 = 2x$$

$$\therefore x = 52$$

∴ The given data becomes:

45, 47, 50, 52, 52, 54, 60, 62, 63, 74.

$$\begin{aligned} \text{ii. Mean} &= \frac{\text{The sum of all observations in the data}}{\text{Total number of observations}} \\ &= \frac{45+47+50+52+52+54+60+62+63+74}{10} \\ &= \frac{559}{10} = 55.9 \end{aligned}$$

∴ The mean of the given data is 55.9.

iii. Given data in ascending order:

45, 47, 50, 52, 52, 54, 60, 62, 63, 74.

∴ The observation repeated maximum number of times = 52

∴ The mode of the given data is 52.

- Digvijay
- Arjun

Maharashtra Board Class 9 Maths Chapter 7 Statistics Problem Set 7

Intext Questions and Activities

Question 1.

To show following information diagrammatically, which type of bar-diagram is suitable?

- i. Literacy percentage of four villages.
- ii. The expenses of a family on various items.
- iii. The numbers of girls and boys in each of five divisions.
- iv. The number of people visiting a science exhibition on each of three days.
- v. The maximum and minimum temperature of your town during the months from January to June.
- vi. While driving a two-wheeler, number of people wearing helmets and not wearing helmet in 100 families.

(Textbook pg. no. 112)

Solution:

- i. Percentage bar diagram
- ii. Sub-divided bar diagram
- iii. Sub-divided bar diagram
- iv. Sub-divided bar diagram
- v. Sub-divided bar diagram
- vi. Sub-divided bar diagram

Question 2.

You gather information for several reasons. Take a few examples and discuss whether the data is primary or secondary.

(Textbook pg. no, 113)

[Students should attempt the above activity on their own.]

AllGuidesite –

- *Digvijay*
- *Arjun*

AllGuidesite