

Class - 9

Practice set 1

(1) Write the following sets in roster form.

- (i) Set of even numbers
- (ii) Set of even prime numbers from 1 to 50
- (iii) Set of negative integers
- (iv) Seven basic sounds of a sargam (sur)

(2) Write any two sets by listing method and by rule method.

(3) Write the following sets using listing method.

- (i) All months in the Indian solar year.
- (ii) Letters in the word 'COMPLEMENT'.
- (iii) Set of human sensory organs.
- (iv) Set of prime numbers from 1 to 20.
- (v) Names of continents of the world.

(4) Write the following sets using rule method.

- (i) $A = \{1, 4, 9, 16, 25, 36, 49, 64, 81, 100\}$
- (ii) $B = \{6, 12, 18, 24, 30, 36, 42, 48\}$
- (iii) $C = \{S, M, I, L, E\}$
- (iv) $D = \{\text{Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday}\}$
- (v) $X = \{a, e, t\}$

Practice set 2

(1) Decide which of the following are equal sets and which are not ? Justify your answer.

$$A = \{x \mid 3x - 1 = 2\}$$

$$B = \{x \mid x \text{ is a natural number but } x \text{ is neither prime nor composite}\}$$

$$C = \{x \mid x \in \mathbb{N}, x < 2\}$$

(2) Decide whether set A and B are equal sets. Give reason for your answer.

$$A = \text{Even prime numbers}$$

$$B = \{x \mid 7x - 1 = 13\}$$

(3) Which of the following are empty sets ? why ?

$$(i) A = \{a \mid a \text{ is a natural number smaller than zero.}\}$$

$$(ii) B = \{x \mid x^2 = 0\} \quad (iii) C = \{x \mid 5x - 2 = 0, x \in \mathbb{N}\}$$

(4) Write with reasons, which of the following sets are finite or infinite.

$$(i) A = \{x \mid x < 10, x \text{ is a natural number}\}$$

$$(ii) B = \{y \mid y < -1, y \text{ is an integer}\}$$

$$(iii) C = \text{Set of students of class 9 from your school.}$$

$$(iv) \text{Set of people from your village.}$$

$$(v) \text{Set of apparatus in laboratory}$$

$$(vi) \text{Set of whole numbers}$$

$$(vii) \text{Set of rational number}$$

Practice set 3

(1) Take the set of natural numbers from 1 to 20 as universal set and show set X and Y using Venn diagram.

$$(i) X = \{x \mid x \in \mathbb{N}, \text{ and } 7 < x < 15\}$$

$$(ii) Y = \{y \mid y \in \mathbb{N}, y \text{ is prime number from 1 to 20}\}$$

$$(2) U = \{1, 2, 3, 7, 8, 9, 10, 11, 12\}$$

$$P = \{1, 3, 7, 10\}$$

then (i) show the sets U, P and P' by Venn diagram. (ii) Verify $(P')' = P$

(3) $A = \{1, 3, 2, 7\}$ then write any three subsets of A.

(4) (i) Write the subset relation between the sets.

P is the set of all residents in Pune.

M is the set of all residents in Madhya Pradesh.

I is the set of all residents in Indore.

B is the set of all residents in India.

H is the set of all residents in Maharashtra.

(ii) Which set can be the universal set for above sets ?

(5) Which set of numbers could be the universal set for the sets given below?

(i) A = set of multiples of 5,

B = set of multiples of 7.

C = set of multiples of 12

(ii) P = set of integers which are multiples of 4.

T = set of all even square numbers.

(6) Let all the students of a class is an Universal set. Let set A be the students who secure 50% or more marks in Maths. Then write the complement of set A.

Practice set 4

(1) In a hostel there are 125 students, out of which 80 drink tea, 60 drink coffee and 20 drink tea and coffee both. Find the number of students who do not drink tea or coffee.

(2) In a competitive exam 50 students passed in English. 60 students passed in Mathematics. 40 students passed in both the subjects. None of them fail in both the subjects. Find the number of students who passed at least in one of the subjects ?

(3) A survey was conducted to know the hobby of 220 students of class IX. Out of which 130 students informed about their hobby as rock climbing and 180 students informed about their hobby as sky watching. There are 110 students who follow both the hobbies. Then how many students do not have any of the two hobbies ? How many of them follow the hobby of rock climbing only ? How many students follow the hobby of sky watching only ?

Practice set 5

1. Classify the decimal form of the given rational numbers into terminating and non-terminating recurring type.

(1) $\frac{13}{5}$ **(ii)** $\frac{2}{11}$ **(iii)** $\frac{29}{16}$ **(iv)** $\frac{17}{125}$ **(v)** $\frac{11}{6}$.

2. Write the following rational numbers in decimal form.

(i) $\frac{127}{200}$ **(ii)** $\frac{25}{99}$ **(iii)** $\frac{23}{7}$ **(iv)** $\frac{4}{5}$ **(v)** $\frac{17}{8}$

3. Write the following rational numbers in $\frac{p}{q}$ form.

(i) 0.6 **(ii)** 0.37 **(iii)** 3.17 **(iv)** 15.89 **(v)** 2.514

Practice set 6

(1) Show that $4\sqrt{2}$ is an irrational number.

(2) Prove that $3 + \sqrt{5}$ is an irrational number.

(3) Represent the numbers $\sqrt{5}$ and $\sqrt{10}$ on a number line

(4) Write any three rational numbers between the two numbers given below.

(i) 0.3 and -0.5

(ii) -2.3 and -2.33

(iii) 5.2 and 5.3

(iv) -4.5 and -4.6

Practice set 7

(1) State the order of the surds given below.

(i) $\sqrt[3]{7}$ **(ii)** $5\sqrt{12}$ **(iii)** $\sqrt[4]{10}$ **(iv)** $\sqrt{39}$ **(v)** $\sqrt[3]{18}$

(2) State which of the following are surds. Justify.

(i) $\sqrt[3]{51}$ **(ii)** $\sqrt[4]{16}$ **(iii)** $\sqrt{256}$ **(v)** $\sqrt[3]{64}$ **(vi)** $\sqrt{\frac{22}{7}}$

(3) Classify the given pair of surds into like surds and unlike surds.

(i) $\sqrt{52}$, $5\sqrt{13}$ (ii) $\sqrt{68}$, $5\sqrt{3}$ (iii) $4\sqrt{18}$, $7\sqrt{2}$ (iv) $19\sqrt{12}$, $6\sqrt{3}$ (v) $5\sqrt{22}$, $7\sqrt{33}$

(4) Simplify the following surds.

(i) $\sqrt{27}$ (ii) $\sqrt{50}$ (iii) $\sqrt{250}$ (iv) $\sqrt{112}$ (v) $\sqrt{168}$

(5) Multiply

(i) $\sqrt{3}(\sqrt{7} - \sqrt{3})$ (ii) $(\sqrt{5} - \sqrt{7})^2$ (iii) $(3\sqrt{2} - \sqrt{3})(4\sqrt{3} - \sqrt{2})$

Practice set 8

1. State whether the given algebraic expressions are polynomials ? Justify.

(i) $y + \frac{1}{y}$ (ii) $2 - 5\sqrt{x}$ (iii) $x^2 + 7x + 9$

2. Write the polynomial in x using the given information.

(i) Monomial with degree 7

(ii) Binomial with degree 35

(iii) Trinomial with degree 8

3. Write the degree of the given polynomials.

(i) $7y - y^3 + y^5$ (ii) $xyz + xy - z$ (iii) $m^3n^7 - 3m^5n + mn$ (iv) x^0 (v) x^2

4. Classify the following polynomials as linear, quadratic and cubic polynomial.

(i) $2x^2 + 3x + 1$ (ii) $5p$ (v) a^2 (vi) $3r^3$

5. Write the following polynomials in standard form.

(i) $m^3 + 3 + 5m$ (ii) $-7y + y^5 + 3y^3 - \frac{1}{2} + 2y^4 - y$

6. Write the following polynomials in coefficient form.

(i) $x^3 - 2$ (ii) $5y$ (iii) $2m^4 - 3m^2 + 7$ (iv) $-\frac{2}{3}$

7. Write the polynomials in index form.

(i) (1, 2, 3) (ii) (5, 0, 0, -1) (iii) (-2, 2, -2, 2)

Practice set – 9

(1) Use the given letters to write the answer.

(i) There are 'a' trees in the village Lat. If the number of trees increases every year by 'b', then how many trees will there be after 'x' years?

(ii) For the parade there are y students in each row and x such row are formed. Then, how many students are there for the parade in all ?

(iii) The tens and units place of a two digit number is m and n respectively. Write the polynomial which represents the two digit number.

(2) Add the given polynomials.

(i) $x^3 - 2x^2 - 9$; $5x^3 + 2x + 9$

(ii) $-7m^4 + 5m^3 + 2$; $5m^4 - 3m^3 + 2m^2 + 3m - 6$

(iii) $2y^2 + 7y + 5$; $3y + 9$; $3y^2 - 4y - 3$

(3) Subtract the second polynomial from the first.

(i) $2ab^2 + 3a^2b - 4ab$; $3ab - 8ab^2 + 2a^2b$

(4) Multiply the given polynomials.

(i) $2x$; $x^2 - 2x - 1$ (ii) $x^5 - 1$; $x^3 + 2x^2 + 2$ (iii) $2y + 1$; $y^2 - 2y^3 + 3y$

(5) Divide first polynomial by second polynomial and write the answer in the form

'Dividend = Divisor × Quotient + Remainder'.

(i) $x^3 - 64$; $x - 4$ (ii) $5x^5 + 4x^4 - 3x^3 + 2x^2 + 2$; $x^2 - x$

(6) Write down the information in the form of algebraic expression and simplify. There is a rectangular farm with length $(2a^2 + 3b^2)$ metre and breadth $(a^2 + b^2)$ metre. The farmer used a square shaped plot of the farm to build a house. The side of the plot was $(a^2 - b^2)$ metre. What is the area of the remaining part of the farm ?

Practice set 10

1. Divide each of the following polynomials by synthetic division method and also by linear division method. Write the quotient and the remainder.

(i) $(2m^2 - 3m + 10) \div (m - 5)$ (ii) $(x^4 + 2x^3 + 3x^2 + 4x + 5) \div (x + 2)$

(iii) $(y^3 - 216) \div (y - 6)$

(iv) $(2x^4 + 3x^3 + 4x - 2x^2) \div (x + 3)$

(v) $(x^4 - 3x^2 - 8) \div (x + 4)$

(vi) $(y^3 - 3y^2 + 5y - 1) \div (y - 1)$

Practice set 11

(1) For $x = 0$ find the value of the polynomial $x^2 - 5x + 5$.

(3) If $p(m) = m^3 + 2m^2 - m + 10$ then $p(a) + p(-a) = ?$

(4) If $p(y) = 2y^3 - 6y^2 - 5y + 7$ then find $p(2)$.

Practice set 12

(1) Find the value of the polynomial $2x - 2x^3 + 7$ using given values for x .

(i) $x = 3$ (ii) $x = -1$ (iii) $x = 0$

(2) For each of the following polynomial, find $p(1)$, $p(0)$ and $p(-2)$.

(i) $p(x) = x^3$ (ii) $p(y) = y^2 - 2y + 5$ (iii) $p(x) = x^4 - 2x^2 - x$

(3) If the value of the polynomial $m^3 + 2m + a$ is 12 for $m = 2$, then find the value of a .

(4) For the polynomial $mx^2 - 2x + 3$ if $p(-1) = 7$ then find m

(5) Divide the first polynomial by the second polynomial and find the remainder using factor theorem.

(i) $(x^2 - 7x + 9) ; (x + 1)$ (ii) $(2x^3 - 2x^2 + ax - a) ; (x - a)$ (iii) $(54m^3 + 18m^2 - 27m + 5) ; (m - 3)$

(6) If the polynomial $y^3 - 5y^2 + 7y + m$ is divided by $y + 2$ and the remainder is 50 then find the value of m

(7) Use factor theorem to determine whether $x + 3$ is factor of $x^2 + 2x - 3$ or not.

(8) If $(x - 2)$ is a factor of $x^3 - mx^2 + 10x - 20$ then find the value of m .

(9) By using factor theorem in the following examples, determine whether $q(x)$ is a factor $p(x)$ or not.

(i) $p(x) = x^3 - x^2 - x - 1$, $q(x) = x - 1$

(ii) $p(x) = 2x^3 - x^2 - 45$, $q(x) = x - 3$

(10) If $(x^{31} + 31)$ is divided by $(x + 1)$ then find the remainder.

(11) Show that $m - 1$ is a factor of $m^{21} - 1$ and $m^{22} - 1$.

(12) If $x - 2$ and $x - \frac{1}{2}$ both are the factors of the polynomial $nx^2 - 5x + m$, then show that $m = n = 2$

(13) (i) If $p(x) = 2 + 5x$ then $p(2) + p(-2) - p(1)$.

Practice set 13

(1) Find the factors of the polynomials given below.

(i) $2x^2 + x - 1$ (ii) $2m^2 + 5m - 3$ (iii) $12x^2 + 61x + 77$ (iv) $3y^2 - 2y - 1$

(2) Factorize the following polynomials.

(i) $(x^2 - x)^2 - 8(x^2 - x) + 12$

(ii) $(x - 5)^2 - (5x - 25) - 24$

(iii) $(x^2 - 6x)^2 - 8(x^2 - 6x + 8) - 64$

(iv) $(x^2 - 2x + 3)(x^2 - 2x + 5) - 35$

(v) $(y + 2)(y - 3)(y + 8)(y + 3) + 56$

(vi) $(y^2 + 5y)(y^2 + 5y - 2) - 24$

(vii) $(x - 3)(x - 4)^2(x - 5) - 6$

Practice set 14

(1) From the following pairs of numbers, find the reduced form of ratio of first number to second number.

(i) 72, 60 (ii) 38, 57 (iii) 52, 78

(2) Find the reduced form of the ratio of the first quantity to second quantity.

(i) 700 Rs, 308 Rs

- (ii) 14 Rs, 12 Rs. 40 paise.
- (iii) 5 litre, 2500 ml
- (iv) 3 years 4 months, 5 years 8 months
- (v) 3.8 kg, 1900 gm
- (vi) 7 minutes 20 seconds, 5 minutes 6 seconds.

(3) Express the following percentages as ratios in the reduced form.

- (i) 75 : 100 (ii) 44 : 100 (iii) 6.25% (iv) 52 : 100 (v) 0.64%

(4) Three persons can build a small house in 8 days. To build the same house in 6 days, how many persons are required?

(5) Convert the following ratios into percentage.

- (i) 15 : 25 (ii) 47 : 50 (iii) $\frac{7}{10}$ (iv) $\frac{546}{600}$ (v) $\frac{7}{16}$

(6) The ratio of ages of Abha and her mother is 2 : 5. At the time of Abha's birth her mothers age was 27 year. Find the present ages of Abha and her mother.

(7) Present ages of Vatsala and Sara are 14 years and 10 years respectively. After how many years the ratio of their ages will become 5 : 4?

(8) The ratio of present ages of Rehana and her mother is 2 : 7. After 2 years, the ratio of their ages will be 1 : 3. What is Rehana's present age ?

Practice set 15

(1) Find the following ratios.

- (i) The ratio of radius to circumference of the circle.
- (ii) The ratio of circumference of circle with radius r to its area.
- (iii) The ratio of diagonal of a square to its side, if the length of side is 7 cm.
- (iv) The lengths of sides of a rectangle are 5 cm and 3.5 cm. Find the ratio of its perimeter to area.

(2) (i) The ratio of present ages of Albert and Salim is 5 : 9. Five years hence ratio of their ages will be 3 : 5. Find their present ages.

(ii) The ratio of length and breadth of a rectangle is 3 : 1, and its perimeter is 36 cm. Find the length and breadth of the rectangle.

(iii) The ratio of two numbers is 31 : 23 and their sum is 216. Find these numbers.

(iv) If the product of two numbers is 360 and their ratio is 10 : 9, then find the numbers.

(3) $(x + 3) : (x + 11) = (x - 2) : (x + 1)$ then find the value of x.

Practice set 16

(1) Which number should be subtracted from 12, 16 and 21 so that resultant numbers are in continued proportion?

(2) If $(28-x)$ is the mean proportional of $(23-x)$ and $(19-x)$ then find the value of x.

(3) Three numbers are in continued proportion, whose mean proportional is 12 and the sum of the remaining two numbers is 26, then find these numbers.

(4) If $(a + b + c) (a - b + c) = a^2 + b^2 + c^2$ show that a, b, c are in continued proportion.

Practice set 17

(1) By using variables x and y form any five linear equations in two variables.

(2) Write five solutions of the equation $x + y = 7$.

(3) Solve the following sets of simultaneous equations.

- (i) $x + y = 4$; $2x - 5y = 1$
- (ii) $2x + y = 5$; $3x - y = 5$
- (iii) $3x - 5y = 16$; $x - 3y = 8$
- (iv) $2y - x = 0$; $10x + 15y = 105$
- (v) $2x + 3y + 4 = 0$; $x - 5y = 11$
- (vi) $2x - 7y = 7$; $3x + y = 22$

Practice set 18

(1) In an envelope there are some 5 rupee notes and some 10 rupee notes. Total amount of these notes together is 350 rupees. Number of 5 rupee notes are less by 10 than number of 10 rupee notes. Then find the number of 5 rupee and 10 rupee notes.

- (2) The denominator of a fraction is 1 more than twice its numerator. If 1 is added to numerator and denominator respectively, the ratio of numerator to denominator is 1 : 2. Find the fraction.
- (3) The sum of ages of Priyanka and Deepika is 34 years. Priyanka is elder to Deepika by 6 years. Then find their today's ages.
- (4) The total number of lions and peacocks in a certain zoo is 50. The total number of their legs is 140. Then find the number of lions and peacocks in the zoo.
- (5) Sanjay gets fixed monthly income. Every year there is a certain increment in his salary. After 4 years, his monthly salary was Rs. 4500 and after 10 years his monthly salary became 5400 rupees, then find his original salary and yearly increment.
- (6) The price of 3 chairs and 2 tables is 4500 rupees and price of 5 chairs and 3 tables is 7000 rupees, then find the price of 2 chairs and 2 tables.
- (7) The sum of the digits in a two-digits number is 9. The number obtained by interchanging the digits exceeds the original number by 27. Find the two-digit number.
- (9) Divide a rope of length 560 cm into 2 parts such that twice the length of the smaller part is equal to $\frac{1}{3}$ of the larger part. Then find the length of the larger part.
- (10) In a competitive examination, there were 60 questions. The correct answer would carry 2 marks, and for incorrect answer 1 mark would be subtracted. Yashwant had attempted all the questions and he got total 90 marks. Then how many questions he got wrong ?

Practice set 19

- Alka spends 90% of the money that she receives every month, and saves Rs. 120. How much money does she get monthly ?
- Sumit borrowed a capital of Rs. 50,000 to start his food products business. In the first year he suffered a loss of 20%. He invested the remaining capital in a new sweets business and made a profit of 5%. How much was his profit or loss computed on his original capital ?
- Nikhil spent 5% of his monthly income on his children's education, invested 14% in shares, deposited 3% in a bank and used 40% for his daily expenses. He was left with a balance of Rs. 19,000. What was his income that month ?
- Mr. Sayyad kept Rs. 40,000 in a bank at 8% compound interest for 2 years. Mr. Fernandes invested Rs. 1,20,000 in a mutual fund for 2 years. After 2 years, Mr. Fernandes got Rs. 1,92,000. Whose investment turned out to be more profitable ?
- Sameera spent 90% of her income and donated 3% for socially useful causes. If she left with Rs. 1750 at the end of the month, what was her actual income ?

Practice set 20

- (1) Observe the table given below. Check and decide, whether the individuals have to pay income tax.

S. No.	Individuals	Age	Taxable Income (Rs)	Will have to pay income tax or not
(i)	Miss Nikita	27	Rs. 2,34,000	
(ii)	Mr. Kulkarni	36	Rs. 3,27,000	
(iii)	Miss Mehta	44	Rs. 5,82,000	
(iv)	Mr. Bajaj	64	Rs. 8,40,000	
(v)	Mr. Desilva	81	Rs. 4,50,000	

- (2) Mr. Kartarsingh (age 48 years) works in a private company. His monthly income after deduction of allowances is Rs. 42,000 and every month he contributes Rs. 3000 to GPF. He has also bought Rs. 15,000 worth of NSC (National Savings Certificate) and donated Rs. 12,000 to the PM's Relief Fund. Compute his income tax.

Practice set 21

- (1) Classify following information as primary or secondary data.

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

Practice set 22

- (1) For class interval 20-25 write the lower class limit and the upper class limit.
- (2) Find the class-mark of the class 35-40.
- (3) If class mark is 10 and class width is 6 then find the class.
- (4) 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.
- (5) The value of π 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.
- (6) In a school, 46 students of 9th standard, were told to measure the lengths of the pencils in their compass-boxes in centimeters. 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 inclusive classes 0-5, 5-10, 10-15.... prepare a grouped frequency distribution table.
- (7) 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.
- (8) 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 rupees 350 or more.

Practice set 23

- (1) 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 ?
(iv) What is the cumulative frequency of equal to or more than type of the class 0-10?
- (2) 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.

Practice set 24

- (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.
- (2) Find the median of the observations, 59, 75, 68, 70, 74, 75, 80.
- (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
- (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.
- (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.

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