

SAINIK SCHOOL IMPHAL
WINTER VACATION 2025-26
HOMEWORK/ASSIGNMENT
Class-VIII

COMPUTER

SAINIK SCHOOL IMPHAL
WINTER VACATION HOMEWORK/ASSIGNMENT FOR CLASS VIII: 2025-26
SUBJECT: COMPUTER SCIENCE

Instructions:

- Question I, II and III should be written in the **Computer Homework Notebook**.
- Question IV should be done in **A4 size paper**. Please write **only on one side of the page**.

I. Answer the following questions based on Chapter 6: Computer Networks

1. Explain the various topologies of networking.
2. Differentiate between BUS and a STAR topology.
3. How does a RING topology differ from a BUS topology?
4. Explain the various forms of Networking.
5. How does a LAN differ from a MAN?
6. How does a LAN differ from a WAN?
7. Name the various communication channels of Networking.
8. Explain the following in brief.
9. Modems
10. Ports
11. Buses
12. Network Cards
13. Client
14. Define the following terms.
 - (a) Networking
 - (b) Nodes
 - (c) Link
 - (d) Internet
 - (e) URL
 - (f) IP Address
 - (g) DNS
 - (h) Web Page
 - (i) Website
 - (j) Web Portal
 - (k) Switch
 - (l) Hub
 - (m) Router
 - (n) Gateways
 - (o) Hyperlinks
 - (p) Hyper Text
 - (q) Bandwidth
 - (r) Server
 - (s) Network Protocols

II. Answer the following questions based on Chapter 7: Cloud Computing

1. Write about the advantages of Cloud Computing.

2. Explain the disadvantages of Cloud Computing.
3. Name the various services of Cloud Computing.
4. Write about the various types of Cloud.
5. Explain the three components of Cloud.
6. Name the various cloud storage applications in use.
7. Define the following terms:
 - (a) Cloud Computing
 - (b) Client Computers
 - (c) Jumpshare
 - (d) Dropbox
 - (e) iCloud

III. Answer the following questions based on Chapter 9: AI – History, Domains, Applications and Ethics

1. What is IBM's Watson?
2. What are the parts of a Smart City Framework?
3. Define the use of Gesture Recognition.
4. What do you mean by AI Ethics?
5. Explain the domains of AI.
6. Explain any two applications of AI.
7. Write the objectives of Smart Cities.

IV. Write an assignment on the topic “Topology” in A4 size paper.

The following topologies should be included:

- Point to Point Topology
- Mesh Topology
- Star Topology
- Bus Topology
- Ring Topology
- Tree Topology
- Hybrid Topology

The sequence of the Assignment should be as follows:

- Cover Page
- Contents
- Introduction
- Different topologies

One topology should be written in one page with related diagram.

Details are given below.

Cover Page

“Network Topology”

An assignment submitted
for Term 2 Examination: 2025-26

Submitted By:

Cdt

Adm No

Class... Section ...

Submitted To:

Sir Tiken

TGT Computer Science

SAINIK SCHOOL IMPHAL

2nd Page

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Introduction

Introduction

(Explain the topology with a diagram)

Point to Point Topology

(Explain the topology with a diagram)

Mesh Topology

(Explain the topology with a diagram)

Star Topology

(Explain the topology with a diagram)

Bus Topology

(Explain the topology with a diagram)

Ring Topology

(Explain the topology with a diagram)

Tree Topology

(Explain the topology with a diagram)

Hybrid Topology

(Explain the topology with a diagram)

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ENGLISH

WINTER VACATION HOMEWORK

ENGLISH

CL 8

A. TENSES – Present & Past Tenses

A. Fill in the blanks (Present Tenses)

1. She usually _ (go) for a walk in the evening.
2. The children _ (play) outside right now.
3. My mother _ (cook) dinner while I _ (set) the table.
4. Water _ (boil) at 100°C.
5. I _ (study) English this week because I have a test.

B. Fill in the blanks (Past Tenses)

6. Yesterday, we _ (meet) our old teacher at the market.
7. While I _ (walk) to school, it suddenly _ (start) raining.
8. He _ (finish) his homework before he _ (go) out to play.
9. They _ (watch) a movie when the electricity _ (go) off.
10. Last year, we _ (visit) Shimla during winter vacation.

C. Rewrite the sentences using the correct tense form

11. She is knowing the answer.
12. The boys plays cricket every day.
13. When I reach the station, the train left.
14. He was reading the book when I call him yesterday.
15. We eat dinner when the guests arrived.

D. BOOK REVIEW TASK

Read ANY ONE of the following novels and write a ONE-PAGE book review.

1. "The Secret Garden" – Frances Hodgson Burnett
2. "The Adventures of Tom Sawyer" – Mark Twain
3. "Matilda" – Roald Dahl

Your Book Review Should Include:

Title & Author

Characters

Setting

Summary (in 8–10 lines)

Your Favourite Part

Why you would recommend/not recommend it

Moral / Message

C. REPORTED SPEECH – 10 Questions

Convert the following sentences into Reported Speech:

1. She said, "I am feeling cold today."
2. Rohan said to his mother, "I will finish my work soon."
3. The teacher said, "Honesty is the best policy."
4. He said, "I bought a new jacket yesterday."
5. Meena said to her friend, "Are you coming for the picnic?"
6. The doctor said to the patient, "Take your medicines on time."
7. They said, "We are planning a trip to Manali."
8. The guard said, "No one is allowed inside after 8 p.m."
9. She said to him, "Please help me with this project."
10. The coach said, "Do not waste your time during practice."

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GEOGRAPHY

Geography Winter vacation assignments

Class 8

1. Distinguish between agro-based industries and mineral based industries.
2. Explain three factors that influence the location of industries.
3. Write any two measures to control industrial pollution.

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HINDI

सैनिक स्कूल इम्फाल
शीतकालीन अवकाश गृह-कार्य

विषय : हिन्दी

कक्षा : VIII

निर्देश :

- सभी प्रश्नों के उत्तर गृहकार्य पुस्तिका में लिखें।
- उत्तर स्वच्छ, स्पष्ट एवं सुंदर हस्तलेख में होने चाहिए।
- सभी कार्य स्वयं करें।

प्रश्न 1. पाठ्य-पुस्तक के 'साँप और बाज़' और 'क्या निराश हो जाए' को ध्यानपूर्वक पढ़िए। इन दोनों पाठों के सभी प्रश्न-उत्तर गृहकार्य पुस्तिका में लिखिए तथा उन्हें याद कीजिए।

प्रश्न 2. पाठ 'साँप और बाज़' और 'क्या निराश हो जाए' से किसी एक पाठ का सारांश अपने शब्दों में 8-10 वाक्यों में लिखिए।

प्रश्न 3 "हिन्दी भाषा का महत्व" विषय पर अनुच्छेद लिखिए।

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MANIPURI

Winter vacation home work for class-viii

Subject: Manipuri

1. ক্ষীৰ্ণচৰ্চাৰ্ণি নথি অক্ষল্লয় ক্ষৰ্ণ ক্ষয়/ক্ষয় নক্স ॥

2. ল'ৰ'ৰ্ণি নক্স প'ৰ্ণি ক্ষৰ্ণ অক্ষি লক্ষ নক্স ॥

3. পৰ্ণিৰ্ণয়ৰ্ণি ক্ষৰ্ণিৰ্ণ ক্ষৰ্ণিৰ্ণ ল'ৰ্ণিৰ্ণ নক্স ॥

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MATHEMATICS

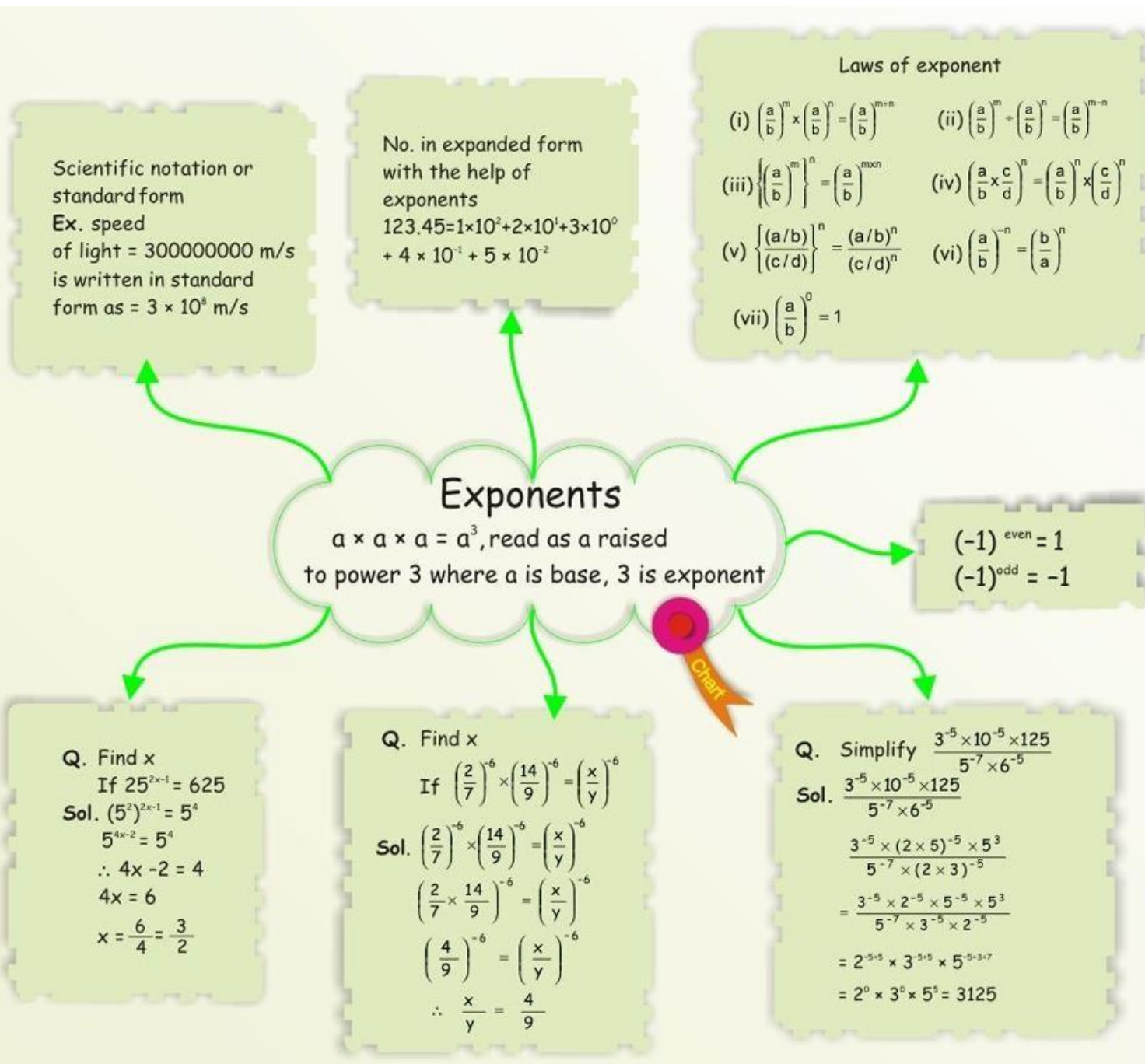
Vacation Homework

Class VIII Maths

Prepare neat and clean concept maps for the following chapter:

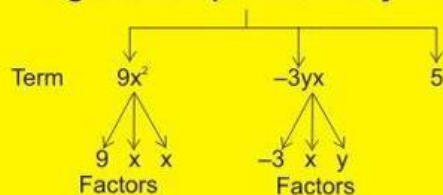
1. Comparing Quantities
2. Algebraic expression and identities
3. Mensuration
4. Exponents and powers
5. Direct and inverse proportions
6. Factorisation

Sample concept maps are given below for your reference.



Algebraic Expression

Algebraic Exp. : $9x^2 - 3xy + 5$



Like & Unlike terms

Like term having same algebraic factor..

Ex. $3xy, 5xy$

$$3xy = 3 \times x \times y$$

$$5xy = 5 \times x \times y$$

Unlike term having diff. algebraic factor.

Ex. $4x^2y = 4 \times x \times x \times y$

$$2xy = 2 \times x \times y.$$

Degree

Highest power of the variable in a term.

Ex. $3x^2 + x + 1$ deg 2

Ex. $x^2y^2z^2 + x^2 + 1$ deg 3

* if term contain more than one variable we have to add the power of all variable.

Ex. $-3x^2y$

- Numerical coefficient is -3
- Coefficient of y is $-3x^2$
- Coefficient of x^2 is $-3y$

Multiplication

Ex. Multiply $(x + y)(x^2 + y^2 - xy)$

$$\begin{aligned} \text{Sol. } & x(x^2 + y^2 - xy) + y(x^2 + y^2 - xy) \\ & x^3 + xy^2 - x^2y + y^3 - xy^2 + yx^2 \\ & = x^3 - y^3 \end{aligned}$$

Types of Algebraic Exp

According to the No. of terms

Monomial \longrightarrow Single term Ex. $2xy$

Binomial \longrightarrow Two terms Ex. $x + y$

Trinomial \longrightarrow Three terms Ex. $x + y + z$

Multinomial \longrightarrow More than 3 term
Ex. $x^3 + x^2 + 7x + 1$

Addition & Subtraction

We can add & subtract only the like terms.

Ex. Add $5ab, 4ab$

$$\begin{aligned} \text{Sol. } & 5ab + 4ab \\ & = (5+4)ab = 9ab \end{aligned}$$

Ex. Subtract of $7xy$ from $2xy$

$$\text{Sol. } 2xy - 7xy = (2-7)xy = -5xy.$$

Division

Ex. Divide.

$15x^3 + 12x^2 + 21x$ by $3x$

$$\begin{aligned} \text{Sol. } & \frac{15x^3 + 12x^2 + 21x}{3x} \\ & = \frac{15x^3}{3x} + \frac{12x^2}{3x} + \frac{21x}{3x} \\ & = 5x^2 + 4x + 7 \end{aligned}$$

* When the remainder is zero the divisor is called a factor of the dividend..

Ex. Find the value of a if $2x - 3$ is a factor of $2x^4 - x^3 - 3x^2 - 2x + a$.

Sol. First we divide $2x^4 - x^3 - 3x^2 - 2x + a$ by $2x - 3$.

$$\begin{array}{r} 2x-3 \overline{) 2x^4 - x^3 - 3x^2 - 2x + a} \\ \underline{2x^4 - 3x^3} \\ 2x^3 - 3x^2 - 2x + a \\ \underline{2x^3 - 3x^2} \\ -2x + a \\ \underline{-2x + 3} \\ a - 3 \end{array}$$

$2x - 3$ is a factor of $2x^4 - x^3 - 3x^2 - 2x + a$ if, $a - 3 = 0$ Hence, $a = 3$.

Identities

1. $(a + b)^2 = a^2 + 2ab + b^2$
2. $(a - b)^2 = a^2 - 2ab + b^2$
3. $(a + b)(a - b) = a^2 - b^2$

Problem Based on Identity

Q. Expand $(2x - 5y)^2$

Sol. $(2x - 5y)^2$
 $= (2x)^2 - 2(2x)(5y) + (5y)^2$
 $= 4x^2 - 20xy + 25y^2$

Q. Find the value of $\frac{107^2 - 103^2}{210}$

Sol. $\frac{107^2 - 103^2}{210} = \frac{(107 + 103)(107 - 103)}{210}$
 $= \frac{210 \times 4}{210} = 4$

Q. If $x + \frac{1}{x} = 3$ find $x^2 + \frac{1}{x^2}$

Sol. $x + \frac{1}{x} = 3$
 $\left(x + \frac{1}{x}\right)^2 = 3^2$
 $x^2 + 2x \times \frac{1}{x} + \frac{1}{x^2} = 9$
 $x^2 + 2 + \frac{1}{x^2} = 9$
 $x^2 + \frac{1}{x^2} = 9 - 2 = 7$

Algebraic Identities

An identity is an equality, which is true for all values of the variables.

Chart

Factorization

The process of finding two or more expression whose product is the given expression is called factorization.

I. Factorization by taking out the common factor.

Ex. $8x^3y^2 - 4yx = 4xy(2x^2y - 1)$

Ex. $x(x + 3) + 2(x + 3) = (x + 3)(x + 2)$

II. Factorization by grouping.

Ex. $ax + by + ay + bx = ax + ay + bx + by$
 $= a(x + y) + b(x + y) = (x + y)(a + b)$

III. Factorization the difference of two squares.

$a^2 - b^2 = (a + b)(a - b)$
 Ex. $9x^2 - 16y^2 = (3x)^2 - (4y)^2$
 $= (3x - 4y)(3x + 4y)$

IV. Factorization of quadratic trinomial

Ex. Factorize $x^2 + 9x + 18$

Sol. $x^2 + 9x + 18 = x^2 + 6x + 3x + 18$
 $= x(x + 6) + 3(x + 6)$
 $= (x + 6)(x + 3)$

Ex. Factorize $9x^2 - 22x + 8$

Sol. $9x^2 - 22x + 8 = 9x^2 - 18x - 4x + 8$
 $= 9x(x - 2) - 4(x - 2)$
 $= (x - 2)(9x - 4)$

RULES FOR SOLVING

We can add or subtract same number on both side
 $x + 7 = 8$
 $x + 7 - 7 = 8 - 7$
 $x = 1$

We can multiply or divide both side by non zero number
 $3x = 6$
 $\frac{3x}{3} = \frac{6}{3}$
 $x = 2$

Keep the variable on one side and constant on other side
 $3x + 7 = 2x + 10$
 $3x - 2x = 10 - 7$
 $x = 3$

SOLUTION

Value of variable which satisfy equation
 $x = 3$ is solution of $3x + 1 = 10$ because
 $3(3) + 1 = 10$
 $9 + 1 = 10$
 $10 = 10$

LINEAR EQUATION IN ONE VARIABLE

A linear equation which has only one variable is called linear equation in one variable. For example : $x + 3 = 5$.

SOME PROBLEM

Solve: $\frac{2x+1}{3x-5} = \frac{7}{3}$

Sol. $\frac{2x+1}{3x-5} = \frac{7}{3}$

By cross Multiplication
 $3(2x+1) = 7(3x-5)$
 $3 \times (2x) + 3 \times (1) = 7 \times (3x) - 7 \times (5)$
 $6x + 3 = 21x - 35$
 $21x - 6x = 3 + 35$
 $15x = 38$
 $x = 38/15$

Solve: $\frac{x}{2} - \frac{3x+1}{5}$

Sol. $\frac{x}{2} - \frac{3x+1}{5}$
 $\frac{5(x) - 2(3x+1)}{10} = 6$
 $\frac{5x - 2(3x) - 2(1)}{10} = 6$
 $\frac{5x - 6x - 2}{10} = 6$
 $-x - 2 = 60$
 $x = -62$

English word

More than, exceeds older than,
 Less than, decreased, younger than
 Times, of, product
 Divided by, quotient, per, for
 What, how many, etc.

Mathematical meaning

+
 -
 ×
 ÷
 x (or some other variable)

APPLICATION

Fraction	Money	Geometry	Age
Dr. of fraction is 5 more than Nr Nr.=x, Dr.=x+5 Fraction = $\frac{x}{x+5}$	No. of 2 Rs. Coin is 3 times the No. of 5 Rs. Coin No. of 5 Rs. Coin = x, No. of 2 Rs. Coin = 3x Total money = $5 \times (x) + 2 \times (3x)$	Length of Rectangle is 5 less than twice the breadth. $b = x$ $l = 2x - 5$	My present age = x yr. After 2 yr. my age will be (x+2) yr. Before 3 yr. my age was (x-3) yr.

Problem on percentage

Ex. In 800 student 25% are girls, find the number of boys.

Sol. Boys percentage
= $(100 - 25)\%$
= 75%

No. of boys = 75% of total student
= $\frac{75}{100} \times 800 = 600$

Ex. Ram salary is decreased by 20% and then increased by 20% find % change in his salary.

Sol. Let his salary is Rs. 100
His salary after 20% decrease
= $100 - 20\%$ of 100
= $100 - 20 = 80$

Now when his salary increased by 20% it become

= $80 + 20\%$ of 80
= $80 + 16 = 96$

So Ram income is decreased by $(100 - 96) = 4\%$

% Increase and Decrease

$$\% \text{ Increase} = \frac{\text{increase}}{\text{original value}} \times 100$$

$$\% \text{ Decrease} = \frac{\text{decrease}}{\text{original value}} \times 100$$

Profit & Loss

$$\text{Profit} = \text{SP} - \text{CP}$$

$$\text{Profit\%} = \frac{\text{SP} - \text{CP}}{\text{CP}} \times 100$$

$$\text{Loss} = \text{CP} - \text{SP}$$

$$\text{Loss\%} = \frac{\text{CP} - \text{SP}}{\text{CP}} \times 100$$

Profit & Loss are Calculated on CP.

$$\text{SP} = \left(\frac{100 + \text{gain\%}}{100} \right) \text{CP}$$

$$\text{SP} = \left(\frac{100 - \text{Loss\%}}{100} \right) \text{CP}$$

Percentage and its Application

Percentage means per hundred or for every hundred

$$x\% = \frac{x}{100} \quad \text{Ex } 25\% = \frac{25}{100} = \frac{1}{4}$$

Value added Tax

Tax is always calculated on the price at which article is sold.

$$\text{SP With tax} = \left(\frac{100 + \text{tax\%}}{100} \right) \text{SP}$$

Q. The cost of article in shop is Rs. 60
The sales tax was 5% find bill amount

Sol. SP = 60, tax% = 5

$$\text{SP With tax} = \left(\frac{100 + 5}{100} \right) \times 60 = 63$$

Ex. A man sold an article at Rs.450 and having a loss of 10% in order to gain 20% at what price should be sold.

Sol. Initially SP = 450
loss = 10%

$$\text{SP} = \left(\frac{100 - \text{loss\%}}{100} \right) \text{CP}$$

$$450 = \left(\frac{100 - 10}{100} \right) \text{CP}$$

$$\text{CP} = \frac{450 \times 100}{90} = 500$$

Now CP = 500
gain = 20%

$$\begin{aligned} \text{So the New SP} &= \left(\frac{100 + \text{gain\%}}{100} \right) \text{CP} \\ &= \left(\frac{100 + 20}{100} \right) 500 \\ &= \text{Rs. 600} \end{aligned}$$

Discount

$$\text{Discount} = \text{MP} - \text{SP}$$

$$\text{Discount} = \frac{\text{MP} - \text{SP}}{\text{MP}} \times 100$$

Discount always given on MP

$$\text{SP} = \frac{100 - \text{Discount\%}}{100} \times \text{MP}$$

Ex. An article marks Rs 600 and a discount of 20% is given find selling price of it.

Sol. MP = 600

Discount % = 20

$$\begin{aligned} \text{SP} &= \left(\frac{100 - \text{discount\%}}{100} \right) \text{MP} \\ &= \left(\frac{100 - 20}{100} \right) \times 600 = \text{Rs. 480} \end{aligned}$$

Direct Variation

Two quantities are said to vary directly if the increase (or decrease) in one quantity cause the increase (or decrease) in other quantity.

Ex. Work and time

Work and No. of man

Distance and speed when time is constant.

Q. Cost 5 article is Rs. 60. Then find the cost of 7 article.

Sol. As cost is in direct variation with no. of article.

$$\frac{N_1}{N_2} = \frac{(\text{cost})_1}{(\text{cost})_2} \Rightarrow \frac{5}{7} = \frac{60}{(\text{cost})_2} \Rightarrow (\text{cost})_2 = \frac{7 \times 60}{5} = \text{Rs. } 84$$

Time & Work

One man can do a piece of work in m days.

Then in one day he can do $\frac{1}{m}$ part of work.

Ex. If A complete a piece of work in 8 days, and B in 6 days. Then no. of day required to complete the work, if they work together.

Sol. A's one day work = $\frac{1}{8}$

B's one day work = $\frac{1}{6}$

Req. day = $\frac{24}{7}$ Days.

$$(A + B)'s \text{ one day work} = \frac{1}{8} + \frac{1}{6} = \frac{3+4}{24} = \frac{7}{24}$$

Direct and Inverse Variation

Inverse Variation

Two quantity are said to vary inversely if the increase or decrease, in one quantity cause the decrease (or increase) in the other quantity.

Ex. No. man, No. of day to complete the work.
Speed & time when distance is constant.

Q. 10 men complete the work in 6 days. No. of days required by 3 men to complete the same work.

Sol. As men and days are in inverse variation.

$$\therefore \frac{m_1}{m_2} = \frac{d_2}{d_1} \Rightarrow \frac{10}{3} = \frac{d_2}{6} \Rightarrow d_2 = \frac{10 \times 6}{3} = 20 \text{ days.}$$

Pipe & Cistern

Q. Pipe A can fill the tank in 8 hr. & Pipe B empty the full tank in 10 hr. If pipe A pipe B open together then find the time required to fill the empty tank.

Sol. In 1hr. A fill $\frac{1}{8}$ Part of tank.

In 1 hr. B empty $\frac{1}{10}$ part of tank.

If they work together in 1 hr. the part of tank filled = $\frac{1}{8} - \frac{1}{10}$
 $= \frac{5-4}{40} = \frac{1}{40}$

Req. time = 40 hr.

Time speed distance

★ Speed = $\frac{\text{distance}}{\text{time}}$

★ Avg. speed = $\frac{\text{total distance}}{\text{total time}}$

★ km/h. = $\frac{5}{18}$ m/sec.

Q. Two trains running in the same direction at 40 km/hr and 22 km/hr completely pass one another in 1 minute. If the length of the Ist train is 125 m., then what will be the length of IIInd train.

Sol. Here the speed will be taken as the difference of their speeds and the distance covered will be the sum of the lengths of the train.

Now in this case

Speed per hour = $40 - 22 = 18$ km/hr.

$\therefore 18$ km/hr. = 5 m/sec.

Let the length of second train = L m.

Distance covered = $(125 + L)$ m

Time taken to cross each other = $\frac{\text{distance}}{\text{speed}}$

$$\Rightarrow 60 = \frac{L + 125}{5} \Rightarrow L = 175 \text{ m.}$$

Compound Interest

$$A = P \left(1 + \frac{R}{100} \right)^T$$

$$CI = A - P$$

In SI, the interest is calculated on principal, for all years, so interest is same for all years.

In CI, the interest is calculated an amount of the previous year so interest is different for all years.

Depreciation

As the time passes the value of object depreciate is called depreciation.

$$A = P \left(1 - \frac{R}{100} \right)^T$$

When interest is calculated QLY

$$A = P \left(1 + \frac{R/4}{100} \right)^{T \times 4}$$

When interest is calculated HLY

$$A = P \left(1 + \frac{R/2}{100} \right)^{T \times 2}$$

When Time Period is in fraction

Ex. $T = 2\frac{3}{4}$ yr.

$$A = P \left(1 + \frac{R}{100} \right)^2 \left(1 + \frac{\frac{3}{4} \times R}{100} \right)$$

When Rate of interest is different for diff. year

$$A = P \left(1 + \frac{R_1}{100} \right)^{T_1} \left(1 + \frac{R_2}{100} \right)^{T_2} \dots$$

If the present population of a town is P, and it is growing at R% P.A.

Then population of town after T year is $P \left(1 + \frac{R}{100} \right)^T$

Then population of town before T year in $\frac{P}{\left(1 + \frac{R}{100} \right)^T}$

Q. In what time a sum of Rs. 1000 become Rs. 1331 at 10% P.A at CI.

Sol. $A = 1331$, $P = 1000$, $R = 10\%$ P. A.

$$A = P \left(1 + \frac{R}{100} \right)^T$$

$$1331 = 1000 \left(1 + \frac{10}{100} \right)^T$$

$$\frac{1331}{1000} = \left(\frac{11}{10} \right)^T$$

$$\left(\frac{11}{10} \right)^3 = \left(\frac{11}{10} \right)^T \Rightarrow T = 3 \text{ yr.}$$

Q. If $CI - SI = 50$ for 2 yr at $R = 10\%$ P.A. find P

$$\text{Sol. } SI = \frac{PRT}{100} = \frac{P \times 10 \times 2}{100} = \frac{P}{5}$$

$$A = P \left(1 + \frac{R}{100} \right)^T = P \left(1 + \frac{10}{100} \right)^2 = P \left(\frac{11}{10} \right)^2 = \frac{121}{100} P$$

$$CI = A - P = \frac{121P}{100} - P = \frac{21P}{100}$$

$$CI - SI = 50$$

$$\frac{21P}{100} - \frac{P}{5} = 50$$

$$\frac{P}{100} = 50 \Rightarrow P = 5000$$

Q. If a money become double in 5 yr. In what time it will become 8 times.

Sol. $A = 2P$, $T = 5$ yr.

$$\therefore A = P \left(1 + \frac{R}{100} \right)^T$$

$$2P = P \left(1 + \frac{R}{100} \right)^5$$

$$\left(1 + \frac{R}{100} \right) = 2^{1/5}$$

$A = 8P$, $T = ?$

$$A = P \left(1 + \frac{R}{100} \right)^T$$

$$8P = P \left(1 + \frac{R}{100} \right)^T$$

$$8 = (2^{1/5})^T$$

$$2^3 = 2^{T/5} \Rightarrow 3 = \frac{T}{5} \Rightarrow T = 15 \text{ yr.}$$

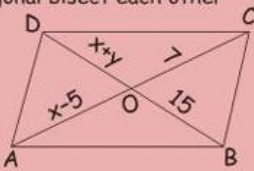
* SI Means : Simple Interest
CI Means : Compound Interest

Property of parallelogram

1. Opposite angle are equal
2. Opposite sides are equal
3. Diagonal bisect each other
4. Diagonal divide parallelogram into two congruent triangle.

Q. If ABCD is \parallel^m find x,y

Sol. In \parallel^m diagonal bisect each other
 $\therefore OA = OC$
 $x - 5 = 7$
 $x = 12$
 and $OB = OD$
 $15 = x + y$
 $15 = 12 + y$
 $y = 3$



Q. ABCD is \parallel^m find all angles of \parallel^m

Sol. $\angle C = \angle A = 50^\circ$
 $\therefore \angle C = 50^\circ$
 as $AB \parallel CD$
 $\therefore \angle A + \angle D = 180^\circ$
 $50^\circ + \angle D = 180^\circ$
 $\angle D = 130^\circ$
 $\angle B = \angle D = 130^\circ$
 $\therefore \angle B = 130^\circ$



Angle sum property

sum of all interior angle of quadrilateral is 360°

Q. Angles of Quadrilateral are in the ratio 1 : 2 : 3 : 4 find angles.

Sol. Let angle are x, 2x, 3x, 4x
 $x + 2x + 3x + 4x = 360$
 $10x = 360$
 $x = 36$
 So, angle are 36, 2×36 , 3×36 , 4×36
 i.e. 36° , 72° , 108° , 144°

Quadrilaterals

A quadrilateral is four sided closed figure.

Types of Quadrilateral

Polygon

Sum of interior angle = $(n-2)180$

Sum of exterior angle = 360°

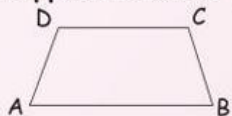
For Regular polygon

Each Interior angle = $\frac{(n-2)180}{n}$

Each Interior angle = $\frac{360}{n}$

Trapezium

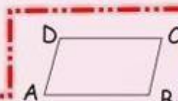
Quadrilateral with one pair of opposite side is parallel.



If $AD = BC$, it is known as isosceles trapezium

Parallelogram

Quadrilateral in which both pair of opposite side is parallel.



Kite

Quadrilateral in which adjacent sides equal but unequal opp. side

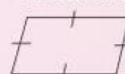


Rectangle



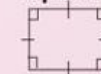
\parallel^m with all angle 90°
 *Length of diagonal are equal

Rhombus



\parallel^m with all side equal
 *diagonal bisect each other at 90°

Square



\parallel^m with all side equal and all angle 90°
 *Length of diagonal are equal
 *Diagonal bisect at 90°

Types of Solids

(a) **Prism** : A solid whose base and top are identical polygons and side faces are rectangles, is called prism.



(b) **Pyramid** : A solid whose base is any polygon and side faces are triangles, all of which meet at the top to form a vertex is called a pyramid. Figure shows a pentagonal pyramid.



(c) **Sphere** : Sphere is a solid whose every point is equidistant from a fixed point. Figure shows the sphere.



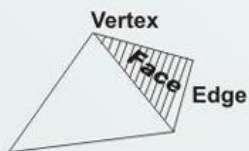
Euler's formula
 $V + F - E = 2$

Vertex ← Face → Edges

eg : For Triangular pyramid

$V = 4$; $E = 6$; $F = 4$

$\therefore 4 + 4 - 6 = 2$



Solid Shapes

Objects that occupy space and have three dimensions [length, breadth and height or depth]

Chart

Polyhedron

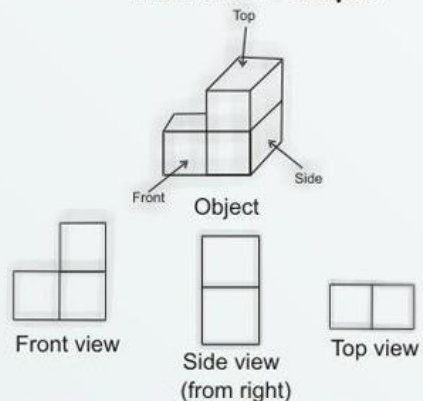
A solid which is made up of polygonal regions called faces is called a polyhedron.

(a) **Convex polyhedrons** : The idea of convex polyhedrons comes from convex polygon.

A convex polyhedron is one whose all faces are convex polygons.

(b) **Regular polyhedron** : A polyhedron is regular if all its faces are regular polygons and same number of faces meet at each vertex.

View of 3-D Shapes

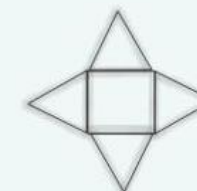
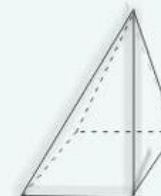
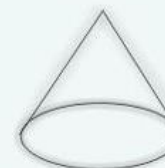
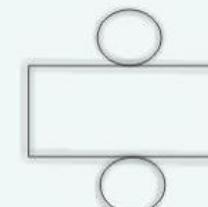
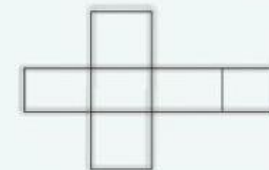
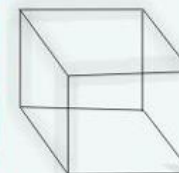


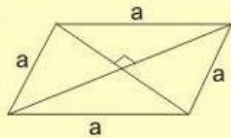
NETS

2 - D Representation of a 3- D figure

Solids

Nets

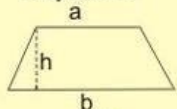


Rhombus

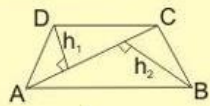
$$\text{Area} = \frac{1}{2} d_1 d_2$$

$$\text{Perimeter} = 4a$$

$$a^2 = \frac{d_1^2}{4} + \frac{d_2^2}{4}$$

Trapezium

$$\text{Area} = \frac{1}{2} (a+b)h$$

Quadrilateral

$$\text{Area} = \frac{1}{2} (AC)(h_1 + h_2)$$

Basic Geometrical figures**Rectangle**

$$A = \ell \times b, P = 2(\ell + b)$$

Square

$$\text{Area} = a^2, P = 4a$$

Parallelogram

$$\text{Area} = \text{Base} \times \text{height}$$

Triangle

$$\text{Area} = \frac{1}{2} \times \text{base} \times \text{Height}$$

$$\text{Eq. } \Delta = \frac{\sqrt{3}}{4} \text{side}^2$$

Circle

$$\text{Area} = \pi r^2$$

$$\text{Circumference} = 2\pi r$$

Mensuration**Plane Figures**

Figure having two dimensions are called plane figures.
Ex. Square, Rectangle, Circle, Triangle etc.

Solid Figures

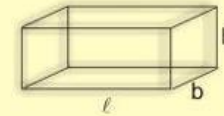
Figure having three dimensions are called solid figures.
Ex. Cube, Cuboid, Cylinder, etc.

Cuboid

$$\text{T.S.A.} = 2(\ell b + bh + h\ell)$$

$$\text{L.S.A.} = 2h(\ell + b)$$

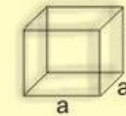
$$V = \ell bh$$

**Cube**

$$\text{L.S.A.} = 4a^2$$

$$\text{T.S.A.} = 6a^2$$

$$V = a^3$$

**Cylinder**

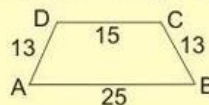
$$\text{C.S.A.} = 2\pi rh$$

$$\text{T.S.A.} = 2\pi r(h+r)$$

$$V = \pi r^2 h$$

**Problem of Plane Figures**

Q. Find the area of trapezium



Sol. Draw CE || AD

\therefore AECD is ||gm

EC = AD = 13

AE = DC = 15

\therefore BE = AB - AE

= 25 - 15

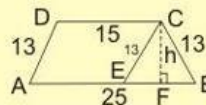
= 10

$$EF = FB = \frac{1}{2} EB = 5$$

In $\triangle CFB$

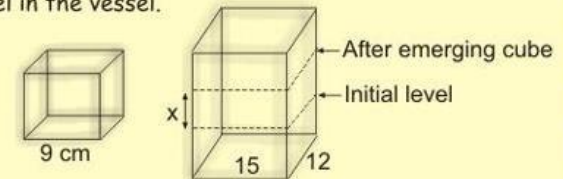
$$h = \sqrt{13^2 - 5^2} = 12$$

$$\text{ar trap. ABCD} = \frac{1}{2} (25 + 15)12 = 240 \text{ sq. unit}$$

**Problem of solid Figures**

Q. A cube of 9 cm edge is immersed completely in a rectangular vessel containing water. If the dimension of the base are 15 cm and 12 cm find rise in water level in the vessel.

Sol.



$$\text{Volume of cube} = \text{Volume of cuboid of height } x$$

$$9 \times 9 \times 9 = 15 \times 12 \times x$$

$$x = \frac{9 \times 9 \times 9}{15 \times 12} = 2.43 \text{ cm}$$

Frequency distribution table

Ex. In a survey of 20 families, each family is found to have the following number of children :

1, 2, 2, 3, 2, 3, 3, 4, 1, 1, 4, 4, 2, 2, 3, 1, 5, 1, 1, 2
Make a frequency distribution table.

Sol. Arrange in ascending order.

1, 1, 1, 1, 1, 1, 2, 2, 2, 2, 2, 2, 3, 3, 3, 3, 4, 4, 4, 5.

Number of children	Tally Marks	No. of families
1		6
2		6
3		4
4		3
5		1
Total		20

Group frequency distribution table

Ex. The marks obtained by 40 students of class VIII in an examination are given below :

18, 8, 12, 6, 8, 16, 12, 5, 23, 2, 16, 23, 2, 10, 12, 9, 7, 6, 5, 3, 5, 13, 21, 13, 15, 20, 24, 1, 7, 21, 16, 13, 18, 23, 7, 3, 18, 17, 16, 4.

Present the data in the form of a frequency distribution using the same class size, one such class being

15 - 20 (where 20 is not included).

Sol. The frequency distribution is as given below :

Marks	Tally marks	Frequency
0-5		6
5-10		11
10-15		7
15-20		9
20-25		7
Total		40

For class 10-15, 10 is lower limit, 15 is upper limit

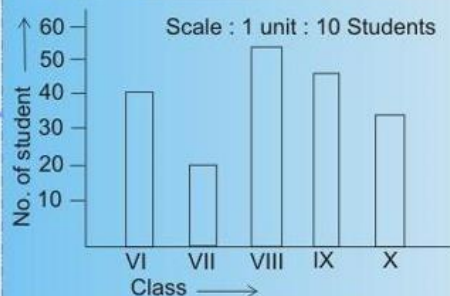
$$\text{Class mark} = \frac{UL + LL}{2} = \frac{10 + 15}{2} = 12.5$$

$$\text{Class size} = UL - LL = 15 - 10 = 5$$

Bar-Chart

Draw the bar graph for the given table.

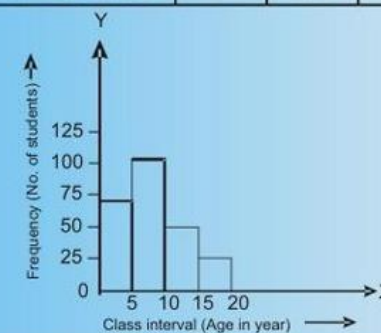
Class	VI	VII	VIII	IX	X
No. of Students	40	20	55	50	35



Histogram

Draw a histogram of the following frequency distribution.

Class (Age in years)	0 - 5	5 - 10	10 - 15	15 - 20
No. of students	72	103	50	25



Statistics

It is defined as the science of collection, presentation, analysis and interpretation of numerical data.



Chart

Some definitions

Data is defined as information in numerical facts.

Range Is defined as the difference between maximum and minimum value of observation.

Frequency is defined as the number of times an observation occur.

Pie-chart

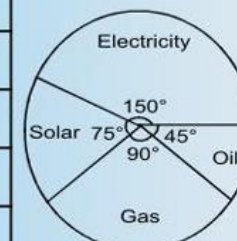
$$\text{Central angle for a variable} = \frac{\text{Frequency of the variable}}{\text{Total of frequencies}} \times 360^\circ$$

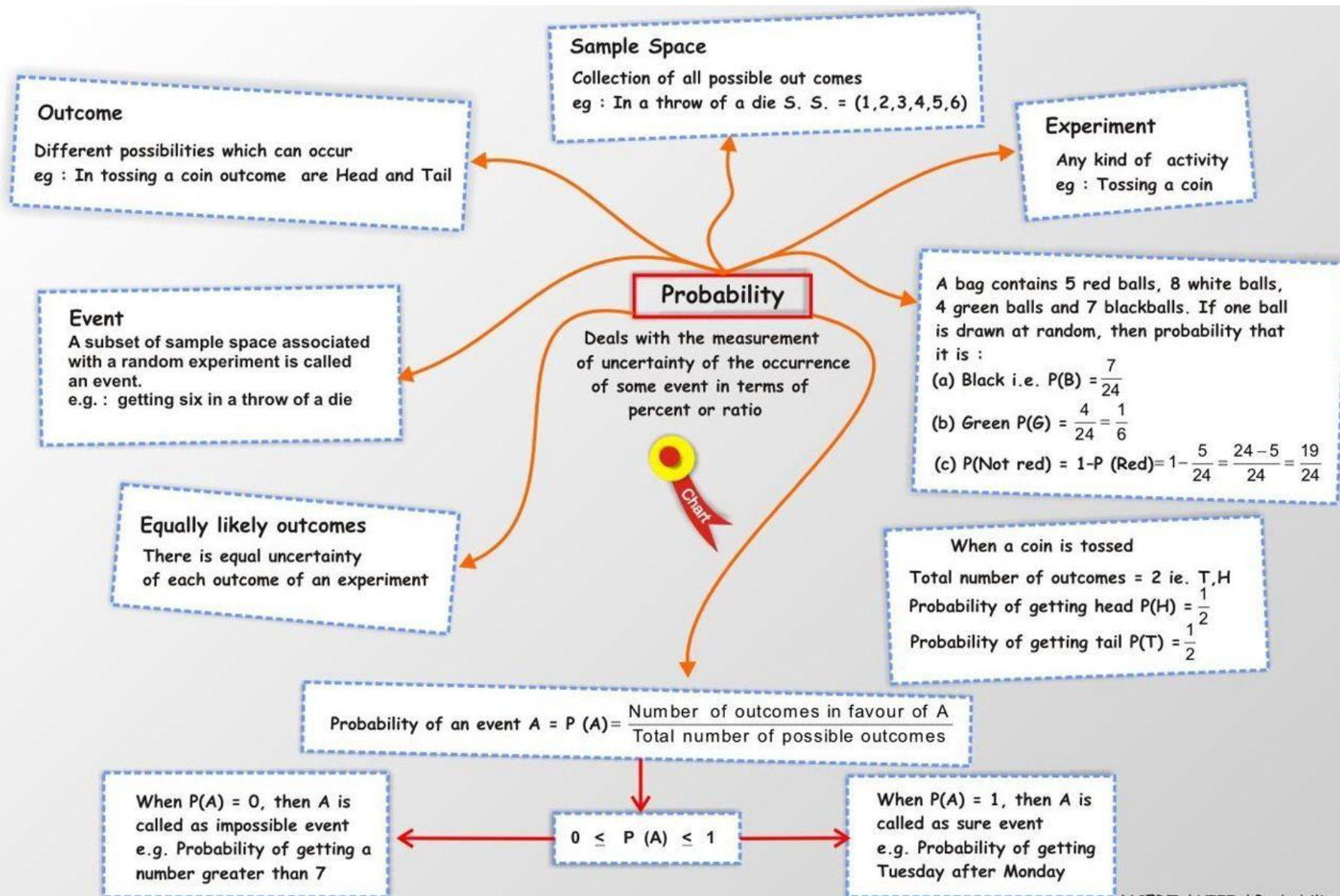
The main source of energy is used by each house in a street is listed below :

Source of Energy	Electricity	Solar	Gas	Oil
No. of houses	20	10	12	6

Represent the above data by a pie chart

Source of energy	Number of houses	Central angle
Electricity	20	$\frac{20}{48} \times 360 = 150$
Solar	10	$\frac{10}{48} \times 360 = 75$
Gas	12	$\frac{12}{48} \times 360 = 90$
Oil	6	$\frac{6}{48} \times 360 = 45$





SAINIK SCHOOL IMPHAL
WINTER VACATION 2025-26
HOMEWORK/ASSIGNMENT
Class-VIII

SANSKRIT

सैनिक स्कूल इम्फाल
शीतकालीन अवकाश गृह-कार्य

विषय : संस्कृत

कक्षा : VIII

निर्देश :

- सभी प्रश्नों को गृहकार्य पुस्तिका में स्वच्छ एवं सुंदर लेखन में लिखें।
- सभी कार्य स्वयं करें।
- उत्तरों को याद करके अवकाश के पश्चात् प्रस्तुत करें।

प्रश्न 1. पाठ्य-पुस्तक के पाठ 'नीतिविनितम्' एवं 'सावित्रीबाई फुले' को ध्यानपूर्वक पढ़िए। इन दोनों पाठों के सभी प्रश्न-उत्तर गृहकार्य पुस्तिका में लिखिए तथा कंठस्थ (याद) कीजिए।

प्रश्न 2. किसी भी पाँच क्रियापदों को चुनकर उनके वर्तमान काल, भूतकाल, भविष्यत् काल के रूप लिखिए।

(उदाहरण : पठ्, गम्, लिख्, खाद् आदि)

प्रश्न 3. अपनी पाठ्य-पुस्तक से कोई भी तीन श्लोक चुनिए। प्रत्येक श्लोक को लिखकर उसका भावार्थ अपने शब्दों में हिन्दी में लिखिए।

प्रश्न 4. 'सावित्रीबाई फुले' पाठ का सारांश अपने शब्दों में 8-10 वाक्यों में लिखिए।

SAINIK SCHOOL IMPHAL
WINTER VACATION 2025-26
HOMEWORK/ASSIGNMENT
Class-VIII

SCIENCE

WINTER VACATION ASSIGNMENT

Class: 8

Sub: Science

1. Find out how twinning occurs. Look for any twins in your neighbourhood, or among your friends. Find out if the twins are identical or non-identical. Also find out why identical twins are always of the same sex? Write in your own words.
2. Collect newspaper cuttings and information in magazines about HIV/ AIDS. Write an article of 15 to 20 sentences on HIV/AIDS.

SAINIK SCHOOL IMPHAL
WINTER VACATION 2025-26
HOMEWORK/ASSIGNMENT
Class-VIII

SOCIAL SCIENCE

(History/ Social & Political Life)

Winter Vacation Assignment

Class: VIII

Subject: Social Science (History/ Social & Political Life)

❖ **Instructions for Students:**

- Read the passage carefully.
- After reading, answer the questions that follow.
- Write your answers in complete sentences and support them with examples from the passage.
- Each question carries 05 marks. Answer in about 100–120 words each.

1. Case-Based Passage: The Making of the National Movement: 1870s–1947

By the 1870s, India was firmly under British colonial rule. The economic, social, and political systems had been reshaped to serve British interests. India's traditional political structures, local industries, and agrarian systems faced severe disruptions, creating widespread dissatisfaction among people. It was during this period that the Indian National Congress (INC) was formed in 1885. Initially, the Congress was dominated by educated elites, mostly lawyers, journalists, and landowners. These leaders, sometimes called moderates, sought reforms within the colonial system rather than complete independence. Their demands included greater representation in legislative councils, civil rights, and administrative reforms. They believed that reasoned petitions, debates, and discussions could convince the British government to grant concessions.

However, by the late 19th century, new leaders emerged who questioned the slow, cautious approach of the moderates. Leaders such as Bal Gangadhar Tilak, Lala Lajpat Rai, and Bipin Chandra Pal—often referred to as the extremists—argued that India must assert its right to self-rule (Swaraj). They encouraged people to adopt more assertive political methods, including public demonstrations, boycotts of British goods, and the promotion of indigenous industries. Tilak famously declared, “Swaraj is my birthright and I shall have it”, inspiring ordinary people to believe that freedom was both possible and necessary. The extremists also sought to mobilize the peasantry and working classes, bridging the gap between elite politics and the everyday lives of common citizens.

The first two decades of the 20th century saw India's political landscape transform dramatically. A combination of repressive policies, economic hardships, and social movements contributed to the rise of mass participation. The Partition of Bengal in 1905 provoked widespread protests, boycotts of British goods, and demonstrations, marking one of the earliest large-scale mobilisations against colonial rule. Newspapers, pamphlets, and books played a crucial role in spreading nationalist ideas. Newspapers like Kesari, The Hindu, and Amrit Bazar Patrika informed people about injustices and inspired debate. These publications helped bridge literacy gaps, enabling even people in smaller towns and villages to understand political events.

World events, too, influenced India's political awakening. The First World War (1914–1918) exposed India's contributions and sacrifices to the world, yet returned soldiers and workers saw no improvement in their lives. This created disillusionment and strengthened the demand for greater political rights. The Jallianwala Bagh massacre of 1919 was a turning point: peaceful protestors in Amritsar were fired upon by British troops, killing hundreds. This horrific event stirred anger and resentment across the country, pushing many ordinary Indians, including peasants and students, into active political participation.

In response to growing discontent, leaders like Mahatma Gandhi adopted a strategy of non-violent resistance (Satyagraha). Gandhi's philosophy encouraged Indians to withdraw cooperation from British institutions through non-cooperation, civil disobedience, and boycotts. Ordinary citizens were encouraged to spin khadi, boycott foreign goods, and refuse to pay taxes. Such methods allowed people from all walks of life, regardless of education or wealth, to participate in the struggle for freedom. The movements were carefully organised, combining moral appeals with practical action, making political participation accessible to millions.

Mass mobilisation was further aided by cultural symbols and festivals. The image of Bharat Mata, the national flag, and patriotic songs helped people from diverse linguistic, religious, and regional backgrounds feel a shared sense of belonging. Nationalist leaders recognised the importance of creating emotional connections, as collective pride and identity became as important as political strategy. Print culture complemented these efforts, with newspapers and posters spreading news of movements, arrests, and protests to distant villages. Even artisans, shopkeepers, and farmers, who rarely engaged in elite politics, began to feel part of a national struggle.

Despite the successes, the national movement faced several challenges. Differences between moderates and extremists often slowed decision-making. Regional variations in culture, language, and economic conditions meant that strategies effective in one area might fail in another. Moreover, India's limited industrial and infrastructural capacity constrained large-scale mobilisation. British authorities frequently employed repressive measures, including arrests, censorship, and force, to suppress protests.

Yet, these challenges did not prevent the movement from expanding. By the 1920s and 1930s, mass movements became the defining feature of Indian politics. Movements such as the Non-Cooperation Movement (1920–1922), the Civil Disobedience Movement (1930–1934), and later the Quit India Movement (1942) brought millions into active participation. Women, students, peasants, workers, and tribal communities contributed through protests, marches, and local initiatives. Even those who could not physically participate supported the movements by promoting indigenous goods, educating their communities, or spreading nationalist ideas through word-of-mouth.

In addition to political mobilisation, the national movement also inspired social reforms. Leaders highlighted the importance of education, eradication of caste discrimination, and gender equality. Reform and politics were intertwined, as creating a modern, aware citizenry was seen as essential for sustaining independence. By the mid-1940s, it became evident that the national movement had succeeded in transforming India from a country where politics was restricted to elites into a society where millions of ordinary citizens were aware of their rights, responsibilities, and the possibilities of self-rule.

In conclusion, the period between the 1870s and 1947 was one of transformation. India witnessed the shift from elite-led petitions to mass movements, from abstract political ideas to concrete collective action. The combination of leaders' vision, ordinary citizens' participation, cultural mobilisation, and print culture created a broad-based national movement. Despite regional, social, and political challenges, the movement succeeded in engaging millions, laying the foundation for India's eventual independence in 1947.

- i. Explain how the Indian National Congress changed from an elite organisation to a mass movement between 1885 and the 1920s. In your answer, include the role of leaders, strategies, and ordinary citizens in encouraging widespread participation.
- ii. Analyse the significance of newspapers, pamphlets, posters, and cultural symbols like Bharat Mata and the tricolour flag in the national movement. How did these tools help unite people across different regions, languages, and social groups?
- iii. Discuss the challenges faced by the national movement during 1919–1935, such as internal divisions, regional differences, and limited resources. Despite these obstacles, how did the movement succeed in involving millions of Indians in politics and social reforms?

2. Case-Based Passage: Marginalisation in Indian Society

Indian society is marked by great diversity in terms of culture, language, religion, and ways of life. While diversity enriches society, it has also been accompanied by inequality. Certain communities have been pushed to the edges of social, economic, and political life. This process is known as marginalisation. Marginalisation refers to the situation in which individuals or communities are denied equal access to resources, opportunities, and rights, forcing them into a position of disadvantage.

Marginalisation is not the result of a single event; it is a long historical process shaped by social customs, economic policies, and political decisions. In India, communities such as Adivasis (tribal communities), Dalits, religious minorities, and some backward groups have experienced marginalisation in different ways. Their exclusion has often been

justified through ideas of superiority and inferiority, which became deeply rooted in society over time.

Adivasis, for example, traditionally lived in forests and hilly regions and depended on nature for their livelihood. Their economy was based on hunting, gathering, shifting cultivation, and small-scale agriculture. However, with the expansion of colonial rule and later industrial development, forests were taken over by the state. Laws were introduced that restricted Adivasis' access to forest resources. Large development projects such as dams, mines, and factories were often set up in these areas, leading to displacement of tribal communities. Many Adivasis lost not only their homes but also their cultural identity and traditional knowledge systems.

Dalits, on the other hand, faced marginalisation primarily through the caste system. For centuries, they were considered "untouchable" and were forced to perform tasks regarded as impure. They were denied access to temples, schools, and public spaces. This social exclusion resulted in economic deprivation, as Dalits had limited opportunities for education and employment. Although the Indian Constitution abolished untouchability and guaranteed equality before law, caste-based discrimination continues in many forms, such as social boycotts, violence, and unequal access to resources.

Religious minorities, especially Muslims, have also experienced marginalisation in certain contexts. Historical factors, stereotypes, and political narratives have contributed to their exclusion from economic and educational opportunities. Studies have shown that Muslims, on average, have lower levels of education and income compared to many other social groups. Fear, insecurity, and lack of political representation often worsen their marginal position in society.

Marginalisation is closely linked to poverty and lack of access to education. When communities are denied quality education, they are unable to compete for better jobs or participate effectively in political processes. Poor health facilities, inadequate housing, and limited access to credit further deepen their exclusion. Marginalised communities often live in areas with weak infrastructure, making it difficult for them to benefit from development initiatives.

The process of development itself can sometimes increase marginalisation. While development projects aim at economic growth, they often ignore the interests of vulnerable communities. Displacement without proper rehabilitation forces people into unfamiliar environments where they lack skills to survive. This leads to unemployment, loss of dignity, and social disintegration. Development, when not inclusive, can thus widen inequalities rather than reduce them.

Recognising these challenges, the Indian Constitution provides several safeguards for marginalised communities. Fundamental Rights ensure equality before law and prohibit

discrimination on grounds of caste, religion, gender, or place of birth. Reservation policies in education, employment, and political representation aim to create opportunities for Scheduled Castes, Scheduled Tribes, and Other Backward Classes. Laws such as the Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act seek to protect these communities from violence and discrimination.

However, laws alone are not sufficient to eliminate marginalisation. Social attitudes change slowly, and deep-rooted prejudices continue to influence behaviour. Effective implementation of policies, awareness among communities, and active participation of citizens are essential to bring real change. Education plays a crucial role in empowering marginalised groups by increasing self-confidence, skills, and awareness of rights.

Civil society organisations, social movements, and community initiatives have also contributed to reducing marginalisation. By raising awareness, providing legal support, and demanding accountability, they help amplify the voices of marginalised communities. Media, when used responsibly, can highlight injustices and promote inclusive narratives.

In conclusion, marginalisation is a complex and multi-dimensional process rooted in history, social structures, and economic inequalities. Addressing it requires more than economic growth; it demands social justice, political inclusion, and respect for diversity. An inclusive society is one where development benefits all and where every individual, regardless of background, can live with dignity and equal opportunity.

- i. Explain how marginalisation develops over a long period of time rather than being caused by a single event. In your answer, analyse the experiences of **Adivasis and Dalits** to show how history, social customs, and economic changes have contributed to their marginalisation.
- ii. Development is often seen as a sign of progress, yet it can sometimes worsen marginalisation. Analyse how development projects such as dams, mining, and industries have affected marginalised communities. Suggest two measures that can make development more inclusive and just.
- iii. The Indian Constitution provides legal safeguards to protect marginalised communities. Examine the role of constitutional provisions, laws, and reservation policies in reducing marginalisation. Why is it important to change social attitudes along with laws to achieve true equality?