

CLASS - X  
MPS KALWAR

**SUMMER HOLIDAY  
HOMEWORK  
2024-25**

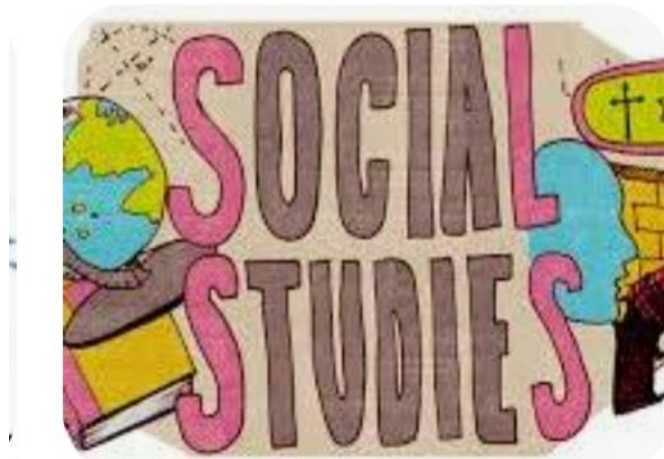


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## 5. Art & Integration

\* Tribal communities in Rajasthan and Nagaland are unique in their cultural practices, traditions and socio-economic development. Conduct research on these communities in Rajasthan and Nagaland and draft a detailed analysis highlighting their distinct cultures and traditions. Paste /draw pictures/images showcasing musical instruments, jewellery, traditional attire etc



### 1. "Art Integration Project"

Make a file (not more than 4 pages) comparing the states of Rajasthan and Nagaland on following points using pictures and your creativity :

\*Physical Features

\*Culture

\*Agriculture

2. Do combine reflection work sheet of Ch-1 (Hi story) and ch-1 (Geography) in fair notebook (would be shared in WhatsApp class group).

3. Learn Ch 1 each of History, Geography, Political Science and Economics.

4. Prepare a file of map points.

(Map points pdf would be shared in class group)





1. सूरदास पाठ के आधार पर नागालैंड के प्रमुख धार्मिक संत व कवियों से संबंधित चित्र एकत्र करके फाइल में लगाएँ।
2. परियोजना कार्य को विषयपरक, कलात्मक व प्रभावशाली बनाएँ।
3. दिए गए अभ्यास पत्रको(Work sheet)को हिंदी विषय की उत्तर पुस्तिका में करें।
4. पठित पाठों का अभ्यास करें एवं याद करें।



Sanskrit class 10

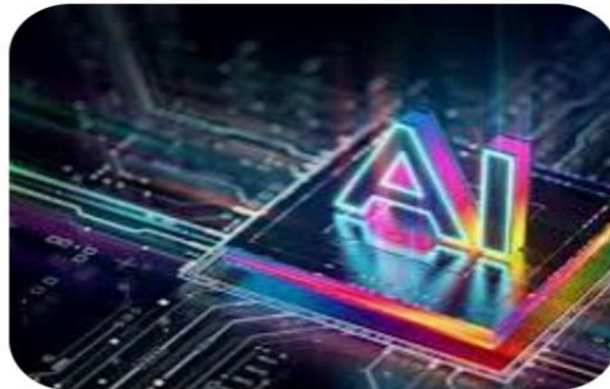
व्याकरण :- पढ़ाए गए व्याकरण के नियमों को याद करेंगे।

1. नागालैंड एवं राजस्थान के नृत्य , संस्कृति, त्यौहार एवं कवि का तुलना कर संस्कृत में वाक्य लिखिए चित्र के माध्यम से एक प्रोजेक्ट फाइल तैयार करे ।





1. Écrivez 20 verbes irrégulier et conjugaison aussi dans votre cahier.
2. Qu'est-ce que vous voulez faire dans votre vacance d'été. (80- 100 mots)
3. Décrivez votre routine quotidienne, qu'est-ce que vous avez fait hier.



### **Activity 1: Gamified tools for each AI Domains**

The term "Domains of AI" refers to the various specialized areas within artificial intelligence. These Artificial Intelligence domains deal with specific problems, techniques, and applications,

making it easier to categorize and understand the vast field of AI. Let's understand it better with the help of gamified tools for each domain.

### 1. Data Sciences-

Impact Filter (Impact of rise in temperature on different species)

<https://artsexperiments.withgoogle.com/impactfilter/>

### 2. CV-

Autodraw (It pairs machine learning with drawings from talented artists to help you draw stuff fast.)

<https://www.autodraw.com/>

### 3. NLP-

Wordtune (AI writing tool that rewrites, rephrases, and rewords your writing)

<https://www.wordtune.com/>

Prepare a chart/model depicting AI domains along with description of Games in each domain.

**OR**

## **Activity 2: AI Modelling**

An **AI model** is a program that applies one or more algorithms to data to recognize patterns, make predictions or make decisions without human intervention. The activities given below will help you to understand the two approaches of modeling i.e. Rule Based & Learning Based AI Approaches-

### 1. Teachable machine to demonstrate **Supervised Learning**

<https://teachablemachine.withgoogle.com/>

2. Infinite Drum Machine to demonstrate **Unsupervised learning**

<https://experiments.withgoogle.com/ai/drum-machine/view/>

Prepare a chart/model depicting the types of AI Models along with pictorial explanation.



## General Instructions: -

1. Q1 to Q4 (Lab Manual)
2. Q5 to Q9 (Classwork Copy)
3. Q10 to Q13 (Activity Based) Do any one.
4. All questions are compulsory.

Q1) Write steps to create a new style in Libre Office Writer.

Q2) Write steps to create a template.

Q3) Write steps to create a Letter with the help of mail merge wizard.

Q4) Write steps to create table of content with minimum 5 entries.



**Q5) What is style in Libre Office Writer? Write steps to create your own style.**

**Q6) Write steps to upload the style from template.**

**Q7) Explain any four Graphic filters.**

**Q8) What do you understand by the term: A. Text Wrapping B. Anchoring**

**Q9) What are templates? What are the advantages of using a template?**

### **Activity**

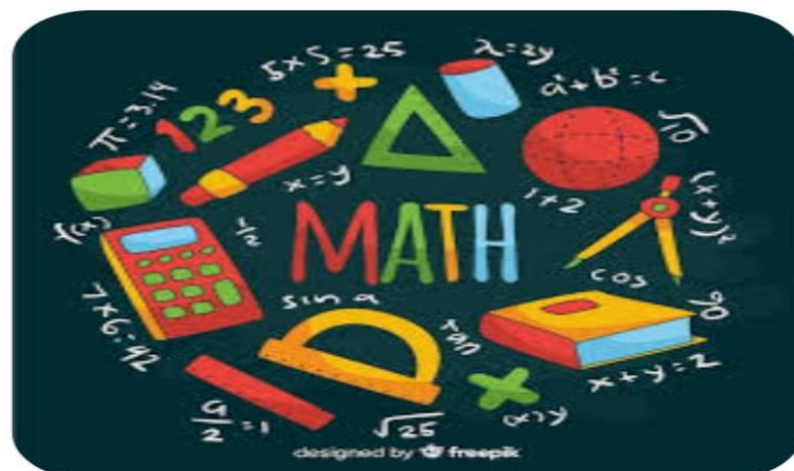
**Q10) Create Model of Communication Cycle.**

**Q11) Create presentation on STRESS MANAGEMENT.**

**Q12) Create chart on applications of IT.**

**Q13) Draw poster on A4 sheet and write short note on the following.**

- a. Communication Cycle**
- b. Stress Management Techniques**
- c. Ways to master Self-Management**
- d. Techniques for Identifying your Strengths and Weaknesses**



**Ch 1 – Real Numbers :-**

**Section –A**

1.

The HCF of a smallest 2 – digit number and the smallest composite number is :

- (a) 2            (b) 20            (c) 40            (d) 4

2.

If two positive integers  $m$  and  $n$  are expressible in the form  $m = p$  and  $n = q$ , where  $(m,n) =$

3.

- (a)  $pq$             (b)  $p$             (c)            (d)

LCM of  $a$  and 18 is 36 and the HCF of  $a$  and 18 is 2 then  $a$  is equal to

4.

- (a) 2            (b) 3            (c) 4            (d) 1

HCF of two positive integers is always

- (a) multiple of their LCM            (b) a factor of their LCM  
(c) divisible by their LCM            (d) none of these

5.

**Section – B**

Case study base :

A seminar is being conducted by an Educational Organization, where the participants are from different subjects. The number of participants in Science, Social Science and Mathematics are 120, 150 and 180 respectively.



6.

Based on the above information answer the following questions.

7.

(a) Find the sum of the exponents of the prime factors of 90.

8.

(b) If in each room same number of participants are to be seated and all the number of participants that can be accommodated in each room.

9.

c) What is the minimum requirement of the rooms for the event?

Or

10.

For the numbers 85 and 90, verify  $\text{HCF} \times \text{LCM} = \text{Product of numbers}$ .

### Section – C

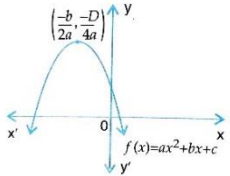
Three bells ring at intervals of 4, 7 and 14 minutes. All the three rang at 6 AM.

Find the greatest number of six digits exactly divisible by 15, 24 and 36.

In a school there are two sections of class X – section A and section B. There are 40 students in section A and 30 students in section B. Determine the least number of books required for the library of the school so that the books are distributed equally among students of section A and section B.

Prove that  $5 - \sqrt{3}$  is an irrational number, given that  $\sqrt{3}$  is an irrational number.


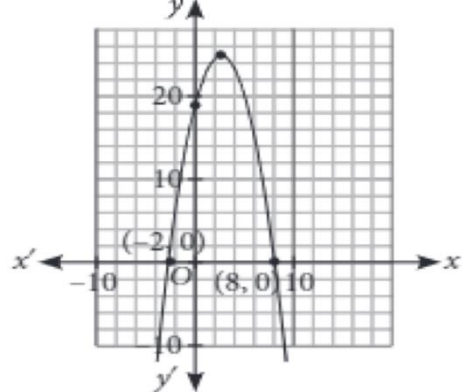
Prove that  $\sqrt{2} + \sqrt{3}$  is irrational, given that  $\sqrt{2}$  is irrational.

| <b>Ch 2 – Polynomials-</b> |  |
|----------------------------|--|
| 1                          | A quadratic polynomial whose zeroes are 2 and $-\frac{3}{2}$ is<br>(a) $2x^2-4x-3$ (b) $2x^2 + x-6$ (c) $2x^2-x-6$ (d) $2x^2-2x-6$   |
| 2                          | If one of the zeros of the quadratic polynomial $(k-1)x^2 + kx + 1$ is -3, the the value of k is<br>(a) $\frac{4}{3}$ (b) $\frac{-4}{3}$ (c) $\frac{2}{3}$ (d) $\frac{-2}{3}$  |
| 3                          | Given $m+2$ , where m is a positive integer, is a zero of the polynomial $p(x)=x^2 - mx-6$ , which of these is<br>(a) 4                      (b) 3                      (c) 2                      (d) 1   |
| 4                          | If the zeroes of the quadratic polynomial $ax^2 + bx + c$ , $a \neq 0$ are equal, then<br>(a) c and a have opposite signs                      (b) c and b have opposite signs<br>(c) c and a have the same sign                      (d) c and b have the same sign |
| 5                          | If $\alpha$ and $\beta$ are the zeroes of the polynomial $f(x) = 2x^2 - 3x + 5$ , then the value of $\frac{1}{\alpha} + \frac{1}{\beta}$ is<br>(a) $\frac{-2}{3}$ (b) $\frac{2}{5}$ (c) $\frac{3}{5}$ (d) $\frac{-3}{5}$   |
| 6                          | The quadratic polynomial, the sum of whose zeroes is -5 and their product is 6, is<br>(a) $x^2+ 5x +6$ (b) $x^2 - 5x +6$ (c) $x^2 - 5x - 6$ (d) $-x^2+ 5x +6$  |
| 7                          | If $p(x) = ax+b$ , then the zero of $p(x)$ is<br>(a) $a$ (b) $b$ (c) $\frac{-a}{b}$ (d) $\frac{-b}{a}$   |
| 8                          | If 2 is a zero of both the polynomials $3x^2 + ax - 14$ and $2x^3 + bx^2 + x - 2$ , then the value of $a-2b$ is<br>(a) -1                      (b) 5                      (c) 9                      the                      (d) -9                                 |
| 9                          | The following figure shows the graph of the polynomial $f(x) = ax^2 + bx + c$ . Which of the option is correct?<br>(a) $a < 0, b < 0$ and $c > 0$ (b) $a < 0, b < 0$ and $c < 0$<br>(c) $a < 0, b > 0$ and $c > 0$ (d) $a < 0, b > 0$ and $c < 0$                    |
|                            |   |
| 10                         | Assertion (A): If one zero of the quadratic polynomial $(k-1)x^2 + kx + 1$ is -3, then the value of k is $\frac{4}{3}$ .<br>Reason (R): If -1 is a zero of $p(x) = kx^2 - 4x + k$ , then the value of k is -2  |
| 11                         | Assertion: A quadratic polynomial whose two zeroes are $5 + 3\sqrt{3}$ and $5 - 3\sqrt{3}$ is $x^2 - 10x + 2$ .<br>Reason (R): If $\alpha$ and $\beta$ are the zeroes of the polynomial $f(x)$ , then $f(x) = x^2 - (\alpha + \beta)x + \alpha\beta$ ,               |
| 12                         | Assertion (A): The polynomial $x^2 - 6x + 12$ has two zeroes.<br>Reason (R): A quadratic polynomial can have at most two zeroes  |
| 13                         | If one zero of the quadratic polynomial $x^2 - 5x - 6$ is 6, then find the other zero.   |
| 14                         | If $p(x) = x^2 + 5x + 2$ , then find $p(3) + p(0)$ .   |
| 15                         | Find the value of k, If the product of the zeroes of the quadratic polynomial $f(x) = x^2 - 4x + k$ is 3   |
| 16                         | If $\alpha$ and $\beta$ are zeroes of the polynomial $2x^2 - 5x + 7$ , then find the value of $\alpha^{-1} + \beta^{-1}$ .   |
| 17                         | If one zero of the polynomial $(a^2 + 9)x^2 + 13x + 6a$ is reciprocal of the other, find the value of a  |

|    |  |
|----|--|
| 18 | If $\alpha$ and $\beta$ are zeroes of $ax^2 + bx + c$ , then find the value of $\frac{1}{\alpha^2} + \frac{1}{\beta^2}$  |
| 19 | If $\alpha$ and $\beta$ are zeroes of $x^2-x-6$ , then find the value of $\alpha^3 + \beta^3$  |
| 20 | If $\alpha$ and $\beta$ are zeroes of $p(x) = x^2-5x+6$ , then find the value of $\alpha^4 \beta^2 + \alpha^2 \beta^4$   |
| 21 | Find the zeroes of the polynomial $5t^2 + 12t + 7$ and verify the relationship between zeroes and coefficients   |
| 22 | If $\alpha$ and $\beta$ are the zeroes of the quadratic polynomial $x^2 - 5x + k$ , such that $\alpha - \beta = 1$ . Find the value of $k$                       |
| 23 | Find the value of $k$ such that the polynomial $x^2 - (k+6)x + 2(2k-1)$ has sum of its zeroes equal to half of the product of its zeroes                         |
| 24 | If $\alpha$ and $\beta$ are the zeroes of the quadratic polynomial $x^2 - 1$ , then form a quadratic polynomial whose zeroes are $\alpha^2$ and $\beta^2$        |
| 25 | If the zeroes of the polynomial $x^2 + px + q$ are double in value to the zeroes of $2x^2 - 5x - 3$ , then find the value of $p$ and $q$                         |
| 26 | If the zeroes of the polynomial $ax^2 + bx + c$ are in the ratio 4:5, prove that $20b^2 = 81ac$  |
| 27 | If $\alpha$ and $\beta$ are the zeroes of the quadratic polynomial $p(x) = x^2 - 3x - 2$ , find a quadratic polynomial whose zeroes are $\alpha^2$ and $\beta^2$ |

28 Priya and her husband Aman who is an architect by profession, visited France. They went to see Mont Blanc in France and Italy, under the Mont Blanc Mountain in the Alps, and has a parabolic cross-section. The image shows the parabolic cross-section of the bridge. Based on the above information, answer the following questions.


(i) Find the zeroes of the polynomial for the graph given above

(ii) Find the value of  $k$  in the polynomial  $x^2 + kx + 16$  if one of its zeroes is  $-4$

(iii) Find the value of  $k$  in the polynomial  $x^2 + 3x + k$  if one of its zeroes is  $-2$

29 While playing badminton Ronit saw the barrier chains hung between two posts at the edge of the wall. The barrier chain forms a parabolic shape. Parabola is the graphical representation of a particular type of polynomial.



Based on the above information, answer the following questions.

(i) Which type of polynomial is graphically represented by a parabola?

|  |   |
|--|---|
|  | <p>(ii) If a polynomial, represented by a parabola, intersects the x-axis at -3, 4 and y-axis at -2, then</p> <p>(iii) Find the sum of squares of zeroes of the polynomial <math>4x^2-9x+2</math></p> <p style="text-align: right;">OR</p> <p>(iv) If the barrier chains between two posts are represented by the polynomial <math>x^2-x-12</math>, then find</p>   |
|  | <p>Do the following activities in Math Lab Manual.</p> <ol style="list-style-type: none"> <li>1. a. To draw the graph of a quadratic polynomial.</li> <li>b. To recognize the shape of the curve based on the sign of coefficient of x square.</li> <li>c. To determine the number of zeroes</li> </ol> <ol style="list-style-type: none"> <li>2. To determine the conditions for consistency of a system of linear equations in two variables by graphical method</li> <li>3. To obtain the formula for the area of a circle using paper folding and cutting.</li> <li>4. To verify that the lengths of tangents drawn from an external point are always equal.</li> </ol> |