JINDAL VIDYA MANDIR, JSW HILL SIDE TOWNSHIP

Syllabus Bifurcation: 2025-26

Subject: MATHEMATICS **Class: X**

Term: I

Sl No.	Month	W D	ID	No. of Periods	Chapter/Units	Learning Objectives	Activities	Assessment Methods	Portion for WT/PT/Term/AE
1	March	5	5	5	1. REAL NUMERS	*Describe the Fundamental Theorem of Arithmetic. *Express a number as a product of it's prime factors to calculate the HCF and LCM of numbers. *Recall the properties of irrational numbers. *Prove that if P is prime and P divides a^2, then P divides a, where a is a positive integer.	*Factor tree of a composite number *Word problems and real-life scenarios involving the application of LCM and HCF.	* Written Test * Oral Quiz * Peer group test	
02	April	13	13	4	1. REAL NUMERS	*Prove that √2, √3, √5 are irrational numbers.	* To find the square root of 5,26 using graph Paper *Group activity to prove the irrationality of a given number (e.g., √2) using the method of contradiction. * Analysis of case study questions	* Error Analysis * Worksheet	
				3	2. POLYNOMIALS	* recall the previous knowledge like to define a polynomial and identify its degree, coefficients, and terms. * Understand the geometric meaning of the zeros of a polynomial. * To find the number of zeros from the graph	* Graphing linear and quadratic polynomials and relating the zeros to the x-intercepts. Activity to verify the relationship between zeros and coefficients using different polynomials.	*Written Test * Group Project: Assessing students' ability to interpret and analyze graphs of polynomials.	

						* Establish the relationship between the zeros and coefficients of a polynomial. Apply the division algorithm for polynomials.		*Peer Assessment: Students evaluate each other's solutions to polynomial problems. *Worksheet	
				3	3. PAIR OF LINEAR EQUATIONS IN TWO VARIABLES (upto 3.1)	* Formulate a pair of linear equations in two variables from given word problems. * Solve a pair of linear equations using the graphical method. * Interpret the graphical representation of nature of pair of equations and different types of solutions (Consistency, inconsistency, unique, infinitely many, no solution).	* Solving pairs of equations graphically using graph paper or software.	*Quiz *Daily Practice Problem *MCQ - Test *Peer Assessment	
03	June	20	20	9	3. PAIR OF LINEAR EQUATIONS IN TWO VARIABLES.	*Solve a pair of linear equations using algebraic methods (substitution, elimination, and cross-multiplication). * Apply the concepts of linear equations to solve real-world problems.	* Teams solve a series of word problems involving linear equations in a relay format.	*Case Studies *Worksheet *Puzzle	
				9	4. QUADRATIC EQUATIONS	* Define a quadratic equation and write it in standard form. * Give the examples of real-life situations which leads Quadratic equations (quadratic functions) verify the given equation is quadratic or not. * Solve quadratic equations by factorization.	**Equation Formation:** Students form quadratic equations from given situations (e.g., area problems, product of consecutive numbers). **Completing the Square:** Step-by-step practice of the	*Written Test *Self-Assessment test	

						* Solve quadratic equations by completing the square. * Solve quadratic equations using the quadratic formula. * Determine the nature of the roots of a quadratic equation. *Finding discriminant and find the nature of roots *Apply the concept of quadratic equations In Situational problems based on quadratic equations related to day-to-day activities	method of completing the square geometrically. **Quadratic Formula Derivation:** Activity to derive the quadratic formula. **Nature of Roots Exploration:** Students analyze different quadratic equations to determine the nature of their roots (real, equal, imaginary). Peer discussion		
				7	5. ARITHMETIC PROGRESSION	*Define an arithmetic progression (AP) and identify the first term and common difference. *Find the nth term of an AP. *Calculate the sum of the first n terms of an AP. * Solve problems related to sum of n – terms arithmetic progressions. *Apply the concepts of AP to solve real-life problems.	**Peer discussion on AP Identification:** Students identify whether a given sequence of numbers is an AP or not. * Produce pattern in order to observe that succeeding terms are obtained by adding a fixed number to preceeding term.	*Pattern Recognition * Peer – PPT * Finding the missing terms in the pattern.	WT – 4 27 - 06 -25 Ch – 1 Ch – 2 Ch – 3 Ch – 4
4	July	25	20	7	5. ARITHMETIC PROGRESSION	* Solve problems related to sum of n – terms arithmetic progressions. *Apply the concepts of AP to solve real-life problems.	* Produce pattern in order to observe that succeeding terms are obtained by adding a fixed number to preceeding term (using match sticks).	* Case study *AP Puzzles *Worksheet	PT – 1 Ch – 1 Ch – 2 Ch – 3 Ch – 4 Ch – 5

				16	6. TRIANGLES	*Define and differentiate between congruent and similar triangles. *State and prove the Basic Proportionality Theorem (Thales' Theorem) and its converse. *State and prove the criteria for similarity of triangles (AA, SAS, SSS). *Apply the properties of similar triangles to solve problems related to finding unknown sides and areas. *State and apply the Pythagoras Theorem and its converse to solve right-angled triangle problems.	*Shadow Activity *Basic Proportionality Theorem Verification By peer activity *Verification of Pythagoras theorem By cut and paste activity (Bhaskara Method) *PPT – seminar *To draw the system of Similar triangles using Y shaped strips with nails Hence verify Thales theorem	* Written Test *Projects *Case Studies *Portfolios *Mind mapping *Worksheet	
5	August	20	20	10	7. Co-ordinate Geometry	*Understand the Cartesian coordinate system and plot points on a plane. *Calculate the distance between two points using the distance formula. *Find the coordinates of a point that divides a line segment in a given ratio (section formula). *Determine the midpoint of a line segment. *Derive and apply the formula for the area of a triangle given its vertices. *Apply the distance formula to determine the type of triangle or quadrilateral. *Use the section formula to solve problems related to trisection and bisection of a line segment. *Understand the concept of collinearity of points and apply it to solve problems. Find the centroid of a triangle. Apply coordinate geometry concepts to solve real-world problems.	*Point Plotting Game *Distance Formula Scavenger Hunt * Midpoint Magic Coordinate Geometry Treasure Map	Written Test Coordinate Geometry Quiz Error Analysis Group Project *Worksheet	WT – 11 27 - 06 -25 Ch – 5 Ch – 6 Ch – 7

				10	**8. Introduction to Trigonometry**	Define and understand trigonometric ratios (sine, cosine, tangent, cosecant, secant, and cotangent) in a right-angled triangle. Determine the values of trigonometric ratios for standard angles (0°, 30°, 45°, 60°, and 90°). Establish the relationships between different trigonometric ratios. Understand and apply trigonometric identities. Apply trigonometry to solve simple problems related to heights and distances.	Creation Trigonometric Values Table Verification of Trigonometric Identity	Trigonometry Crossword or Puzzle Oral test concept mapping *Worksheet	
				4	9. Applications of Trigonometry	Understand the concepts of angle of elevation and angle of depression w.r.t line of sight. Determines all trigonometric ratios w.r.t acute angles and uses them in solving problems in daily life contexts like heights of different structures.	**Case Studies among the peer group**	*Worksheet *Group Project *Written Test	
6	Septem ber	20	12	8	9. Applications of Trigonometry	Develops strategies to apply the concept of Angle of Depression to daily life situations	Outdoor Project		
				4	10. Circles(upto 10.1)	*Define a circle and related terms such as radius, diameter, chord, arc, secant, and tangent. *Prove and apply theorems related to tangents to a circle, including the theorem that the tangent at any point of a circle is perpendicular to the radius through the point of contact. *Prove and apply the theorem that the lengths of tangents drawn from an external point to a circle are equal.	Construction of Tangent	Written Test	

				8	Revision				
TERM – I EXAMINATION									Term - 1 Ch – 1 To Ch – 8
TERM – II									
7	October	19	19	5	10. Circles (Continued)	Solve problems based on the properties of tangents and chords. Apply the concepts of circles and tangents to solve real-world problems.	Case study	*Group Project	
				5	11. Area related to circles	Calculate the area and perimeter of a circle. Find the area of a sector and a segment of a circle. Calculate the length of an arc of a circle. Solve problems involving combinations of plane figures involving circles. Apply the concepts of areas related to circles in real-life situations.	Circular Cut-Outs : Hands on activity **Peer discussion on Combined Shapes** **Case study**	Written Test Practical Measurement and Calculation in daily life situation Design Project Problem-Solving relay	
				5	12. Surface area and volumes	Calculate the surface areas and volumes of cubes, cuboids, spheres, hemispheres, and right circular cylinders/cones. Solve problems involving finding the surface area and volume of	Frustum Creation and Analysis 3D Shape Construction and group discussion	Oral test Written Test Model Making and measurements	

						combinations of solids. Apply the concepts of surface areas and volumes to solve real-world problems. Calculate the volume and surface area of a frustum of a cone. Visualize 3D shapes and their components.			
				6	13. Statistics	Calculate the mean of grouped data using different methods (direct method, assumed mean method, step deviation method). Determine the median of grouped data. Find the mode of grouped data. Construct and interpret cumulative frequency distribution (less than and more than type) and draw ogives. Analyze and interpret data using measures of central tendency (mean, median, mode) and cumulative frequency curves.	Peer – share – care: to draw the cumulative frequency curve Data Collection and Representation	Group relay Project Oral test Survey	
8	Novem ber	22	22	6	14. Probability	Understand the basic concepts of probability, including sample space, events, and outcomes. Understand the concept of equally likely events.	Coin Toss Experiment Dice Roll Activity Card Deck Exploration	Quiz Problem-Solving Tasks Written Test	WT – 4 06.11.25 Ch – 9 Ch – 10 Ch – 11

						Calculate the probability of an event using the formula: P(E) = Number of favorable outcomes / Total number of possible outcomes. Determine the probability of complementary events. Solve problems based on probability related to real-life situations	Probability in Games Group Discussions		
9	December	26	26	26	Pre Board Exam(1)				Pre board - 1 Ch – 1 to Ch – 12
10	January /February	18	17		Revision & Pre Board Exam(2)				PT – 2 Ch – 10 to ch - 13 WT – 11 24.01.26 Ch – 12 ,Ch – 13 Ch – 14 Pre board - 2 Ch – 1 to Ch – 14
11	February/March	22	22	22	QUESTION PAPER DISCUSSION BOARD EXAM				Ch – 1 to Ch – 14