EDUNIQUE

Class-XI MATHS | Class-XII MATHS

Class-XI MATHS

CONSUMER MATHS
- A.1 Simple interest
- A.2 Compound interest
- A.3 Continuously compounded interest
- A.4 Percent of a number: VAT, discount and more
- A.5 The find percent: discount and mark-up
- A.6 Multi-step problems with percents

SINGLE-VARIABLE INEQUALITIES
- B.1 Graph inequalities
- B.2 Write inequalities from graphs
- B.3 Identify solutions to inequalities
- B.4 Solve one-step linear inequalities: addition and subtraction
- B.5 Solve one-step linear inequalities: multiplication and division
- B.6 Solve two-step linear inequalities
- B.7 Graph solutions to one-step linear inequalities
- B.8 Solve two-step linear inequalities
- B.9 Graph solutions to two-step linear inequalities
- B.10 Solve advanced linear inequalities
- B.11 Graph solutions to advanced linear inequalities
- B.12 Write compound inequalities from graphs
- B.13 Solve compound inequalities
- B.14 Graph solutions to compound inequalities
- B.15 Graph solutions to two-step linear inequalities
- B.16 Solve quadratic inequalities
- B.17 Solve quadratic inequalities

RELATIONS AND FUNCTIONS
- C.1 Relations: convert between tables, graphs, mappings and lists of points
- C.2 Domain and range of relations
- C.3 Identify independent and dependent variables
- C.4 Identify functions
- C.5 Identify functions: vertical line test
- C.6 Find values using function graphs
- C.7 Evaluate a function
- C.8 Evaluate a function: plug in an expression
- C.9 Complete a function table from a graph
- C.10 Complete a function table from an equation
- C.11 Interpret the graph of a function: word problems

LINEAR FUNCTIONS
- D.1 Find the slope of a graph
- D.2 Find the slope from two points
- D.3 Find a missing coordinate using slope
- D.4 Slope-intercept form: find the slope and y-intercept
- D.5 Slope-intercept form: graph an equation
- D.6 Slope-intercept form: write an equation
- D.7 Slope-intercept form: write an equation from a graph
- D.8 Slope-intercept form: write an equation from a word problem
- D.9 (continued)
- D.10 Write linear functions to solve word problems
- D.11 Complete a table and graph a linear function
- D.12 Write equations in standard form
- D.13 Standard form: find x- and y-intercepts
- D.14 Slope-intercept form: graph an equation
- D.15 Equations of horizontal and vertical lines
- D.16 Graph a horizontal or vertical line
- D.17 Slopes of parallel and perpendicular lines
- D.18 Write an equation for a parallel or perpendicular line
- D.19 Transformations of linear functions

LINEAR INEQUALITIES
- E.1 Does (x, y) satisfy the inequality?
- E.2 Linear inequalities: solve for y
- E.3 Graph a linear inequality in the coordinate plane
- E.4 Linear inequalities: word problems
- E.5 Is (x, y) a solution to the system of inequalities?
- E.6 Solve systems of linear inequalities by graphing
- E.7 Solve systems of linear and absolute value inequalities by graphing

COMPLEX NUMBERS
- F.1 Introduction to complex numbers
- F.2 Add and subtract complex numbers
- F.3 Complex conjugates
- F.4 Multiply complex numbers
- F.5 Divide complex numbers
- F.6 Add, subtract, multiply and divide complex numbers
- F.7 Absolute values of complex numbers
- F.8 Powers of complex numbers

ARGAND PLANE
- G.1 Introduction to the Argand plane
- G.2 Graph complex numbers
- G.3 Addition in the Argand plane
- G.4 Subtraction in the Argand plane
- G.5 Graph complex conjugates
- G.6 Absolute value in the Argand plane
- G.7 Midpoints in the Argand plane
- G.8 Distance in the Argand plane

FACTORISING
- H.1 Factorise out a monomial
- H.2 Factorise quadratic polynomials
- H.3 Factorise quadratics using algebra tiles
- H.4 Factorise using a quadratic pattern
- H.5 Factorise by grouping
- H.6 Factorise sums and differences of cubes
- H.7 Factorise polynomials

QUADRATIC FUNCTIONS
- I.1 Characteristics of quadratic functions
- I.2 Complete a function table: quadratic functions
- I.3 Find a quadratic function
- I.4 Graph a quadratic function
- I.5 Match quadratic functions and graphs
- I.6 Solve a quadratic equation using square roots
- I.7 Solve a quadratic equation using the zero product property
- I.8 Solve a quadratic equation by factorising
- I.9 Complete the square
- I.10 Solve a quadratic equation using the quadratic formula
- I.11 Using the discriminant

POLYNOMIALS
- J.1 Polynomial vocabulary
- J.2 Add and subtract polynomials
- J.3 Multiply polynomials
- J.4 Divide polynomials using long division
- J.5 Divide polynomials using synthetic division
- J.6 Evaluate polynomials using synthetic division
- J.7 Solve polynomial equations
- J.8 Write a polynomial from its roots
- J.9 Find the roots of factorised polynomials
- J.10 Rational root theorem
- J.11 Complex conjugate theorem
- J.12 Conjugate root theorems
- J.13 Match polynomials and graphs
- J.14 Fundamental Theorem of Algebra
- J.15 Pascal's triangle
- J.16 Pascal's triangle and the Binomial Theorem
- J.17 Binomial Theorem I
- J.18 Binomial Theorem II

PARABOLAS
- K.1 Identify the direction a parabola opens
- K.2 Find the vertex of a parabola
- K.3 Find the focus or directrix of a parabola
- K.4 Find the axis of symmetry of a parabola
- K.5 Write equations of parabolas in vertex form from graphs
- K.6 Write equations of parabolas in vertex form using properties
- K.7 Convert equations of parabolas from general to vertex form
- K.8 Find properties of a parabola from equations in general form
- K.9 Graph parabolas

CIRCLES
- L.1 Find the centre of a circle
- L.2 Find the radius or diameter of a circle
- L.3 Write equations of circles in standard form from graphs
- L.4 Write equations of circles in standard form using properties
- L.5 Convert equations of circles from general to standard form
- L.6 Find properties of circles from equations in general form
- L.7 Graph circles

ELLIPSES
- M.1 Find the center, vertices, or co-vertices of an ellipse
- M.2 Find the length of the major or minor axis of an ellipse
- M.3 Find the foci of an ellipse
- M.4 Write equations of ellipses in standard form from graphs
- M.5 Write equations of ellipses in standard form from properties
- M.6 Convert equations of ellipses from general to standard form
- M.7 Find properties of ellipses from equations in general form

HYPERBOLAS
- N.1 Find the center of a hyperbola
- N.2 Find the vertices of a hyperbola
- N.3 Find the length of the transverse or conjugate axes of a hyperbola
- N.4 Find the equations for the asymptotes of a hyperbola
- N.5 Find the foci of a hyperbola
- N.6 Write equations of hyperbolas in standard form from graphs
- N.7 Write equations of hyperbolas in standard form using properties
- N.8 Convert equations of hyperbolas from general to standard form
- N.9 Find properties of hyperbolas from equations in general form

RATIONAL FUNCTIONS AND EXPRESSIONS
- O.1 Rational functions: asymptotes and excluded values
- O.2 Evaluate rational expressions I
- O.3 Evaluate rational expressions II
- O.4 Simplify rational expressions
- O.5 Multiply and divide rational expressions
- O.6 Add and subtract rational expressions
- O.7 Solve rational equations

FUNCTION OPERATIONS
- P.1 Add and subtract functions
- P.2 Multiply functions
- P.3 Divide functions
- P.4 Composition of linear functions: find a value
- P.5 Composition of linear functions: find an equation
- P.6 Composition of linear and quadratic functions: find an equation
- P.7 Composition of linear and quadratic functions: find a value

ANGLE MEASURES
- Q.1 Convert between radians and degrees
- Q.2 Radians and arc length
- Q.3 Quadrants
- Q.4 Graphs of angles
- Q.5 Coterminal angles
- Q.6 Reference angles

TRIGONOMETRY
- R.1 Pythagoras' Theorem and its converse
- R.2 Special right triangles
- R.3 Trigonometric ratios: sin, cos and tan
- R.4 Trigonometric ratios: csc, sec and cot
- R.5 Trigonometric ratios in similar right triangles
- R.6 Find trigonometric ratios using the unit circle
- R.7 Sin, cos and tan of special angles
- R.8 Csc, sec and cot of special angles
- R.9 Find trigonometric functions using a calculator
- R.10 Inverses of sin, cos and tan
- R.11 Inverses of csc, sec and cot
- R.12 Solve trigonometric equations I
- R.13 Solve trigonometric equations II
- R.14 Trigonometric ratios: find a side length
- R.15 Trigonometric ratios: find an angle measure
- R.16 Solve a right triangle
- R.17 Law of Sines
- R.18 Law of Cosines
- R.19 Solve a triangle
- R.20 Area of a triangle: sine formula
- R.21 Area of a triangle: Law of Sines

TRIGONOMETRIC FUNCTIONS
- S.1 Find properties of sine functions
- S.2 Write equations of sine functions from graphs
- S.3 Write equations of sine functions using properties
- S.4 Graph sine functions
- S.5 Find properties of cosine functions
- S.6 Write equations of cosine functions from graphs
- S.7 Write equations of cosine functions using properties
- S.8 Graph cosine functions
- S.9 Graph sine and cosine functions

TRIGONOMETRIC FUNCTIONS
- T.1 Complementary angle identities
- T.2 Symmetry and periodicity of trigonometric functions
- T.3 Trigonometric identities I
- T.4 Trigonometric identities II

PROBLEM SOLVING
- U.1 Word problems: mixed review
- U.2 Word problems with money
- U.3 Consecutive integer problems
- U.4 Rate of travel: word problems
- U.5 Weighted averages: word problems

LOGIC
- V.1 Identify hypotheses and conclusions
- V.2 Counterexamples
- V.3 Truth tables
- V.4 Truth values
- V.5 Conditionals
- V.6 Negations
- V.7 Converses, inverses and contrapositives
- V.8 Biconditionals

SEQUENCES AND SERIES
- W.1 Classify formulas and sequences
- W.2 Find terms of an arithmetic sequence
- W.3 Find terms of a geometric sequence
- W.4 Find terms of a recursive sequence
- W.5 Evaluate formulas for sequences
- W.6 Write a formula for an arithmetic sequence
- W.7 Write a formula for a geometric sequence
- W.8 Write a formula for a recursive sequence
- W.9 Sequences: mixed review
- W.10 Introduction to sigma notation
- W.11 Identify arithmetic and geometric sequences
- W.12 Find the sum of a finite arithmetic or geometric series
- W.13 Introduction to partial sums
- W.14 Partial sums of arithmetic series
- W.15 Partial sums of geometric series
- W.16 Partial sums: mixed review
- W.17 Convergent and divergent geometric series
- W.18 Find the value of an infinite geometric series
- W.19 Write a repeating decimal as a fraction

INTRODUCTION TO LIMITS
- X.1 Find limits using graphs
- X.2 Find one-sided limits using graphs
- X.3 Determine if a limit exists

CALCULATE LIMITS
- Y.1 Find limits using addition, subtraction and multiplication laws
- Y.2 Find limits using division laws
- Y.3 Find limits using power and root laws
- Y.4 Find limits using limit laws
- Y.5 Find limits of polynomials and rational functions
- Y.6 Find limits involving factorisation and rationalisation

LIMITS INVOLVING INFINITY
- Z.1 Find limits at vertical asymptotes using graphs
- Z.2 Determine end behaviour using graphs
- Z.3 Determine end behaviour of polynomial and rational functions

LIMITS AND RATIONAL FUNCTIONS
- AA.1 Find the limit at a vertical asymptote of a rational function I
- AA.2 Find the limit at a vertical asymptote of a rational function II

CONTINUITY
- BB.1 Identify graphs of continuous functions
- BB.2 Determine continuity using graphs
- BB.3 Determine one-sided continuity using graphs
- BB.4 Find and analyse points of discontinuity using graphs
- BB.5 Determine continuity on an interval using graphs
- BB.6 Determine the continuity of a piecewise function at a point
- BB.7 Make a piecewise function continuous
- BB.8 Intermediate Value Theorem

INTRODUCTION TO DERIVATIVES
- CC.1 Average rate of change I
- CC.2 Average rate of change II
- CC.3 Find instantaneous rates of change
- CC.4 Velocity as a rate of change
- CC.5 Find values of derivatives using limits
- CC.6 Find the slope of a tangent line using limits
- CC.7 Find equations of tangent lines using limits

CALCULATE DERIVATIVES
- DD.1 Sum and difference rules
- DD.2 Product rule
- DD.3 Quotient rule
- DD.4 Power rule I
- DD.5 Power rule II
- DD.6 Find derivatives of polynomials
- DD.7 Find derivatives of trigonometric functions I
- DD.8 Find derivatives of trigonometric functions II
- DD.9 Chain rule
- DD.10 Chain rule II
- DD.11 Find derivatives of radical functions
- DD.12 Find derivatives using the product rule I
- DD.13 Find derivatives using the product rule II
- DD.14 Find derivatives using the quotient rule I
- DD.15 Find derivatives using the chain rule I
- DD.16 Find derivatives using the chain rule II

PROBABILITY
- EE.1 Introduction to probability
- EE.2 Theoretical and experimental probability
- EE.3 Compound events: find the number of outcomes
- EE.4 Calculate probabilities of events
- EE.5 Permutations
- EE.6 Counting principle
- EE.7 Permutation and combination notation
- EE.8 Find probabilities using permutations and combinations
- EE.9 Probabilities using two-way frequency tables
- EE.10 Identify independent events
- EE.11 Probability of independent and dependent events
- EE.12 Geometric probability
- EE.13 Find conditional probabilities
- EE.14 Independence and conditional probability
- EE.15 Find conditional probabilities using two-way frequency tables
- EE.16 Find probabilities using the addition rule
- EE.17 Find probabilities using the normal distribution

STATISTICS
- FF.1 Mean, median, mode and range
- FF.2 Quartiles
- FF.3 Identify biased samples
- FF.4 Mean absolute deviation
- FF.5 Variance and standard deviation

Class-XII MATHS

FUNCTIONS
- A.1 Domain and range
- A.2 Identify functions
- A.3 Find the slope of a linear function
- A.4 Graph a linear function
- A.5 Write the equation of a linear function
- A.6 Evaluate functions
- A.7 Find values using function graphs
- A.8 Complete a table for a function graph
- A.9 Add, subtract, multiply and divide functions
- A.10 Composition of functions
- A.11 Identify inverse functions
- A.12 Find values of inverse functions from tables
- A.13 Find values of inverse functions from graphs
- A.14 Find inverse functions and relations

FAMILIES OF FUNCTIONS
- B.1 Translations of functions
- B.2 Reflections of functions
- B.3 Dilations of functions
- B.4 Transformations of functions
- B.5 Function transformation rules
- B.6 Describe function transformations

POLYNOMIALS
- C.1 Divide polynomials using long division
- C.2 Divide polynomials using synthetic division
- C.3 Evaluate polynomials using synthetic division
- C.4 Write a polynomial from its roots
- C.5 Find the roots of factorised polynomials
- C.6 Rational root theorem
- C.7 Complex conjugate theorem
- C.8 Conjugate root theorems
- C.9 Descartes' Rule of Signs
- C.10 Fundamental Theorem of Algebra
- C.11 Match polynomials and graphs
- C.12 Factorise sums and differences of cubes
- C.13 Solve equations with sums and differences of cubes
- C.14 Factorise using a quadratic pattern
- C.15 Solve equations using a quadratic pattern
- C.16 Pascal's triangle
- C.17 Pascal's triangle and the Binomial Theorem
- C.18 Binomial Theorem I
- C.19 Binomial Theorem II

SYSTEMS OF INEQUALITIES
- D.1 Solve systems of linear inequalities by graphing
- D.2 Solve systems of linear and absolute value inequalities by graphing
- D.3 Find the vertices of a solution set
- D.4 Linear programming

NONLINEAR INEQUALITIES
- E.1 Graph solutions to quadratic inequalities
- E.2 Solve quadratic inequalities
- E.3 Graph solutions to higher-degree inequalities
- E.4 Solve higher-degree inequalities

MATRICES
- F.1 Matrix vocabulary
- F.2 Matrix operation rules
- F.3 Add and subtract matrices
- F.4 Multiply a matrix by a scalar
- F.5 Linear combinations of matrices
- F.6 Multiply two matrices
- F.7 Simplify matrix expressions
- F.8 Solve matrix equations
- F.9 Determinant of a matrix
- F.10 Is a matrix invertible?
- F.11 Inverse of a 2×2 matrix
- F.12 Inverse of a 3×3 matrix
- F.13 Identify inverse matrices
- F.14 Solve matrix equations using inverses

TRIGONOMETRY
- G.1 Convert between radians and degrees
- G.2 Radians and arc length
- G.3 Quadrants
- G.4 Coterminal and reference angles
- G.5 Find trigonometric ratios using right triangles
- G.6 Find trigonometric ratios using the unit circle
- G.7 Find trigonometric ratios using reference angles
- G.8 Inverses of trigonometric functions
- G.9 Solve trigonometric equations
- G.10 Trigonometric identities
- G.11 Trigonometric ratios: find an angle measure
- G.12 Law of Sines
- G.13 Law of Cosines
- G.14 Solve a triangle
- G.15 Area of a triangle: sine formula
- G.16 Area of a triangle: Heron's formula

TRIGONOMETRIC FUNCTIONS
- H.1 Find properties of sine functions
- H.2 Write equations of sine functions from graphs
- H.3 Write equations of sine functions using properties
- H.4 Graph sine functions
- H.5 Find properties of cosine functions
- H.6 Write equations of cosine functions from graphs
- H.7 Write equations of cosine functions using properties
- H.8 Graph cosine functions
- H.9 Graph sine and cosine functions

TRIGONOMETRIC IDENTITIES
- I.1 Complementary angle identities
- I.2 Symmetry and periodicity of trigonometric functions
- I.3 Trigonometric identities I
- I.4 Trigonometric identities II

CONIC SECTIONS
- J.1 Find properties of parabolas
- J.2 Write equations of parabolas in vertex form
- J.3 Graph parabolas
- J.4 Find properties of circles
- J.5 Write equations of circles in standard form
- J.6 Graph circles
- J.7 Find properties of ellipses
- J.8 Find the eccentricity of an ellipse
- J.9 Write equations of ellipses in standard form
- J.10 Find properties of hyperbolas
- J.11 Write equations of hyperbolas in standard form
- J.12 Find properties of conic sections from general to standard form
- J.13 Graph hyperbolas

COMPLEX NUMBERS
- K.1 Add and subtract complex numbers
- K.2 Complex conjugates
- K.3 Multiply and divide complex numbers
- K.4 Add, subtract, multiply and divide complex numbers
- K.5 Absolute values of complex numbers
- K.6 Powers of i

ARGAND PLANE
- L.1 Introduction to the Argand plane
- L.2 Graph complex numbers
- L.3 Addition in the Argand plane
- L.4 Subtraction in the Argand plane
- L.5 Graph complex conjugates
- L.6 Absolute value in the Argand plane
- L.7 Midpoints in the Argand plane
- L.8 Distance in the Argand plane

POLAR FORM
- M.1 Find the modulus and argument of a complex number
- M.2 Convert complex numbers from rectangular to polar form
- M.3 Convert complex numbers from polar to rectangular form
- M.4 Convert between rectangular and polar form
- M.5 Match polar equations and graphs

TWO-DIMENSIONAL VECTORS
- N.1 Find the magnitude of a vector
- N.2 Find the direction angle of a vector
- N.3 Find the component form of a vector
- N.4 Find the component form of a vector from its magnitude and direction angle
- N.5 Find a unit vector
- N.6 Add and subtract vectors
- N.7 Multiply a vector by a scalar
- N.8 Find the magnitude or direction of a vector scalar multiple
- N.9 Find the magnitude and direction of a vector sum
- N.10 Linear combinations of vectors
- N.11 Graph a resultant vector using the triangle method
- N.12 Graph a resultant vector using the parallelogram method

THREE-DIMENSIONAL VECTORS
- O.1 Find the magnitude of a three-dimensional vector
- O.2 Find the component form of a three-dimensional vector
- O.3 Find a three-dimensional unit vector
- O.4 Scalar multiples of three-dimensional vectors
- O.5 Add and subtract three-dimensional vectors

SEQUENCES AND SERIES
- P.1 Find terms of a sequence
- P.2 Find terms of a recursive sequence
- P.3 Identify a sequence as explicit or recursive
- P.4 Find a recursive formula
- P.5 Find recursive and explicit formulas
- P.6 Convert a recursive formula to an explicit formula
- P.7 Convert an explicit formula to a recursive formula
- P.8 Introduction to sigma notation
- P.9 Identify arithmetic and geometric series
- P.10 Find the sum of a finite arithmetic or geometric series
- P.11 Introduction to partial sums
- P.12 Partial sums of arithmetic series
- P.13 Partial sums of geometric series
- P.14 Partial sums: mixed review
- P.15 Convergent and divergent geometric series
- P.16 Find the value of an infinite geometric series
- P.17 Write a repeating decimal as a fraction

CONTINUITY
- Q.1 Identify graphs of continuous functions
- Q.2 Determine continuity using graphs
- Q.3 Determine one-sided continuity using graphs
- Q.4 Find and analyse points of discontinuity using graphs
- Q.5 Determine continuity on an interval using graphs
- Q.6 Determine the continuity of a piecewise function at a point
- Q.7 Make a piecewise function continuous
- Q.8 Intermediate Value Theorem

INTRODUCTION TO DERIVATIVES
- R.1 Average rate of change I
- R.2 Average rate of change II
- R.3 Find instantaneous rates of change
- R.4 Velocity as a rate of change
- R.5 Find values of derivatives using limits
- R.6 Find the slope of a tangent line using limits
- R.7 Find equations of tangent lines using limits

DERIVATIVE RULES
- S.1 Sum and difference rules
- S.2 Product rule
- S.3 Quotient rule
- S.4 Power rule I
- S.5 Power rule II
- S.6 Chain rule
- S.7 Inverse function rule

CALCULATE DERIVATIVES
- T.1 Find derivatives of polynomials
- T.2 Find derivatives of rational functions
- T.3 Find derivatives of trigonometric functions I
- T.4 Find derivatives of trigonometric functions II
- T.5 Find derivatives of exponential functions
- T.6 Find derivatives of logarithmic functions
- T.7 Find derivatives of inverse trigonometric functions
- T.8 Find derivatives of radical functions
- T.9 Find derivatives using the product rule I
- T.10 Find derivatives using the product rule II
- T.11 Find derivatives using the quotient rule I
- T.12 Find derivatives using the quotient rule II
- T.13 Find derivatives using the chain rule I
- T.14 Find derivatives using the chain rule II

DERIVATIVE STRATEGIES
- U.1 Find derivatives using implicit differentiation
- U.2 Find tangent lines using implicit differentiation
- U.3 Find derivatives using logarithmic differentiation

CALCULATE HIGHER DERIVATIVES
- V.1 Find higher derivatives of polynomials
- V.2 Find higher derivatives of rational and radical functions
- V.3 Find second derivatives of trigonometric, exponential and logarithmic functions
- V.4 Find higher derivatives using patterns

PROBABILITY
- W.1 Introduction to probability
- W.2 Calculate probabilities of events
- W.3 Combinations and permutations
- W.4 Find probabilities of trigonometric functions II
- W.5 Find probabilities using combinations and permutations
- W.6 Identify independent events
- W.7 Find conditional probability
- W.8 Independence and conditional probability
- W.9 Find conditional probabilities using two-way frequency tables
- W.10 Find probabilities using the addition rule

PROBABILITY DISTRIBUTIONS
- X.1 Identify discrete and continuous random variables
- X.2 Write a discrete probability distribution
- X.3 Graph a discrete probability distribution
- X.4 Expected values of random variables
- X.5 Variance of random variables
- X.6 Standard deviation of random variables
- X.7 Write the probability distribution for a game of chance
- X.8 Expected values for a game of chance
- X.9 Choose the better bet
- X.10 Find probabilities using the binomial distribution
- X.11 Mean, variance and standard deviation of binomial distributions
- X.12 Find probabilities using the normal distribution
- X.13 Find probabilities using the normal distribution II
- X.14 Find z-values
- X.15 Find values of normal variables
- X.16 Distributions of sample means
- X.17 The Central Limit Theorem
- X.18 Use normal distributions to approximate binomial distributions

STATISTICS
- Y.1 Match correlation coefficients to scatter plots
- Y.2 Calculate correlation coefficients
- Y.3 Find the equation of a regression line
- Y.4 Interpret regression lines
- Y.5 Analyse a regression line of a data set
- Y.6 Analyse a regression line using statistics of a data set

---

Pie chart segments: **Logic · Concept · Quick calculation · Practice · Critical Thinking**