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Relations and Functions Formulas for Class 12 Inverse Trigonometric Functions Formulas for Class 12 Matrices Formulas for Class 12 Determinants Formulas for Class 12 Continuity and Differentiability Formulas for Class 12 Application of Derivatives Formulas for Class 12 Integrals Formulas for Class 12 Integrals Formulas for Class 12 Q1 Integrals Formulas for Class 12 Q2 Application of Integrals Formulas for Class 12 Differential Equations Formulas for Class 12 Vector Algebra Formulas for Class 12 Three Dimensional Geometry Formulas for Class 12 Linear Programming Formulas for Class 12 Probability Formulas for Class 12 Math formula makes the problem-solving process much easier. Therefore, our Math experts have prepared class 12 Maths formulas PDF for all important chapters. With the help of Maths formulas for class 12 PDF free download links, you can access the PDF file and download them on your smartphone to use anytime. The class 12 Maths formula sheet PDF can be used for multiple purposes, such as — revision and practice questions. Furthermore, it's crucial to understand that the same formula sheet is helpful for competitive examinations such as JEE, CUET, and more. Class 12 Maths All Formulas Chapter Wise Every single chapter of class 12 Maths has certain formulas you need to understand and remember to better solve the questions. In this section, you will find class 12 Maths formulas for all chapters — Continuity and Differentiability to Mensuration. These class 12 Maths all formulas are important to successfully solve challenging problems, so ensure you include them in your regular studies and revision. 1. Continuity and Differentiability Formulas This topic includes rules or formulas for checking continuity and differentiability, along with derivatives of functions like logarithmic, exponential, and trigonometric functions. With the help of the class 12 Maths formula sheet PDF, you will find formulas for these subtopics: Continuity, Discontinuity, several theorems, differentiability, chain rules, some properties of the logarithmic function, some standard derivative, logarithmic differentiation, a derivative of functions in parametric forms, second order derivative, Rolle's theorem etc. The Continuity and Differentiability Formulas PDF helps you cover all the important formulas you need to solve class 12 Continuity and Differentiability questions. 2. Application of Derivatives Formulas With the help of formulas you learn for the Application of Derivatives, you can solve the questions based on finding the rate of change of quantities, determining maxima and minima, tangents and normals to curves, and using approximations in real-world problems. 3. Integrals Formulas The chapter integrals cover the process of integration. When you access the class 12 Maths formulas PDF, you get a set of formulas that includes formulas for integration, Integrals of some particular functions, Integration by partial fraction, fundamental theorem of calculus, definite integrals, and more. 4. Applications of Integrals Formulas The chapter Applications of Integrals focuses on using integrals to compute areas under curves, between two curves, and volumes of objects. You must master this topic and its formulas because this topic is useful in physics, economics, and engineering applications. 5. Three Dimensional Geometry Formulas Learning the formulas of Three-Dimensional Geometry enables you to solve the questions on these equations: equations of planes, straight lines, and spheres, as well as the shortest distance between skew lines and angles between planes. 6. Sets, Relations, Functions & Binary Operation Formulas Sets, Relations, Functions, & Binary Operations cover Set theory, Relations, Functions, and Binary operations. With the help of our Class 12 Maths formula sheet PDF, you can access the formulas that enable you to answer all kinds of questions on this topic. 7. Complex Number Formulas With the help of Class 12 Maths formulas PDF for Complex Number, you learn about the formulas that help you in performing arithmetic operations on complex numbers, finding their modulus and argument, and expressing them in polar or exponential forms. 8. Quadratics Equations Formulas The Quadratics Equations formulas help you solve quadratic equations using factorisation, completing the square, and the quadratic formula, along with relationships between roots and coefficients. 9. Sequence And Series Formulas By learning about the sequence and series formula, you learn to deal with arithmetic, geometric, and harmonic sequences and series. There are sum formulas and properties of infinite series too. 10. Permutation and Combination Formulas The Permutation and Combination formulas enable you to determine the number of ways elements can be arranged, also known as permutations or selected, aka. combinations in different scenarios. 11. Binomial Theorem Formulas Using the Binomial Theorem formulas, you learn to expand expressions of the form (a+b)n using binomial coefficients in a systematic manner. 12. Exponential and Logarithmic Series Formulas The Exponential and Logarithmic Series formulas help you express exponential and logarithmic functions as infinite series. These expansions are useful for approximations and in calculus. 13. Trigonometric Functions Formulas In Trigonometric Functions formulas, you find fundamental identities, sum and difference formulas, double and half-angle formulas, and product-to-sum transformations. The Maths class 12 formula sheet PDF helps you access all the Trigonometric Functions formulas in detail. 14. Inverse Trigonometric Functions Formulas The Inverse Trigonometric Functions formulas describe inverse trigonometric functions and provide identities useful for simplifications and integration. 15. Solution and Triangles Formulas With the help of Solution and Triangles formulas PDF, you get access to formulas that help you solve triangles using sine and cosine rules, area formulas, and properties of special triangles. 16. Cartesian Functions of Rectangular Coordinates Formulas The topic Cartesian Functions of Rectangular Coordinates explains relationships between points, lines, and curves in the Cartesian coordinate system. 17. The Straight Line Formulas The Straight Line Formulas provide equations of lines in different forms and conditions for parallelism and perpendicularity. 18. Family of Lines Formulas Family of Lines formulas explain different sets of lines, equations of angle bisectors and lines passing through fixed points. 19. Circles and Family of Circles Formulas Through the Circles and Family of Circles formulas, you learn to solve equations of circles, tangents, and common chord relations between two circles. 20. Conic Section Formulas In Conic Section formulas, you get equations and properties of parabolas, ellipses, and hyperbolas from different orientations. 21. Frequency Tables Formulas The Frequency Tables formulas are related to mean, median, mode, and standard deviation based on frequency distributions. 22. Linear Programming Formulas The Linear Programming formulas help you optimise questions based on constraints and objective functions. Such problems are often solved using graphical or simplex (a technique for solving linear programming problems) methods. 23. Probability Formulas With the help of Probability formulas, you get formulas for basic probability rules, conditional probability, Bayes' theorem, and distributions such as binomial and normal. 24. Vector Algebra Formulas The Vector Algebra formulas enable you to do vector operations, dot and cross products, equations of lines and planes, and their applications in geometry. 25. Functions, Limits and Continuity Formulas The formulas of this section help you deal with properties of functions, limit calculations, continuity conditions, and L'Hôpital's rule. 26. Differentiation of Their Application Formulas The formulas of Differentiation and Their Application assist you in covering derivative rules, applications in finding tangents, rates of change, and optimization problems. 27. Indefinite and Definite Integral Formulas Integral formulas, integration techniques, and applications like areas under curves are covered with the help of indefinite and definite integral formulas. 28. Differential Equations Formulas The formulas of Differential Equations define different types of differential equations and methods of solving them. The detailed formulas are mentioned in the class 12 Maths formula PDF. 29. Matrices and Determinants Formulas Using the formulas of Matrices and Determinants, you learn to solve matrix operations, answer questions based on determinant properties, use inverse matrices, and find solutions to linear equations using matrices. 30. Mensuration Formulas Mensuration covers the measurement of geometric figures — cubes, spheres, cylinders, and cones. The mensuration formula helps you measure the areas, volumes, and surface areas of the geometric figures. Procedure to Get the Maths Formulas for Class 12 PDF Free Download from SelfStudys You need to follow the below-mentioned process step by step for access to Maths formulas for class 12 PDF free download from our website. The main page of our platform will be available on your screen by typing www.selfstudys.com on any web browser.   Once there, you have to click on the 'Navigation' tab from various other elements. With this click, you will be able to access all our main categories. Here, you should select the 'CBSE' section.   By selecting this section, you can check out the CBSE-related study materials and click on the 'Formula Class Wise' option.   Then, you will be directed to a new page where you get to choose your class.   After choosing your class, you can go through the list of subjects and select the class 12 Maths formula sheet. Now, all the chapters for the class 12 Maths formula sheet PDF will open up and you can select any. You can then view your selected chapters' Maths class 12 formula sheet PDF in normal or HD quality. Finally, you may study the Maths formula sheet class 12 online or download the file. Note: The class 12 Maths all formulas PDF will only be downloaded once you Log In or Sign Up with your Gmail ID on SelfStudys. 3 Mistakes to Avoid When Using Class 12 Maths Formula Sheet PDF There are some common mistakes students make when using Class 12 maths formulas; this section discusses three mistakes you can easily avoid. Misunderstanding Formulas: Mistakes in understanding the derivation or application of a maths formula can lead you to use them incorrectly in solving a problem. And this is a mistake many learners make. They try to memorise class 12 Maths formulas without understanding their stepwise derivation or methods to use them in a problem. Inconsistent Units: The questions based on measurements require students to use proper units; however, many students often mix different units without proper conversion, which can mislead the final results. Ignoring Restrictions on Formulas: Some formulas have specific conditions under which they apply, e.g., square roots. To understand this, let's take an example to see what happens when the restriction is overlooked: The example mentioned in the above image showcases an error in step 3 that a and b can't both be negative. When solving a class 12 maths question, ignoring this kind of restriction can cause some serious problems in the final outcome, as the above example shows. Methods to Memorise Class 12 Maths Formulas Faster Here are 6 solid methods that can help you memorise class 12 Maths formulas faster.   1. Understand the Concept Behind the Formula Rote learning is temporary. You may have a good memory power that can help you memorise class 12 Maths all formulas in one go, but you may easily forget them. Therefore, understand the logic behind a formula and try to understand why the formula works. It will help you retain the information longer. To understand this better, let's take an example: To learn or remember the derivative formula d/dx(xn) = nxn-1, try to understand how differentiation reduces the power of x. 2. Use Mnemonics and Memory Tricks Mnemonics help in memorising complex maths formulas using simple words or phrases. Let's understand this with an example. Example: Use the ILATE Rule to decide which function to differentiate first in integration by parts: Inverse, Logarithm, Algebraic, Trigonometric, Exponential. 3. Write and Repeat The more you write formulas, the better you remember. Instead of just reading them, write down the formulas multiple times on a sheet and revise them daily. Writing the Class 12 Maths formulas repeatedly will make it easier for you to recall them later. 4. Practice Problems One of the best methods to memorise maths formulas is to apply them to real problems. You can use Class 12 Previous year question papers and sample papers to practice formulas. The more math problems you solve, the better you will remember the formulas. 5. Use Visual Aids (Charts & Mind Maps) A formula chart or sticky notes on your study table can help you with quick revision. You can use Class 12 Maths mind maps to see interconnected similar formulas, like all differentiation formulas in one branch integration in another. Visual exposure helps you improve your memory. As a result, you memorise important formulas much easier and faster and retain them longer. 6. Revise Before Sleeping We recommend recalling at least 5 formulas every night before sleeping. This method works because when you are asleep, the brain tries to recall the information and create a neural network or mental image based on the last information you have observed before sleeping. Conclusion Memorising and understanding the Class 12 Maths formulas is crucial for scoring higher in Class 12 Mathematics. Regular practice and application of class 12 formulas in problem-solving will help you gain confidence and accuracy in the Maths examination. Keep revising important formulas and apply them to various problems to enhance your mathematical skills. Need answers? Find them here... As soon as the CBSE announces the Class 12 board exam date sheet, it creates nervousness among students. Many start to find a solution that can help them complete the syllabus in the remaining time. Many students also experience fear and anxiety. Mathematical Anxiety is a term students might not be familiar with but the majority of the students experience it. Understanding CBSE Class 12 Maths Formulas is the key that can significantly help in reducing anxiety. This list of important class 12 Maths all formulas chapter-wise can help in scoring at least passing marks since every step helps in scoring. This list will also help during competitive exams like IIT-JEE and CUET preparation and is aligned with the CBSE Class 12 Math Syllabus.These are some of the most important formulas that can help in quick revision for CBSE Class 12 board exams. The formulas are listed as per the marks weightage given in the CBSE Syllabus for Class 12 Maths.∫ f(x) dx = F(x) + C∫ ln(x) dx = x ln(x) - x + C∫cos x dx = sin x + C∫ sin x dx = -cos x + C∫ sec2 x dx = tan x + C∫ cosec2 x dx = -cot x + C∫ sec x tan x dx = sec x + C∫ cosec x cot x dx = - cosec x + C(A.B)= |P| |Q| cos θ (Dot Product)(A × B)= |P| |Q| sin θ (Cross Product)k (A + B)= kA + kBtan-1x + cot-1x = π / 2sin-1x + cos-1 x = π / 2cos-1(-x) = π - cos-1xDistance between two points P(x1, y1, z1) and Q(x2, y2, z2): PQ = √ ((x1 - x2)2 + (y1 - y2)2 + (z1 - z2)2) P(A ∩ B) = P(A) P(B | A).P(A | B) = P(A ∩ B) / P(B), provided P(B) ≠ 0.Below are given CBSE Class 12 Maths Formulas for all chapters PDFs and formula list. Unit-I: Relations and Functions1. Relations and FunctionsChapter 1 Relation and Functions makes 4 marks in the final board examinations. Below are given relations and functions Class 12 formulas.RelationsCartesian Product of Two Non-empty Sets: A × B = {(a, b) : a ∈ A and b ∈ B}Cartesian Product of One-empty Sets: A × B = φInverse of Relation: R-1 ={(b, a) : (a, b) ∈ R}where, Domain of R = Range of R-1 and Range of R = Domain of R-1.Universal Relation: R = A × A i.e. reflexive, symmetric, and transitiveReflexive- if (a, a) ∈ R, for every a ∈ A,Symmetric- if (a1, a2) ∈ R implies that (a2, a1) ∈ R , for all a1, a2∈ A,Transitive- if (a1, a2) ∈ R and (a2, a3) ∈ R implies that (a1, a3) ∈ R for all a1, a2, a3 ∈A.Identity Relation: R = {(a, a) : a ∈ AEmpty Relation: , R = φ or R = { }FunctionsLet f: X → R and g: X → R be any two real functions, where X ⊆ R. then, we define (f ± g): X → R by (f ± g)(x) = f(x) ± g(x), for all x ∈ X. (f.g) : X → R by (f.g)(x) = f(x).g(x), for all x ∈ X. (f/g) :X → R by (f/g)(x) = f(x)/g(x) provided g(x) ≠ 0, x ∈ X. Let f: X → R and a be a real number. Then, we define (αf): X → R by (αf)(x) = af(x), for all x ∈ X.(f + g)(x) = f(x) + g(x) ; x є X(f – g)(x) = f(x) – g(x)(f . g)(x) = f(x).g(x)(kf)(x) = k(f(x)) where k is a real number{f/g}(x) = f(x)/g(x), g(x)≠0Download2. Inverse Trigonometric FunctionsChapter 2 Inverse Trigonometric makes 4 marks in the final board examinations. Below are the links for inverse trigonometry formulas for class 12 PDF download. Function Domain Range y = sin-1 x [–1, 1] [−π/2,π/2] y = cos-1 x [–1, 1] [0,π] y = cosec-1 x R – (–1, 1 [−π/2, π/2] – {0} y = sec-1 x R – (–1, 1) [0,π] – {π/2, π/2} y = tan-1 x R (−π/2, π/2) y = cot-1 x R (0,π) sin(sin-1 x)=xsin-1 (sin x) = xcos(cos-1 x) = xcos-1 (cos x) = xtan(tan-1 x) = xtan-1 (tan x) = xsec(sec-1x) = xsec-1(sec x) = xcosec-1(cosec x) = xcosec(cosec-1 x) = xcot-1(cot x) = xcot(cot-1x) = x sin-1 (1/x) = cosec-1 x, x ≥ 1 or x ≤ -1cos-1 (1/x) = sec-1 x, x ≥ 1 or x ≤ -1tan-1 (1/x) = cot-1 x, x > 0sin-1 (-x) = -sin-1 (x), x ∈ [-1, 1]tan-1 (-x) = -tan-1 (x), x ∈ Rcosec-1 (-x) = -cosec-1 (x), |x| ≥1cos-1 (-x) = π – cos-1 (x), x ∈ [-1, 1]sec-1 (-x) = π – sec-1 (x), |x| ≥1 cot-1 (-x) = π – cot-1 (x), x ∈ Rsin-1 x + cos-1 x = π/2tan-1 x + cot-1 x = π/2cosec-1 x + sec-1 x = π/2tan-1 x + tan-1 y = tan-1 {(x+y)/(1−xy)}tan-1 x – tan-1 y = tan-1 {(x-y)/(1+xy)}sin-1 x + sin-1 y = sin-1 [x√(1-y2)+y√(1-x2)]sin-1 x – sin-1 y = sin-1 [x√(1-y2)-y√(1-x2)]cos-1 x + cos-1 y = cos-1 [xy-√(1-x2)√(1-y2)]cos-1 x – cos-1 y = cos-1 [xy+√(1-x2)√(1-y2)]cot-1 x + cot-1 y = cot-1 [(xy-1)/(x+y)]cot-1 x + cot-1 y = cot-1 [(xy+1)/(y-x)]2tan-1 x = sin-1 (2x/1+x2)2tan-1 x = cos-1 (1-x2/1+x2)2tan-1 x = tan-1 (2x/1-x2)2sin-1 x = sin-1 (2x√(1+x2))2cos-1 x = sin-1 (2x√(1-x2))sin-1 x = cos-1 √(1-x2) = tan-1 {x/x√(1-x2)} = cot-1 {√(1-x2)/x}cos-1 x = sin-1 √(1-x2) = tan-1 {√(1-x2)/x} = cot-1 {x/√(1-x2)}tan-1 x = sin-1 {x/√(1-x2)} = cos-1 {x/√(1+x2)} = sec-1 √(1+x2) = cosec-1 {√(1+x2)/x}DownloadUnit-II: Algebra1. MatricesChapter 3 Matrices makes 5 marks in the final board examinations. Below are the links for matrices formulas for class 12 PDF download.Two matrices A = [aij] and B = [bij] are said to be equal if They are of the same order; Each element of A is equal to the corresponding element of B, i.e., aij = bij, for all i and jOrder of Matrix: In m × n matrix when m = nDiagonal Matrix: if aij = 0, when i ≠ jScalar Matrix: if aij = 0, when i ≠ j aij = k (k=constant),and i = jIdentity Matrix: if aij = 1, when i = j when i = j and aij = 0, when i ≠ j.Zero Matrix: When all elements are 0Column Matrix: [A]n×1 Row Matrix: [A]1×n Addition of Matrix: A + B = [aij +bij]m×n, 1 ≤ i ≤ m, 1 ≤ j ≤ nSubtraction of Matrix: A – B = [aij – bij]m×n, 1 ≤ i ≤ m, 1 ≤ j ≤ nMultiplication of a matrix: if A = [aij]m×n, then kA = [kaij]m×nMultiplication of Matrices: if the number of columns in matrix A is equal to the number of rows in matrix B.Download2. DeterminantsChapter 4 Determinants make 5 marks in the final board examinations. Below are the links for determinants formulas for class 12 PDF download.|A| = a11|A| = a11a22 – a12a21Area of a Triangle Using Determinants: 1/2 |x1(y2 – y3) + x2(y3 – y1) + x3(y1 – y2)|Minor of an element aij of a determinant is the determinant obtained by deleting its ith row and jth column in which element aij lies. The minor of aij is denoted by MiThe cofactor of an element aij, denoted by Aij, is defined by, Aij = (–1)i + j Mij where Mij is the minor of aij.Adjoint of a Matrix: The transpose of the matrix [Aij] is called the adjoint of the matrix AA(adj A) = (adj A)A = |A|In |adj A| = |A|n – 1 |A (adj A)| = |A|n |adj (adj A)| = |A|(n −1)2 A(adj A) = |A|n – 2A adj (kA) = kn – 1 (adj A) adj (A′) = (adj A)′ adj (AB) = (adj A)(adj B)Inverse of a Matrix: A– 1 = 1/|a|.(adj A)AA– 1 = 1Solutions of System of Linear Equations Using Inverse of a MatrixAX = BCase I: If |A| ≠ 0, i.e., if A is a non-singular matrix, then A– 1 exists; X = A– 1BCase II: If |A| = 0, i.e., if A is a singular matrix, then A– 1 does not exist.If (adj A)B ≠ O, then the solution does not exist and the given system of equations is inconsistent. If (adj A)B = O, then either no solution exist or infinitely many solutions exist, and accordingly, the given system of equations will be inconsistent or consistent, respectively.DownloadUnit-III: Calculus1. Continuity and DifferentiabilityChapter 5 Continuity and Differentiability make 9 marks in the final board examinations. Below are the links for the continuity and differentiability class 12 formulas PDF download. Continuity: y=f(x) is continuous at x=a if the graph of the function y=f(x) is continuous (without any break) at x = a.f(x) is said to be continuous at a point x = a when: f(a) exists i.e. f(a) is finite, definite and real.limx→a f(x) exists. limx→a f(x)=f(a) function f(x) is continuous at x = a if limh→0 f(a+h)= limh→0 f(a-h)= (a)Continuity of a Function in a Closed Interval: limx→a-0 f(x)= f(a) and limx→b-0 f(x)= (b)Continuity of a Function in an Open Interval: open interval (a,b) if it is continuous at every point in (a,b)Discontinuity: if f and g are continuous functions, then (f ± g) (x) = f(x) ± g(x) is continuous(f . g) (x) = f(x) . g(x) is continuous{f/g}(x)=f(x)/g(x)Chain Rule: If f = v o u, t = u (x), and if both dt/dx and dv/dx exist, then: df/dx = dv/dt. dt/dxAddition Rule: (u±v)′ = u′ ± v′Product Rule: (uv)′ = u′v + uv′Mean Value Theorem: f′(c) = (f(b)−f(a))/(b−a)Rolle's Theorem: If f: [a, b] → R is continuous and differentiable on (a, b) whereas f(a) = f(b) then there exists some c in (a, b) such that f ′(c) = 0.Lagrange's Mean Value Theorem: If f: [a, b] → R is continuous and differentiable on (a, b) then there exists some c in (a, b) such that f ′(c) = (f(b)-f(a))/b-ad (f+g)/dx = d (f)/dx + d (g)/dxd (f-g)/dx = d (f)/dx - d (g)/dxd (f.g)/dx = f.d (g)/dx) + g.d (f)/dx)d (f/g)/dx ={ g.d (f)/dx) + f.d (g)/dx)}/g2Download2. Applications of DerivativesChapter 6 Applications of Derivatives got 4 marks in the final board examinations. Below are the links for the applications of derivatives class 12 formulas PDF download.Instantaneous rate of change= f'(a)=limh→0f(a+h)−f(a)hf'(a) = limh→0f(a+h)−f(a)hAverage rate of change= Δy = f(x + Δx) – f(x)If the value of y increases with an increase in the value of x, then Δy and Δx are both positive and hence dy/dx is positiveIf the value of y decreases with an increase in the value of x, then Δy is negative and Δx is positive. So, dy/dx is negative. Equation of the function of the tangent: L(x) = f(a) + f'(a)(x−a)Tangent line to the curve: m = (y2−y1)/(x2−x1)Slope of the normal line to a curve of a function y = f(x) at a point (x1,y1)(x2,y2): n = -1/m = – 1/ f'(x)Equation of the normal line to the curve: −1/m = (y2−y1)/(x2−x1)Maxima, Minima, and Point of Inflection: Maxima when the slope or f′(x) changes its sign from +ve to -ve as we move via point c. And f(c) is the maximum value.Minima when the slope or f′(x) changes its sign from -ve to +ve as we move via point c. And f(c) is the minimum value.Point C is called the Point of inflection when the sign of slope or sign of the f′(x) doesn't change as we move via c.Increasing and Decreasing Functions on an Intervalstrictly increasing on I, if for all x1, x2 ∈ I, we have x1 < x2 ⇒ f(x1) < f(x2).increasing on I, if for all x1, x2 ∈ I, we have x1 < x2 ⇒ f(x1) ≤ f(x2). strictly decreasing on I, if for all x1, x2 ∈ I, we have x1 < x2 ⇒ f(x1) > f(x2).decreasing on I, if for all x1, x2∈ I, we have x1 < x2 ⇒ f (x1) ≥ f (x2).DownloadChapter 7 Integrals got 9 marks in the final board examinations. Below are the links for the class 12 integration formulas.∫f(x) dx = F(x) + C∫[f(x) + g(x)] dx = ∫f(x) dx + ∫g(x) dx∫[k1f1(x) + k2 f2(x)+…+ knfn(x)] dx = k1 ∫f1(x) dx + k2 ∫ f2(x) dx+…+ kn ∫fn(x) dx∫tan x dx = log|sec x| + C∫cot x dx = log|sin x| + C∫sec x dx =log|sec x + tan x| + C∫cosec x dx = log|cosec x − cot x| + C∫xndx = xn+1/(n+1) + C ∫cos x dx = sin x + C∫sin x dx = −cos x + C∫sec2x dx = tan x + C∫cosec2x dx = −cot x + C∫sec x.tan x dx = sec x + C∫cosec x.cot x dx = −cosec x + C∫exdx = ex + C∫axdx = axlogea + C∫1/x dx = log|x| + CA(x) = ∫axf(x)dx for all x ≥ a then, A′ (x) = f (x) for every x ∈ [a, b]∫baf(x)dx = [F(x) + C]ba = F(b)−F(a)Download4. Applications of the IntegralsChapter 8 Applications of the Integrals got 6 marks in the final board examinations. Below are the links for the class 12 applications of the integrals formulas.Area = ∫bay.dx =∫baf(x).dxArea = ∫dcx.dx =∫dcφ(y).dyArea = ∫ba[f(x)−g(x)].dxArea=∫ba[f(x)−g(x)].dx, + ∫bc[g(x)−f(x)].dxDownload 5. Differential EquationsChapter 9 Differential Equations got 6 marks in the final board examinations. Below are the links for the class 12 differential equations formulas.DownloadUnit-IV: Vectors and Three-Dimensional Geometry1. VectorsChapter 10 Vectors got 7 marks in the final board examinations. Below are the links for the vector algebra class 12 formulas.A + B = B + A (Commutative Law)A + (B + C) = (A + B) + C (Associative Law)(A • B)= |P| |Q| cos θ (Dot Product)(A × B)= |P| |Q| sin θ (Cross Product)k (A + B)= kA + kBA + 0 = 0 + A (Additive Identity)Download2. Three - dimensional GeometryChapter 11 Three-dimensional geometry got 7 marks in the final board examinations. Below are the links for the 3d geometry class 12 formulas.Distance Formula: AB= √(x2-x1)2 + (y2-y1)2 + (z2-z1)2Distance Formula: A(x, y, z) from the origin O(0, 0, 0) = √x2 + (y2-y2 + z2Section Formula:Case 1: When R divides PQ internally in the ratio m: n, thenCase 2: When R divides PQ externally in the ratio m: n, then, Incentre of triangle with vertices (x1, y1), (x2, y2) and (x3, y3) is,((ax1+bx2+cx3)/a+b+c),((ay1+by2+cy3)/a+b+c),((az1+bz2+cz3)/a+b+c)Direction Cosines of a Line: l2 + m2 + n2 = 1cos2 α + cos2 β + cos2 γ = 1Direction Ratios of a Line: Direction ratios of a linel/a = m/b = n/cl= ± [a/ √a2+b2+c2)m= ± [b/ √a2+b2+c2)n= ± [c/ √a2+b2+c2)Angle between two line segments: cosθ = | (a1a2 + b1b2 + c1c2)/√a12+b12+c1 √a22+b22+c2|Two lines will be perpendicular if= a1a2 + b1b2 + c1c2 = 0Two lines will be parallel if= a1/a2 + b1/b2 + c1/c2 = 0Projection of a line segment on a line:| (l(x2-x1) + m(y2-y1) + n(z2-z1)|Equation of a PlaneGeneral form: ax+by+cz+d = 0, where a, b, c are not all zero, a, b, c, d ∈ R.Normal form: lx+my+nz = pPlane through the point (x1, y1, z1): a(x-x1)+b(y-y1)+c(z-z1) = 0Equation of a PlaneGeneral form: ax+by+cz+d = 0, where a, b, c are not all zero, a, b, c, d ∈ R.Normal form: lx+my+nz = pPlane through the point (x1, y1, z1): a(x-x1)+b(y-y1)+c(z-z1) = 0Planes Parallel to AxesPlane Parallel to X-axis is by + cz + d = 0Plane Parallel to Y-axis is ax + cz + d = 0Plane Parallel to Z-axis is ax + by + d = 0DownloadUnit-V: Linear Programming1. Linear ProgrammingChapter 12 Linear Programming got 7 marks in the final board examinations. Below are the links for the 12 maths formula for linear programmingTheorem 1: Let R be the feasible region (convex region) for LPP and let Z = ax + by be the objective function. When Z has an optimal value (maximum or minimum), where the variables x and y are subject to constraints described by linear inequalities, this optimal value must occur at a corner point (vertex) of the feasible region. Theorem 2: Let R be the feasible region (convex region) for LPP and let Z = ax + by be the objective function. If R is bounded, then the objective function Z has both a maximum and a minimum values on R and each of these occurs at the corner point (vertex) of the feasible region.DownloadUnit-VI: Probability1. ProbabilityChapter 13 Probability got 8 marks in the final board examinations. Below are the links for the probability formulas class 12.Addition Theorem for Two Events: P(A ∪ B) = P(A) + P(B) − P(A ∩ B)Conditional Probability:P(A|B) = P(A ∩ B)/P(B) (for P(B) ≠ 0).P(S|F) = P(F|F) = 1P(F)≠0: P((A ∪ B)|F) = P(A|F) + P(B|F) – P((A ∩ B)|F)P(E′|F) = 1 − P(E|F)Multiplication Rule: P(E ∩ F) = P(E) P(F|E) = P(F) P(E|F)P(E ∩ F ∩ G) = P(E) P(F|E) P(G|(E ∩ F)) = P(E) P(F|E) P(G|EF) Independent Events: P (E ∩ F) = P (E).P(F)Baye's Theorem: (P(Ei|A)= P(Ei) P (A|Ei)) /Σnj=1P(Ej) P (A|Ej))Theorem of Total Probability: P(A) = P(E1) P (A|E1) + P (E2) P (A|E2) + … + P (En) . P(A|En)Random Variables and their Probability Distributions:Σni=1 Pi = 1Bernoulli Trials and Binomial Distribution:P (X = x) = P(x) = nCx qn-x px DownloadClick the link below to Class 12 Maths Formulas All Chapter PDF Download CBSEDownloadImportant CBSE Class 12 Mathematics Formulas: ExamplesQ1. Find: ∫sec3θ dθSol. Use Integration by parts and tan2θ=sec2θ-1∫sec3θ dθ= ∫secθ d(tanθ) = secθ tanθ - ∫tanθ d(secθ) = secθ tanθ - ∫secθ tan2θ dθ = secθ tanθ - ∫secθ (sec2θ - 1) dθ =secθ tanθ - ∫secθ dθ - ∫sec3θ dθ ∴ 2∫sec3θ dθ =secθ tanθ - ∫secθ dθQ2. Find, dy/dx, if y = (cos x)x+ cos–1√x is given. Sol. y = (cos x)x+ cos–1√xdy/dx = d((cos x)x+ cos–1√x)/dx//The derivative of arccos x is given by -1/√(1-x2) where -1 < x < 1.Apply the Sum/Difference Rule: (f ± g)'=f' ± g'd((cos x)x/dx + d(arccos√x)/dxf'= d((cos x)x/dx = cosx(x) (ln(cos(x)) - xtan(x))g'= d(arccos√x)/dx= -1/(2√x √1-xFinal answercosx(x) (ln(cos(x)) - xtan(x)) -1/(2√x √1-xMany students often wonder if the formulas they are supposed to learn will be helpful to them in real-life situations. As much as they all laugh at it, many quantities in Physics and magnitude calculation are done using algebraic formulas, and navigation, and insurance risks calculations are also done using these formulas. 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Algebraic formulas, such as the quadratic formula, help find solutions to quadratic equations. Arithmetic and geometric progression formulas enable the computation of sums and terms in these sequences. Trigonometric identities, like the Pythagorean identities, establish relationships between trigonometric functions. Calculus formulas, including derivative and integration rules, are indispensable for analyzing rates of change and calculating areas. Probability and statistics formulas facilitate the interpretation of data and aid in making informed decisions. Class 12th Maths Formulas Download Here we have given the list of some formulas for 12th class Math. Areas Square A=l2 l : length of side Rectangle A=w×h w : width h : height Triangle A=b×h2 b : base h : height Rhombus A=D×d2 D : large diagonal d : small diagonal Trapezoid A=B+b2×h B : large side b : small side h: height Regular polygon A=P2×a P : perimeter a : apothem Circle A=πr2 P=2πr r : radius P : perimeter Cone (lateral surface) A=πr×s r : radius s : slant height Sphere (surface area) A=4πr2 r: radius Volumes Cube V=s3V=s3 ss: side Parallelepiped V=l×w×hV=l×w×h ll: length ww: width hh: height Regular prism V=b×hV=b×h bb: base hh: height Cylinder V=πr2×hV=πr2×h rr: radius hh: height Cone (or pyramid) V=13b×hV=13b×h bb: base hh: height Sphere V=43πr3V=43πr3 rr: radius Functions and Equations for 12th Maths Directly Proportional   y=kxy=kx   k=yxk=yx kk: Constant of Proportionality Inversely Proportional   y=kxy=kx   k=yxk=yx ax2+bx+c=0ax2+bx+c=0 Quadratic formula x=−b±b2−4ac−−−−−−−√2ax=-b±b2-4ac2a Concavity Concave up: a>0a>0 Concave down: a0 Concave down: a