

CLASS 12

MATHEMATICS

NCERT SOLUTIONS

NCERT Solutions for Class 12 Mathematics Chapter 7: Integrals – Free PDF Download

Chapter 7 of Class 12 Maths is Integrals, the reverse process of differentiation. It covers indefinite and definite integrals, integration techniques, and the Fundamental Theorem of Calculus. These Class 12 Mathematics Chapter 7 solutions are also useful as quick revision notes before exams.

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- Integration as the Inverse of Differentiation
- Methods of Integration
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Integration as the Inverse of Differentiation

If $\frac{d}{dx}[F(x)] = f(x)$, then $\int f(x)dx = F(x) + C$, where C is the **constant of integration**. This is the **indefinite integral**.

Methods of Integration

Substitution method: change variables to simplify the integrand. **Integration by partial fractions:** used for rational functions, splitting into simpler fractions. **Integration by parts:** $\int u dv = uv - \int v du$, useful for products of functions (using the ILATE rule to choose u).

Standard Integrals

Key results: $\int x^n dx = x^{n+1}/(n+1) + C$ ($n \neq -1$); $\int 1/x dx = \log|x| + C$; $\int e^x dx = e^x + C$; $\int \sin x dx = -\cos x + C$; $\int \cos x dx = \sin x + C$; $\int 1/\sqrt{a^2 - x^2} dx = \sin^{-1}(x/a) + C$.

Definite Integrals

The **definite integral** $\int_a^b f(x)dx = F(b) - F(a)$, representing the (signed) area under the curve between $x=a$ and $x=b$, evaluated via the **Fundamental Theorem of Calculus**.

Properties of Definite Integrals

Key properties used to simplify evaluation: $\int_a^b f(x)dx = -\int_b^a f(x)dx$; $\int_a^b f(x)dx = \int_a^b f(a+b-x)dx$;
 $\int_0^{2a} f(x)dx = 2\int_0^a f(x)dx$ if $f(2a-x) = f(x)$, else 0.

Class 12 Mathematics Chapter 7 – Notes and Extra Questions

Along with these NCERT Solutions, students can also use the [Class 12 Mathematics Chapter 7 Extra Questions](#) and [Class 12 Mathematics Chapter 7 Revision Notes](#) for quick revision and extra practice.

See also: [Chapter 1](#) | [Chapter 2](#) | [Chapter 3](#) | [Chapter 4](#) | [Chapter 5](#) | [Chapter 6](#)

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