

สูตร 1  $\int u^n du = \frac{u^{n+1}}{n+1} + C, \quad n \neq -1$

จงหาอินทิกรัลต่อไปนี้

$\int (2x + 1)^3 dx$	$\int \sqrt{2x + 1} dx$	$\int \frac{1}{(2x + 1)^2} dx$	$\int \frac{1}{(\sqrt{2x + 1})} dx$
$\int x(3x^2 - 1)^3 dx$	$\int x\sqrt{3x^2 - 1} dx$	$\int \frac{x}{(3x^2 - 1)^2} dx$	$\int \frac{x}{\sqrt{3x^2 - 1}} dx$
$\int \sin^3 x \cos x dx$	$\int \frac{\cos x}{\sqrt{\sin x}} dx$	$\int \sqrt{\sin x} \cos x dx$	$\int \frac{\cos x}{\sin^2 x} dx$
$\int \cos^3 x \sin x dx$	$\int \frac{\sin x}{\sqrt{\cos x}} dx$	$\int \sqrt{\cos x} \sin x dx$	$\int \frac{\sin x}{\cos^2 x} dx$
$\int \tan^3 x \sec^2 x dx$	$\int \frac{\sec^2 x}{\sqrt{\tan x}} dx$	$\int \sqrt{\tan x} \sec^2 x dx$	$\int \frac{\sec^2 x}{\tan^2 x} dx$
$\int \cot^3 x \operatorname{cosec}^2 x dx$	$\int \frac{\operatorname{cosec}^2 x}{\sqrt{\cot x}} dx$	$\int \sqrt{\cot x} \operatorname{cosec}^2 x dx$	$\int \frac{\operatorname{cosec}^2 x}{\cot^2 x} dx$
$\int (e^x + 1)^3 e^x dx$	$\int (5^x + 1)^3 5^x dx$	$\int \frac{\arcsin^3 x}{\sqrt{1 - x^2}} dx$	$\int \frac{\arctan^3 x}{1 + x^2} dx$

สูตร 2  $\int \frac{1}{u} du = \ln |u| + C$

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$\int \frac{1}{2x + 1} dx$	$\int \frac{x}{x^2 + 1} dx$	$\int \frac{x^2}{x^3 + 1} dx$	$\int \frac{x^3}{x^4 + 1} dx$
$\int \frac{\cos x}{\sin x} dx$	$\int \frac{\sin x}{\cos x} dx$	$\int \frac{\sec^2 x}{\tan x} dx$	$\int \frac{\operatorname{cosec}^2 x}{\cot x} dx$
$\int \frac{e^x}{e^x + 1} dx$	$\int \frac{3^x}{3^x + 1} dx$	$\int \frac{5^x}{5^x - 1} dx$	$\int \frac{2^x}{2^x + 3} dx$

$$\text{สูตร 3 } \int \sin u \, du = -\cos u + C$$

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$$\int \sin 2x \, dx \quad \int \sin(2x + 1) \, dx \quad \int x \sin(x^2) \, dx \quad \int x^2 \sin(x^3) \, dx$$

$$\int \frac{\sin(\ln x)}{x} \, dx \quad \int e^x \sin(e^x) \, dx \quad \int e^x \sin(e^x + 1) \, dx \quad \int 3^x \sin(3^x) \, dx$$

$$\text{สูตร 4 } \int \cos u \, du = \sin u + C$$

จงหาอินทิกรัลต่อไปนี้

$$\int \cos 2x \, dx \quad \int \cos(2x + 1) \, dx \quad \int x \cos(x^2) \, dx \quad \int x^2 \cos(x^3) \, dx$$

$$\int \frac{\cos(\ln x)}{x} \, dx \quad \int e^x \cos(e^x) \, dx \quad \int e^x \cos(e^x + 1) \, dx \quad \int 3^x \cos(3^x) \, dx$$

$$\text{สูตร 5 } \int \sec^2 u \, du = \tan u + C$$

จงหาอินทิกรัลต่อไปนี้

$$\int \sec^2 2x \, dx \quad \int \sec^2(2x + 1) \, dx \quad \int x \sec^2(x^2) \, dx \quad \int x^2 \sec^2(x^3) \, dx$$

$$\int \frac{\sec^2(\ln x)}{x} \, dx \quad \int e^x \sec^2(e^x) \, dx \quad \int e^x \sec^2(e^x + 1) \, dx \quad \int 3^x \sec^2(3^x) \, dx$$

$$\text{สูตร 6 } \int \operatorname{cosec}^2 u \, du = -\cot u + C$$

จงหาอินทิกรัลต่อไปนี้

$$\int \operatorname{cosec}^2 2x \, dx \quad \int \operatorname{cosec}^2(2x + 1) \, dx \quad \int x \operatorname{cosec}^2(x^2) \, dx \quad \int x^2 \operatorname{cosec}^2(x^3) \, dx$$

$$\int \frac{\operatorname{cosec}^2(\ln x)}{x} \, dx \quad \int e^x \operatorname{cosec}^2(e^x) \, dx \quad \int e^x \operatorname{cosec}^2(e^x + 1) \, dx \quad \int 3^x \operatorname{cosec}^2(3^x) \, dx$$

$$\text{สูตร 7 } \int \sec u \tan u \, du = \sec u + C$$

จงหาอินทิกรัลต่อไปนี้

$$\int \sec 2x \tan 2x \, dx \qquad \int \frac{\sec(\ln x) \tan(\ln x)}{x} \, dx \qquad \int e^x \sec e^x \tan e^x \, dx$$

$$\text{สูตร 8 } \int \operatorname{cosec} u \cot u \, du = -\operatorname{cosec} u + C$$

จงหาอินทิกรัลต่อไปนี้

$$\int \operatorname{cosec} 2x \cot 2x \, dx \qquad \int \frac{\operatorname{cosec}(\ln x) \cot(\ln x)}{x} \, dx \qquad \int e^x \operatorname{cosec} e^x \cot e^x \, dx$$

$$\text{สูตร 9 } \int \tan u \, du = \ln |\sec u| + C$$

จงหาอินทิกรัลต่อไปนี้

$$\int \tan 2x \, dx \qquad \int \tan(2x + 1) \, dx \qquad \int x \tan(x^2) \, dx \qquad \int x^2 \tan(x^3) \, dx$$
$$\int \frac{\tan(\ln x)}{x} \, dx \qquad \int e^x \tan(e^x) \, dx \qquad \int e^x \tan(e^x + 1) \, dx \qquad \int 7^x \tan(7^x) \, dx$$

$$\text{สูตร 10 } \int \cot u \, du = \ln |\sin u| + C$$

จงหาอินทิกรัลต่อไปนี้

$$\int \cot 2x \, dx \qquad \int \cot(2x + 1) \, dx \qquad \int x \cot(x^2) \, dx \qquad \int x^2 \cot(x^3) \, dx$$
$$\int \frac{\cot(\ln x)}{x} \, dx \qquad \int e^x \cot(e^x) \, dx \qquad \int e^x \cot(e^x + 1) \, dx \qquad \int 2^x \cot(2^x) \, dx$$

$$\text{สูตร 11 } \int \sec u \, du = \ln |\sec u + \tan u| + C$$

จงหาอินทิกรัลต่อไปนี้

$$\int \sec 2x \, dx \qquad \int \sec(2x + 1) \, dx \qquad \int x \sec(x^2) \, dx \qquad \int x^2 \sec(x^3) \, dx$$
$$\int \frac{\sec(\ln x)}{x} \, dx \qquad \int e^x \sec(e^x) \, dx \qquad \int e^x \sec(e^x + 1) \, dx \qquad \int 3^x \sec(3^x) \, dx$$

$$\text{สูตร 12} \quad \int \operatorname{cosec} u \, du = \ln |\operatorname{cosec} u - \cot u| + C$$

จงหาอินทิกรัลต่อไปนี้

$$\int \operatorname{cosec} 2x \, dx \quad \int \operatorname{cosec}(2x + 1) \, dx \quad \int x \operatorname{cosec}(x^2) \, dx \quad \int x^2 \operatorname{cosec}(x^3) \, dx$$

$$\int \frac{\operatorname{cosec}(\ln x)}{x} \, dx \quad \int e^x \operatorname{cosec}(e^x) \, dx \quad \int e^x \operatorname{cosec}(e^x + 1) \, dx \quad \int 3^x \operatorname{cosec}(3^x) \, dx$$

$$\text{สูตร 13} \quad \int e^u \, du = e^u + C$$

จงหาอินทิกรัลต่อไปนี้

$$\int e^{2x} \, dx \quad \int e^{-x} \, dx \quad \int e^{-3x} \, dx \quad \int e^{2x+1} \, dx \quad \int x e^{x^2} \, dx \quad \int x^2 e^{x^3} \, dx$$

$$\int e^{\sin x} \cos x \, dx \quad \int e^{\cos x} \sin x \, dx \quad \int e^{\tan x} \sec^2 x \, dx \quad \int e^{\cot x} \operatorname{cosec}^2 x \, dx$$

$$\int e^{\sec x} \sec x \tan x \, dx \quad \int e^{\operatorname{cosec} x} \operatorname{cosec} x \cot x \, dx \quad \int \frac{e^{\arcsin x}}{\sqrt{1-x^2}} \, dx \quad \int \frac{e^{\arctan x}}{1+x^2} \, dx$$

$$\text{สูตร 14} \quad \int a^u \, du = \frac{a^u}{\ln a} + C$$

จงหาอินทิกรัลต่อไปนี้

$$\int 2^{3x} \, dx \quad \int 2^{-x} \, dx \quad \int 2^{-3x} \, dx \quad \int 2^{2x+1} \, dx \quad \int x 2^{x^2} \, dx \quad \int x^2 2^{x^3} \, dx$$

$$\int 2^{\sin x} \cos x \, dx \quad \int 3^{\cos x} \sin x \, dx \quad \int 7^{\tan x} \sec^2 x \, dx \quad \int 5^{\cot x} \operatorname{cosec}^2 x \, dx$$

$$\int 7^{\sec x} \sec x \tan x \, dx \quad \int 2^{\operatorname{cosec} x} \operatorname{cosec} x \cot x \, dx \quad \int \frac{3^{\arcsin x}}{\sqrt{1-x^2}} \, dx \quad \int \frac{5^{\arctan x}}{1+x^2} \, dx$$

$$\text{สูตร 15} \quad \int \frac{1}{\sqrt{a^2 - u^2}} du = \arcsin \frac{u}{a} + C$$

จงหาอินทิกรัลต่อไปนี้

$$\int \frac{1}{\sqrt{5 - x^2}} dx \quad \int \frac{x}{\sqrt{4 - x^4}} dx \quad \int \frac{x^2}{\sqrt{9 - x^6}} dx \quad \int \frac{1}{x\sqrt{5 - (\ln x)^2}} dx$$

$$\int \frac{\cos x}{\sqrt{2 - \sin^2 x}} dx \quad \int \frac{\sin x}{\sqrt{3 - \cos^2 x}} dx \quad \int \frac{\sec^2 x}{\sqrt{9 - \tan^2 x}} dx \quad \int \frac{\operatorname{cosec}^2 x}{\sqrt{4 - \cot^2 x}} dx$$

$$\int \frac{e^x}{\sqrt{2 - e^{2x}}} dx \quad \int \frac{3^x}{\sqrt{5 - 3^{2x}}} dx \quad \int \frac{\sec x \tan x}{\sqrt{4 - \sec^2 x}} dx \quad \int \frac{\operatorname{cosec} x \cot x}{\sqrt{9 - \operatorname{cosec}^2 x}} dx$$

$$\text{สูตร 16} \quad \int \frac{1}{a^2 + u^2} du = \frac{1}{a} \arctan \frac{u}{a} + C$$

จงหาอินทิกรัลต่อไปนี้

$$\int \frac{1}{5 + x^2} dx \quad \int \frac{x}{4 + x^4} dx \quad \int \frac{x^2}{9 + x^6} dx \quad \int \frac{1}{x(5 + (\ln x)^2)} dx$$

$$\int \frac{\cos x}{2 + \sin^2 x} dx \quad \int \frac{\sin x}{3 + \cos^2 x} dx \quad \int \frac{\sec^2 x}{9 + \tan^2 x} dx \quad \int \frac{\operatorname{cosec}^2 x}{4 - \cot^2 x} dx$$

$$\int \frac{e^x}{2 + e^{2x}} dx \quad \int \frac{3^x}{5 + 3^{2x}} dx \quad \int \frac{\sec x \tan x}{4 + \sec^2 x} dx \quad \int \frac{\operatorname{cosec} x \cot x}{9 + \operatorname{cosec}^2 x} dx$$