

Indefinite Integral
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- ① $\int \frac{10x^9 + 10^x \log_e 10}{x^{10} + 10^x} dx$ is equal to (A) $10^x - x^{10} + c$ (B) $10^x + x^{10} + c$
(C) $10^x - x^{10} + c$ (D) $\log(10^x + x^{10}) + c$
- ② $\int \frac{dx}{\sin^2 x \cos^2 x}$ equals (A) $\tan x + \cot x + c$ (B) $\tan x - \cot x + c$
(C) $\tan x \cot x + c$ (D) $\tan x - \cot 2x + c$
- ③ $\int \frac{\sin^2 x - \cos^2 x}{\sin^2 x \cos^2 x} dx$ is equal to (A) $\tan x + \cot x + c$ (B) $\tan x + \sec x + c$
(C) $-\tan x + \cot x + c$ (D) $\tan x + \sec x + c$
- ④ $\int \frac{e^x(1+x)}{\cos^2(e^x \cdot x)} dx$ equals (A) $-\cot(e^{x^2}) + c$ (B) $\tan(xe^x) + c$
(C) $\tan e^{x^2} + c$ (D) $\cot(e^x) + c$
- ⑤ $\int e^x (\tan^2 x + \frac{1}{1+x^2}) dx$ equals (A) $e^x \tan^2 x + c$ (B) $e^x \sec^2 x + c$ (C) $\tan^2 x + c$
- ⑥ $\int e^x \sec x (1 + \tan x) dx$ equals (A) $e^x \cos x + c$ (B) $e^x \sec x + c$ (C) $e^x \sin x + c$ (D) $\sec x + c$
- ⑦ The value of $\int \frac{2 dx}{\sqrt{1-4x^2}}$ is (A) $\tan^{-1}(2x) + c$ (B) $\cot^{-1}(2x) + c$
(C) $\cos^{-1}(2x) + c$ (D) $\sin^{-1}(2x) + c$
- ⑧ The value of $\int \sin^{-1}(\cos x) dx$ (A) $\frac{\pi x}{2} - \frac{x^2}{2} + c$ (B) $\frac{\pi}{2} + \frac{x^2}{2} + c$
(C) $-\frac{\pi x}{2} - \frac{x^2}{2} + c$ (D) $\frac{\pi}{2} - \frac{x^2}{2} + c$
- ⑨ $\int \frac{dx}{x(x^7+1)}$ is equal to (A) $\log\left(\frac{x^7}{x^7+1}\right) + c$ (B) $\frac{1}{7} \log\left(\frac{x^7}{x^7+1}\right) + c$
(C) $\log\left(\frac{x^7+1}{x^7}\right) + c$ (D) $\frac{1}{7} \log\left(\frac{x^7+1}{x^7}\right) + c$
- ⑩ what is the value of $\int \frac{a + b \sin x}{\cos^2 x} dx$
(A) $a \sec x + b \tan x + c$
(B) $a \tan x + b \sec x + c$ (C) $a \cot x + b \operatorname{cosec} x + c$ (D) $a \operatorname{cosec} x + b \cot x + c$
- ⑪ The value of integral $\int \frac{dx}{x(1+\log x)^2}$ is equal to
(A) $-\frac{1}{1+x} + c$ (B) $-\frac{1}{1+\log x} + c$ (C) $\frac{1}{1+\log x} + c$ (D) $\frac{1}{1+x^2} + c$
- ⑫ The value of $\int \frac{x^{e-1} + e^{x-1}}{x^e + e^x} dx$ is equal to
(A) $x + c$ (B) $\log|x| + c$ (C) $\log(e^x + x^e) + c$ (D) $\log(x^e + e^x)^{\frac{1}{e}} + c$
- ⑬ $\int \frac{dx}{1+e^x}$ is equal to (A) $1+e^x + c$ (B) $\frac{1}{2} \log(1+e^x)$ (C) $\log(1+e^x)$ (D) $2 \log(1+e^x)$
- ⑭ $\int (e^x + 1)^{-1} dx$ is equal to (A) $\log(e^x + 1)$ (B) $\log(e^{-x} + 1)$ (C) $-\log(e^{-x} + 1)$
(D) $-(e^x + 1) + c$
- ⑮ $\int \frac{\sin x + \cos x}{\sqrt{1 + \sin 2x}} dx$ is equal to (A) $\log(\sin x + \cos x) + c$
(B) $x + c$
(C) $\log(1 + \sin 2x) + c$
(D) $\sin x + \cos x + c$

(16) $\int e^{3 \log u} (u^4 + 1)^{-1} du$ is equal to (a) $\log(u^4 + 1) + C$
 (b) $\frac{1}{4} \log(u^4 + 1) + C$ (c) $-\log(u^4 + 1) + C$ (d) N.O.T

(17) what is the value of $\int e^{\log u} \sin x du$
 (a) $e^{\log u} (\sin x - \cos x) + C$ (b) $(\sin x - \cos x) + C$ (c) $(u \sin x + \cos x) + C$ (d) $(\sin x + u \cos x)$

(18) $\int \frac{\cos 2x - 1}{\cos 2x + 1} dx$ is equal to (a) $\tan x - x + C$ (b) $x + \tan x + C$
 (c) $x - \tan x + C$ (d) $-x - \cot x + C$

(19) $\int \frac{\sin \sqrt{x}}{\sqrt{x}} dx$ is equal to (a) $\frac{\cos \sqrt{x}}{2} + C$ (b) $2 \cos \sqrt{x} + C$
 (c) $-\frac{\cos \sqrt{x}}{2} + C$ (d) $-2 \cos \sqrt{x} + C$

(20) $\int \frac{(x+1)^2}{x(x^2+1)} dx$ is equal to (a) $\log x + C$ (b) $\log x + 2 \tan^{-1} x + C$
 (c) $\log \frac{1}{x^2+1} + C$ (d) $\log \{x(x^2+1)\} + C$