



INTEGRAL BY SUBSTITUTION

Class 12 - Mathematics

Time Allowed: 29 minutes

Maximum Marks: 20

1. Evaluate: $\int \frac{1+\cos x}{(x+\sin x)^3} dx$ [1]
2. Evaluate: $\int \cot^n \operatorname{cosec}^2 x \, dx$, $n \neq -1$ [1]
3. Evaluate $\int \tan^2 x \sec^4 x \, dx$ [1]
4. Evaluate: $\int \frac{1-\sin x}{\cos^2 x} dx$ [1]
5. Find: $\int x\sqrt{1+2x} dx$ [1]
6. Evaluate the integral: $\int \sec x \log (\sec x + \tan x) dx$ [1]
7. Integrate the function: e^{2x+3} [1]
8. Integrate the function: $\sqrt{\sin 2x} \cos 2x$ [1]
9. Evaluate: $\int \sqrt{\tan x} (1 + \tan^2 x) dx$ [1]
10. Evaluate the integral: $\int \sin x \cos x dx$ [1]
11. Evaluate: $\int \frac{1}{\sqrt{1-x^2} (\sin^{-1} x)^2} dx$ [1]
12. Evaluate the integral: $\int \frac{1}{x \log x} dx$ [1]
13. Evaluate the integral: $\int \frac{x \tan^{-1} x^2}{(1+x^4)} dx$ [1]
14. Evaluate: $\int \frac{x^2+4x}{x^3+6x^2+5} dx$ [1]
15. Evaluate: $\int \frac{-\sin x+2 \cos x}{2 \sin x+\cos x} dx$ [1]
16. Evaluate: $\int \frac{\sin (2 \tan^{-1} x)}{(1+x^2)} dx$. [1]
17. Integrate: $\int \left(e^x + \frac{1}{e^x}\right)^2 dx$ [1]
18. Write a value of $\int \tan^3 x \sec^2 x dx$ [1]
19. Evaluate: $\int \frac{\csc^2 x}{1+\cot x} dx$ [1]
20. Evaluate: $\int \operatorname{cosec} x dx$ [1]