



MATHS

BOOKS - PATHFINDER MATHS (BENGALI ENGLISH)

INDEFINITE INTEGRAL

Question Bank

1. Evaluate : $\int \sqrt[3]{s^2} ds$



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2. Evaluate : $\int \frac{2 \cos x}{3 \sin^2 x} dx$



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3. Evaluate : $\int \frac{dx}{50 + 2x^2}$



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4. Integrate the following function w.r.t.x.

$$\sin^{-1} \left(2 \frac{\tan\left(\frac{x}{2}\right)}{1 + \tan^2\left(\frac{x}{2}\right)} \right)$$



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5. Evaluate: $\int \frac{\tan^5 \sqrt{x} \sec^2 \sqrt{x}}{\sqrt{x}} dx.$



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6. Evaluate: $\int \sqrt{4 - x^2} dx$



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7. Evaluate: $\int \frac{\sec^2 x}{\sqrt{\tan^2 x + 9}} dx.$



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8. Evaluate : $\int \frac{2^x}{1 + 4^x} dx$



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9. If $f'(x) = \sqrt{x}$ and $f(1)=2$, find $f(x)$.



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10. Evaluate the following integral:

$$\int \frac{\sin^3 x + \cos^3 x}{\sin^2 x \cos^2 x} dx.$$



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11. Integrate the following function w.r.t.x:

$$\frac{x}{\sqrt{1+x}}$$



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12. Evaluate : $\int (\sec^4 x \tan x) dx$

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13. Evaluate : $\int \frac{\cos x dx}{\sin^2 x + 4 \sin x + 5}$.

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14. Evaluate the following integral:

$$\int \cos 2x \cos 4x \cos 6x dx$$

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15. Evaluate : $\int (5^{5^{5x}} \cdot 5^{5x} \cdot 5^x) dx$



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16. Evaluate the following integral:

$$\int \sin^4 x \cos^4 x dx$$



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17. Evaluate the following integral:

$$\int (\tan^{-1}) \sqrt{\frac{1 - \sin x}{1 + \sin x}} dx$$



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18. Evaluate: $\int (\sqrt{\tan x} + \sqrt{\cot x}) dx$



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19. Evaluate: $\int \frac{2 \sin x + 3 \cos x}{3 \sin x + 4 \cos x} dx$



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20. Evaluate : $\int \frac{dx}{3 + 2 \sin x + \cos x}$



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21. Evaluate: $\int \frac{1}{1 - \tan x} dx$



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22.

Evaluate:

$$\int \frac{dx}{\sin(x - a)\cos(x - b)}, \quad a - b \neq (2n + 1)\pi, \quad n \in \mathbb{Z}$$



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23. Evaluate: $\int \frac{dx}{\sqrt{(x-1)(x-2)}}$



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24. Evaluate: $\int x \cos^{-1} x dx$



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25. Evaluate: $\int \sqrt{3 - 2x - x^2} dx$



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26. Evaluate: $\int \frac{dx}{(x + 1)(2x + 1)}$



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27. Evaluate: : $\int \frac{2x^3}{(x^2 + 1)^2} dx$



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28. Evaluate: $\int \frac{(\sqrt{x})^3 - \sqrt[3]{x}}{6\sqrt[4]{x}} dx$



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29. Evaluate: $\int \frac{\sqrt{\cos 2x}}{\sin x} dx$



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30. Evaluate: $\int \frac{dx}{\sqrt{9 + 4x^2}}$



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31. Evaluate: $\int \frac{dx}{(x^2 + 4)\sqrt{x^2 - 4}}$



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32. Evaluate: $\int \frac{12x^2 - 2x - 9}{(4x^2 - 1)(x + 3)} dx$



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33. Evaluate: $\int \frac{x^2 + 2}{(x^2 + 1)(x^2 + 4)} dx$



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34. Evaluate: $\int e^{2x} \sin 3x dx$



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35. Evaluate: $\int x^2 \cot^{-1} x dx$



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36. Evaluate: $\int \frac{dx}{1 + 5 \sin^2 x}$



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37. $\int \frac{dx}{x}$



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38. $\int \frac{dx}{x^2(x^4 + 1)^{3/4}}$



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39. $\int \frac{dx}{x^{1/2} + x^{1/3}}$



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