EXERCISE 7.1 - Question No. 1

Find an anti derivative (or integral) of the following functions by the method of inspection. sin 2x

EXERCISE 7.1 - Question No. 2

Find an anti derivative (or integral) of the following functions by the method of inspection. cos 3x

EXERCISE 7.1 - Question No. 3

Find an anti derivative (or integral) of the following functions by the method of inspection. e^{2x}

EXERCISE 7.1 - Question No. 4

Find an anti derivative (or integral) of the following functions by the method of inspection. $(ax + b)^2$

EXERCISE 7.1 - Question No. 5

Find an anti derivative (or integral) of the following functions by the method of inspection. $\sin 2x - 4e^{3x}$

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EXERCISE 7.1 - Question No. 6

Find the integral $\int \left(4e^{3x} + 1\right) dx$

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EXERCISE 7.1 - Question No. 7

Find the integral $\int x^2\left(1 - \frac{1}{x^2}\right)dx$

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EXERCISE 7.1 - Question No. 8

Find the integral $\int \left(ax^2 + bx + c\right)dx$

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EXERCISE 7.1 - Question No. 9

Find the integral $\int \left(2x^2 + e^x\right)dx$

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EXERCISE 7.1 - Question No. 10

Find the integral $\int \left(\sqrt{x} - \frac{1}{\sqrt{x}}\right)^2 dx$

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EXERCISE 7.1 - Question No. 11

Find the integral $\int \frac{x^3 + 5x^2 - 4}{x^2} dx$

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EXERCISE 7.1 - Question No. 12

Find the integral $\int \frac{x^3 + 3x + 4}{\sqrt{x}} dx$

EXERCISE 7.1 - Question No. 13

Find the integral $\int \frac{x^3 - x^2 + x - 1}{x - 1} dx$

EXERCISE 7.1 - Question No. 14

Find the integral $\int (1 - x)\sqrt{x} dx$

EXERCISE 7.1 - Question No. 15

Find the integral $\int \sqrt{x}\left(3x^2 + 2x + 3\right)dx$

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EXERCISE 7.1 - Question No. 16

Find the integral $\int \left(2x - 3\cos x + e^x\right)dx$

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EXERCISE 7.1 - Question No. 17

Find the integral $\int \left(2x^2 - 3\sin x + 5\sqrt{x}\right)dx$

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EXERCISE 7.1 - Question No. 18

Find the integral $\int \sec x(\sec x + \tan x)dx$

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EXERCISE 7.1 - Question No. 19

Find the integral $\int \frac{\sec^2 x}{\operatorname{cosec}^2 x} dx$

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EXERCISE 7.1 - Question No. 20

Find the integral $\int \frac{2 - 3\sin x}{\cos^2 x} dx$

EXERCISE 7.1 - Question No. 21

The anti derivative of $\left(\sqrt{x}+\frac{1}{\sqrt{x}}\right)$ equals (A) $\frac{1}{3}x^{\frac{1}{3}}+2x^{\frac{1}{2}}+C$ (B) $\frac{2}{3}x^{\frac{2}{3}}+\frac{1}{2}x^{2}+C$ (C) $\frac{2}{3}x^{\frac{3}{2}}+2x^{\frac{1}{2}}+C$ (D) $\frac{3}{2}x^{\frac{3}{2}}+\frac{1}{2}x^{\frac{1}{2}}+C$

EXERCISE 7.1 - Question No. 22

If $\frac{d}{dx}f(x)=4x^{3}-\frac{3}{x^{4}}$ such that $f(2)=0$. Then f(x) is (A) $x^{4}+\frac{1}{x^{3}}-\frac{129}{8}$ (B) $x^{3}+\frac{1}{x^{4}}+\frac{129}{8}$ (C) $x^{4}+\frac{1}{x^{3}}+\frac{129}{8}$ (D) $x^{3}+\frac{1}{x^{4}}-\frac{129}{8}$

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EXERCISE 7.10 - Question No. 1

Evaluate the integrals $\int_0^1 \frac{x}{x^2+1} dx$

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EXERCISE 7.10 - Question No. 2

Evaluate the integrals $\int_0^{\frac{\pi}{2}} \sqrt{\sin\phi}\cos^5\phi d\phi$

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EXERCISE 7.10 - Question No. 3

Evaluate the integrals $\int_0^1 \sin^{-1}\left(\frac{2x}{1+x^2}\right)dx$

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EXERCISE 7.10 - Question No. 4

Evaluate the integrals $\int_0^2 x\sqrt{x+2}$

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EXERCISE 7.10 - Question No. 5

Evaluate the integrals $\int_0^{\frac{\pi}{2}} \frac{\sin x}{1+\cos^2 x}dx$

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EXERCISE 7.10 - Question No. 6

Evaluate the integrals $\int_0^2 \frac{dx}{x + 4 - x^2}$

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EXERCISE 7.10 - Question No. 7

Evaluate the integrals $\int_{-1}^{1} 1 \frac{dx}{x^2 + 2x + 5}$

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EXERCISE 7.10 - Question No. 8

Evaluate the integrals $\int_1^2 \left(\frac{1}{x} - \frac{1}{2x^2} \right) e^{2x} dx$

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EXERCISE 7.10 - Question No. 9

Choose the correct answer The value of the integral $\int_{\frac{1}{3}}^{1} \frac{\left(x - x^3\right)^{\frac{1}{3}}}{x^4} dx$

is (A) 6 (B) 0 (C) 3 (D) 4

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EXERCISE 7.10 - Question No. 10

Choose the correct answer If $f(x) = \int_0^x t \sin t dt$, then $f'(x)$ is (A)

$\cos x + x \sin x$ (B) $x \sin x$ (C) $x \cos x$ (D) $\sin x + x \cos x$

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EXERCISE 7.11 - Question No. 1

By using the properties of definite integrals, evaluate the integrals

$$\int_0^{\frac{\pi}{2}} \cos^2 x dx$$

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EXERCISE 7.11 - Question No. 2

By using the properties of definite integrals, evaluate the integrals

$$\int_0^{\frac{\pi}{2}} \frac{\sqrt{\sin x}}{\sqrt{\sin x} + \sqrt{\cos x}} dx$$

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EXERCISE 7.11 - Question No. 3

By using the properties of definite integrals, evaluate the integrals

$$\int_0^{\frac{\pi}{2}} \frac{\sin^{\frac{3}{2}} x dx}{\sin^{\frac{3}{2}} + \cos^{\frac{3}{2}} x}$$

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EXERCISE 7.11 - Question No. 4

By using the properties of definite integrals, evaluate the integrals

$$\int_0^{\frac{\pi}{2}} \frac{\cos^5 x dx}{\sin^5 + \cos^5 x}$$

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EXERCISE 7.11 - Question No. 5

By using the properties of definite integrals, evaluate the integrals

$\int -55|x+2|dx$

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EXERCISE 7.11 - Question No. 6

By using the properties of definite integrals, evaluate the integrals

$\int_2^8 |x-5|dx$ and $\int_{-5}^5 |x+2|dx$

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EXERCISE 7.11 - Question No. 7

By using the properties of definite integrals, evaluate the integrals

$\int_0^1 x(1-x)^n dx$

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EXERCISE 7.11 - Question No. 8

By using the properties of definite integrals, evaluate the integrals

$$\int_0^{\frac{\pi}{4}} \log(1 + \tan x)\,dx$$

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EXERCISE 7.11 - Question No. 9

By using the properties of definite integrals, evaluate the integrals

$$\int_0^2 x\sqrt{2 - x}\,dx$$

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EXERCISE 7.11 - Question No. 10

By using the properties of definite integrals, evaluate the integrals

$$\int_0^{\frac{\pi}{2}} (2\log\sin x - \log\sin 2x)\,dx$$

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EXERCISE 7.11 - Question No. 12

By using the properties of definite integrals, evaluate the integrals

$$\int_0^{\pi} \frac{x\,dx}{1 + \sin x}$$

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EXERCISE 7.11 - Question No. 13

By using the properties of definite integrals, evaluate the integrals

$$\int_{\frac{-\pi}{2}}^{\frac{\pi}{2}} \sin^7 x dx$$

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EXERCISE 7.11 - Question No. 14

By using the properties of definite integrals, evaluate the integrals

$$\int_0^{2\pi} \cos^5 x dx$$

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EXERCISE 7.11 - Question No. 15

By using the properties of definite integrals, evaluate the integrals

$$\int_0^{\frac{\pi}{2}} \frac{\sin x - \cos x}{1 + \sin x \cos x} dx$$

EXERCISE 7.11 - Question No. 16

By using the properties of definite integrals, evaluate the integrals

$$\int_0^{\pi} \log(1 + \cos x)\,dx$$

EXERCISE 7.11 - Question No. 17

By using the properties of definite integrals, evaluate the integrals

$$\int_0^a \frac{\sqrt{x}}{\sqrt{x} + \sqrt{a - x}}\,dx$$

EXERCISE 7.11 - Question No. 18

By using the properties of definite integrals, evaluate the integrals

$\int_0^4 |x - 1| dx$

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EXERCISE 7.11 - Question No. 19

Show that $\int_0^a f(x)g(x)dx = 2\int_0^a f(x)dx$ if f and g defined as

$f(x) = f(a - x)$ and $g(x) + g(a - x) = 4$

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EXERCISE 7.11 - Question No. 20

Choose the correct answer The Value of

$\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \left(x^3 + x\cos x + \tan^5 x + 1\right) dx$ is (A) 0 (B) 2 (C) π (D) 1

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EXERCISE 7.11 - Question No. 21

Choose the correct answer The value of $\int_0^{\frac{\pi}{2}} \log\left(\frac{4 + 3\sin x}{4 + 3\cos x}\right) dx$ (A) 2 (B) $\frac{3}{4}$ (C) 0 (D) -2

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EXERCISE 7.2 - Question No. 1

Integrate the functions $\frac{2x}{1 + x^2}$

EXERCISE 7.2 - Question No. 2

Integrate the functions $\frac{(\log x)^2}{x}$

EXERCISE 7.2 - Question No. 3

Integrate the functions $\frac{1}{x + x\log x}$

EXERCISE 7.2 - Question No. 4

Integrate the functions $\sin x \sin(\cos x)$

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EXERCISE 7.2 - Question No. 5

Integrate the functions $\sin(ax + b)\cos(ax + b)$

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EXERCISE 7.2 - Question No. 6

Integrate the functions $\sqrt{ax + b}$

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EXERCISE 7.2 - Question No. 7

Integrate the functions $x\sqrt{x+2}$

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EXERCISE 7.2 - Question No. 8

Integrate the functions $x\sqrt{1+2x^2}$

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EXERCISE 7.2 - Question No. 9

Integrate the functions $(4x+2)\sqrt{x^2+x+1}$

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EXERCISE 7.2 - Question No. 10

Integrate the functions $\frac{1}{x - \sqrt{x}}$

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EXERCISE 7.2 - Question No. 11

Integrate the functions $\frac{x}{\sqrt{x+4}}, x > 0$

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EXERCISE 7.2 - Question No. 12

Integrate the functions $\left(x^3 - 1\right)^{\frac{1}{3}} x^5$

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EXERCISE 7.2 - Question No. 13

Integrate the functions $\frac{x^2}{\left(2 + 3x^3\right)^3}$

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EXERCISE 7.2 - Question No. 14

Integrate the functions $\frac{1}{x(\log x)^m}, x \text{ and } > ; 0$

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EXERCISE 7.2 - Question No. 15

Integrate the functions $\frac{x}{9 - 4x^2}$

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EXERCISE 7.2 - Question No. 16

Integrate the functions (1). $\frac{x}{9 - 4x^2}$ (2). e^{2x+3}

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EXERCISE 7.2 - Question No. 17

Integrate the functions $\frac{x}{e^{x^2}}$

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EXERCISE 7.2 - Question No. 18

Integrate the functions $\frac{e^{\tan^{(-1)}x}}{1+x^2}$

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EXERCISE 7.2 - Question No. 19

Integrate the functions $\frac{e^{2x}-1}{e^{2x}+1}$

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EXERCISE 7.2 - Question No. 20

Integrate the functions $\frac{e^{2x} - e^{-2x}}{e^{2x} + e^{-2x}}$

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EXERCISE 7.2 - Question No. 21

Integrate the functions $\tan^2(2x - 3)$

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EXERCISE 7.2 - Question No. 22

Integrate the functions $\sec^2(7 - 4x)$

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EXERCISE 7.2 - Question No. 23

Integrate the functions $(1.)(\sec)^2(7 - 4x)$ $(2.)\dfrac{\sin^{-1}x}{\sqrt{1 - x^2}}$

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EXERCISE 7.2 - Question No. 24

Integrate the functions $\dfrac{2\cos x - 3\sin x}{6\cos x + 4\sin x}$

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EXERCISE 7.2 - Question No. 25

Integrate the functions $\dfrac{1}{\cos^2 x(1 - \tan x)^2}$

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EXERCISE 7.2 - Question No. 26

Integrate the functions $\frac{\cos\sqrt{x}}{\sqrt{x}}$

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EXERCISE 7.2 - Question No. 27

Integrate the functions $\sqrt{\sin 2x}\cos 2x$

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EXERCISE 7.2 - Question No. 28

Integrate the functions $\frac{\cos x}{\sqrt{1+\sin x}}$

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EXERCISE 7.2 - Question No. 29

Integrate the functions $\cot x \log \sin x$

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EXERCISE 7.2 - Question No. 30

Integrate the functions $\frac{\sin x}{1+\cos x}$

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EXERCISE 7.2 - Question No. 31

Integrate the functions $\frac{\sin x}{(1+\cos x)^2}$

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EXERCISE 7.2 - Question No. 32

Integrate the functions $\frac{1}{1+\cot x}$

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EXERCISE 7.2 - Question No. 33

Integrate the functions $\frac{1}{1-\tan x}$

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EXERCISE 7.2 - Question No. 34

Integrate the functions $\frac{\sqrt{\tan x}}{\sin x \cos x}$

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EXERCISE 7.2 - Question No. 35

Integrate the functions $\frac{(1+\log x)^2}{x}$

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EXERCISE 7.2 - Question No. 36

Integrate the functions $\frac{(1+x)(x+\log x)^2}{x}$

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EXERCISE 7.2 - Question No. 37

Integrate the functions $\left(x^3 \frac{\sin\left(\tan^{-1} x^4\right)}{1+x^8}\right.$

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EXERCISE 7.2 - Question No. 38

$\int \frac{10x^9 + 10x^x (\log)_e 10 dx}{x^{10} + 10^x}$ equals (A) $10^x - x^{10} + C$ (B) $10^x + x^{10} + C$

(C) $\left(10^x - x^{10}\right)^{-1} + C$ (D) $\log\left(10^x + x^{10}\right) + C$

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EXERCISE 7.2 - Question No. 39

$\int \frac{dx}{\sin^2 x \cos^2 x}$ equals (A) $\tan x + \cot x + C$ (B) $\tan x - \cot x + C$ (C) $\tan x \cot x + C$ (D) $\tan x - \cot 2x + C$

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EXERCISE 7.3 - Question No. 1

Find the integrals of the functions $\sin^2(2x + 5)$

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EXERCISE 7.3 - Question No. 2

Find the integrals of the functions $\sin 3x \cos 4x$

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EXERCISE 7.3 - Question No. 3

Find the integrals of the functions $\cos 2x \cos 4x \cos 6x$

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EXERCISE 7.3 - Question No. 4

Find the integrals of the functions $\sin^3(2x + 1)$

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EXERCISE 7.3 - Question No. 5

Integrate the functions $\sin^3 x \cos^3 x$

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EXERCISE 7.3 - Question No. 6

Integrate the functions $\sin x \sin 2x \sin 3x$

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EXERCISE 7.3 - Question No. 7

Integrate the functions $s \in 4xs \in 8x$

EXERCISE 7.3 - Question No. 8

Integrate the functions $\frac{1 - \cos x}{1 + \cos x}$

EXERCISE 7.3 - Question No. 9

Integrate the functions $\frac{\cos x}{1 + \cos x}$

EXERCISE 7.3 - Question No. 10

Integrate the functions $\sin^4 x$

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EXERCISE 7.3 - Question No. 11

Integrate the functions $\cos^4 2x$

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EXERCISE 7.3 - Question No. 12

Integrate the functions $\frac{\sin^2 x}{1+\cos x}$

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EXERCISE 7.3 - Question No. 13

Integrate the functions $\frac{\cos 2x - \cos 2\alpha}{\cos x - \cos \alpha}$

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EXERCISE 7.3 - Question No. 14

Integrate the functions $\frac{\cos x - \sin x}{1 + \sin 2x}$

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EXERCISE 7.3 - Question No. 15

Integrate the functions $\tan^3 2x \sec 2x$

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EXERCISE 7.3 - Question No. 16

Integrate the functions $\tan^4 x$

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EXERCISE 7.3 - Question No. 17

Integrate the functions $\frac{\sin^3 x + \cos^3 x}{\sin^2 x \cos^2 x}$

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EXERCISE 7.3 - Question No. 18

Integrate the functions $\frac{\cos 2x + 2\sin^2 x}{\cos^2 x}$

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EXERCISE 7.3 - Question No. 19

Integrate the functions $\frac{1}{\sin x \cos^3 x}$

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EXERCISE 7.3 - Question No. 20

Integrate the functions $\frac{\cos 2x}{(\cos x + \sin x)^2}$

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EXERCISE 7.3 - Question No. 21

Integrate the functions $\sin^{-1}(\cos x)$

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EXERCISE 7.3 - Question No. 22

Integrate the functions $\frac{1}{\cos(x-a)\cos(x-b)}$

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EXERCISE 7.3 - Question No. 23

$\int \frac{\sin^2 x - \cos^2 x}{\sin^2 \cos^2 x} dx$ is equal to (A) $\tan x + \cot x + c$ (B)

$\tan x + \operatorname{cosec} x + c$ (C) $-\tan x + \cot x + c$ (D) $\tan x + \sec x + c$

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EXERCISE 7.3 - Question No. 24

$$\int \frac{e^x(1+x)}{\cos^2\left(e^x \cdot x\right)} dx \text{ equals (A) } -\cot\left(ex^x\right) + C \text{ (B) } \tan\left(xe^x\right) + C \text{ (C)}$$

$$\tan\left(e^x\right) + C \text{ (D) } \cot\left(e^x\right) + C$$

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EXERCISE 7.4 - Question No. 1

Integrate the functions $\frac{3x^2}{x^6+1}$

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EXERCISE 7.4 - Question No. 2

Integrate the functions $\frac{1}{\sqrt{1+4x^2}}$

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EXERCISE 7.4 - Question No. 3

Integrate the functions $\frac{1}{\sqrt{(2-x)^2+1}}$

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EXERCISE 7.4 - Question No. 4

Integrate the functions $\frac{1}{\sqrt{9-25x^2}}$

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EXERCISE 7.4 - Question No. 5

Integrate the functions $\frac{3x}{1 + 2x^4}$

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EXERCISE 7.4 - Question No. 6

Integrate the functions $\frac{x^2}{1 - x^6}$

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EXERCISE 7.4 - Question No. 7

Integrate the functions $\frac{x - 1}{\sqrt{x^2 - 1}}$

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EXERCISE 7.4 - Question No. 8

Integrate the functions $\frac{x^2}{\sqrt{x^6 + a^6}}$

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EXERCISE 7.4 - Question No. 9

Integrate the functions $\frac{\sec^2 x}{\sqrt{\tan^2 x + 4}}$

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EXERCISE 7.4 - Question No. 10

Integrate the functions $\frac{1}{\sqrt{x^2 + 2x + 2}}$

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EXERCISE 7.4 - Question No. 11

Integrate the functions $\frac{1}{9x^2 + 6x + 5}$

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EXERCISE 7.4 - Question No. 12

Integrate the functions $\frac{1}{\sqrt{7 - 6x - x^2}}$

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EXERCISE 7.4 - Question No. 13

Integrate the functions $\frac{1}{\sqrt{(x-1)(x-2)}}$

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EXERCISE 7.4 - Question No. 14

Integrate the functions $\frac{1}{\sqrt{8+3x-x^2}}$

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EXERCISE 7.4 - Question No. 15

Integrate the functions $\frac{1}{\sqrt{(x-a)(x-b)}}$

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EXERCISE 7.4 - Question No. 16

Integrate the functions $\frac{4x+1}{\sqrt{2x^2+x-3}}$

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EXERCISE 7.4 - Question No. 17

Integrate the functions $\frac{x+2}{\sqrt{x^2-1}}$

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EXERCISE 7.4 - Question No. 18

Integrate the functions $\frac{5x - 2}{1 + 2x + 3x^2}$

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EXERCISE 7.4 - Question No. 19

Integrate the functions $\frac{6x + 7}{\sqrt{(x - 5)(x - 4)}}$

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EXERCISE 7.4 - Question No. 20

Integrate the functions $\frac{x + 2}{\sqrt{4x - x^2}}$

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EXERCISE 7.4 - Question No. 21

Integrate the functions $\frac{x+2}{\sqrt{x^2+2x+3}}$

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EXERCISE 7.4 - Question No. 22

Integrate the functions $\frac{x+3}{x^2-2x-5}$

Watch Free Video Solution on Doubtnut Now

EXERCISE 7.4 - Question No. 23

Integrate the functions $\frac{5x+3}{\sqrt{x^2+4x+10}}$

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EXERCISE 7.4 - Question No. 24

$\int \frac{dx}{x^2+2x+2}$ equals (A) $x\tan^{-1}(x+1)+C$ (B) $\tan^{-1}(x+1)+C$

(C) $(x+1)\tan^{-1}x+C$ (D) $\tan^{-1}x+C$

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EXERCISE 7.4 - Question No. 25

$\int \frac{dx}{\sqrt{9x - 4x^2}}$ equals (A) $\frac{1}{9}\sin^{-1}\left(\frac{9x - 8}{8}\right) + C$ (B)

$\frac{1}{2}\sin^{-1}\left(\frac{8x - 9}{9}\right) + C$ (C) $\frac{1}{3}\sin^{-1}\left(\frac{9x - 8}{8}\right) + C$ (D)

$\frac{1}{2}\sin^{-1}\left(\frac{9x - 8}{9}\right) + C$

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EXERCISE 7.5 - Question No. 1

Integrate the rational functions $\frac{x}{(x + 1)(x + 2)}$

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EXERCISE 7.5 - Question No. 2

Integrate the rational functions $\frac{1}{x^2 - 9}$

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EXERCISE 7.5 - Question No. 3

Integrate the rational functions $\frac{3x - 1}{(x - 1)(x - 2)(x - 3)}$

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EXERCISE 7.5 - Question No. 4

Integrate the rational functions $\frac{x}{(x - 1)(x - 2)(x - 3)}$

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EXERCISE 7.5 - Question No. 5

Integrate the rational functions $\frac{2x}{x^2 + 3x + 2}$

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EXERCISE 7.5 - Question No. 6

Integrate the rational functions $\frac{1 - x^2}{x(1 - 2x)}$

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EXERCISE 7.5 - Question No. 7

Integrate the rational functions $\frac{x}{\left(x^2 + 1\right)(x - 1)}$

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EXERCISE 7.5 - Question No. 8

Integrate the rational functions $\frac{x}{(x - 1)^2(x + 2)}$

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EXERCISE 7.5 - Question No. 9

Integrate the rational functions $\frac{3x + 5}{x^3 - x^2 - x + 1}$

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EXERCISE 7.5 - Question No. 10

Integrate the rational functions $\frac{2x - 3}{\left(x^2 - 1\right)(2x - 4)}$

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EXERCISE 7.5 - Question No. 11

Integrate the rational functions $\frac{5x}{(x + 1)\left(x^2 - 4\right)}$

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EXERCISE 7.5 - Question No. 12

Integrate the rational functions $\frac{x^3 + x + 1}{x^2 - 1}$

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EXERCISE 7.5 - Question No. 13

Integrate the rational functions $\frac{2}{(1 - x)\left(1 + x^2\right)}$

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EXERCISE 7.5 - Question No. 14

Integrate the rational functions $\frac{3x - 1}{(x + 2)^2}$

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EXERCISE 7.5 - Question No. 15

Integrate the rational functions $\frac{1}{x^4 - 1}$

EXERCISE 7.5 - Question No. 16

Integrate the rational functions $\frac{1}{x\left(x^n+1\right)}$ [Hint: multiply numerator and denominator by x^{n-1} and put $x^n = t$]

EXERCISE 7.5 - Question No. 17

Integrate the rational functions $\frac{\cos x}{(1-\sin x)(2-\sin x)}$ [Hint: Put $\sin x = t$]

EXERCISE 7.5 - Question No. 18

Integrate the rational functions $\frac{\left(x^2+1\right)\left(x^2+2\right)}{\left(x^2+3\right)\left(x^2+4\right)}$

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EXERCISE 7.5 - Question No. 19

Integrate the rational functions $\frac{2x}{\left(x^2+1\right)\left(x^2+3\right)}$

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EXERCISE 7.5 - Question No. 20

Integrate the rational functions $\frac{1}{x\left(x^4 - 1\right)}$

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EXERCISE 7.5 - Question No. 21

Integrate the rational functions $\frac{1}{\left(e^x - 1\right)}$ [Hint : Put $e^x = t$]

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EXERCISE 7.5 - Question No. 22

$$\int \frac{xdx}{(x-1)(x-2)} \text{ equal (A) } \log\left|\frac{(x-1)^2}{x-2}\right| + C \text{ (B) } \log\left|\frac{(x-2)^2}{x-1}\right| + C$$

$$\text{(C) } \log\left|\frac{(x-1)^2}{x-2}\right| + C \text{ (D) } \log|(x-1)(x-2)| + C$$

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EXERCISE 7.5 - Question No. 23

$$\int \frac{dx}{x\left(x^2+1\right)} \text{ equal (A) } \log|x| - \frac{1}{2}\log\left(x^2+1\right) + C \text{ (B)}$$

$$\log|x| + \frac{1}{2}\log\left(x^2+1\right) + C \text{ (C) } -\log|x| + \frac{1}{2}\log\left(x^2+1\right) + C \text{ (D)}$$

$$\frac{1}{2}\log|x| + \log\left(x^2+1\right) + C$$

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EXERCISE 7.6 - Question No. 1

Integrate the functions x sinx

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EXERCISE 7.6 - Question No. 2

Integrate the functions $x\sin 3x$

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EXERCISE 7.6 - Question No. 3

Integrate the functions $x^2 e^x$

EXERCISE 7.6 - Question No. 4

Integrate the functions x log x

EXERCISE 7.6 - Question No. 5

Integrate the functions $x\log 2x$

EXERCISE 7.6 - Question No. 6

Integrate the functions $x^2 \log x$

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EXERCISE 7.6 - Question No. 7

Integrate the functions $x \sin^{-1} x$

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EXERCISE 7.6 - Question No. 8

Integrate the functions $x \tan^{-1} x$

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EXERCISE 7.6 - Question No. 9

Integrate the functions $x\cos^{-1}x$

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EXERCISE 7.6 - Question No. 10

Integrate the functions $\left(\sin^{-1}x\right)^2$

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EXERCISE 7.6 - Question No. 11

Integrate the functions $\frac{x\cos^{-1}x}{\sqrt{1-x^2}}$

EXERCISE 7.6 - Question No. 12

Integrate the functions $x\sec^2 x$

EXERCISE 7.6 - Question No. 13

Integrate the functions $\tan^{-1} x$

EXERCISE 7.6 - Question No. 14

Integrate the functions $x(\log x)^2$

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EXERCISE 7.6 - Question No. 15

Integrate the functions $\left(x^2+1\right)\log x$

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EXERCISE 7.6 - Question No. 16

Integrate the functions $e^x(\sin x+\cos x)$

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EXERCISE 7.6 - Question No. 17

Integrate the functions $\frac{xe^x}{(1+x)^2}$

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EXERCISE 7.6 - Question No. 18

Integrate the functions $e^x\left(\frac{1+\sin x}{1+\cos x}\right)$

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EXERCISE 7.6 - Question No. 19

Integrate the functions $e^x\left(\frac{1}{x}-\frac{1}{x^2}\right)$

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EXERCISE 7.6 - Question No. 20

Integrate the functions $\frac{(x - 3)e^x}{(x - 1)^3}$

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EXERCISE 7.6 - Question No. 21

Integrate the functions $e^{2x}\sin x$

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EXERCISE 7.6 - Question No. 22

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

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EXERCISE 7.6 - Question No. 23

Choose the correct answer $\int x^2 e^{x^3} dx$ equals (A) $\frac{1}{3}e^{x^3} + C$ (B) $\frac{1}{3}e^{x^2} + C$ (C) $\frac{1}{2}e^{x^3} + C$ (D) $\frac{1}{2}e^{x^2} + C$

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EXERCISE 7.6 - Question No. 24

Choose the correct answer $\int e^x \sec x(1 + \tan x)dx$ (A) $e^x \cos x + C$ (B) $e^x \sec x + C$ (C) $e^x \sin x + C$ (D) $e^x \tan x + C$

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EXERCISE 7.7 - Question No. 1

Integrate the functions $\sqrt{4 - x^2}$

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EXERCISE 7.7 - Question No. 2

Integrate the functions $\sqrt{1 - 4x^2}$

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EXERCISE 7.7 - Question No. 3

Integrate the functions $\sqrt{x^2 + 4x + 6}$

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EXERCISE 7.7 - Question No. 4

Integrate the functions $\sqrt{x^2 + 4x + 1}$

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EXERCISE 7.7 - Question No. 5

Integrate the functions $\sqrt{1 - 4x - x^2}$

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EXERCISE 7.7 - Question No. 6

Integrate the functions $\sqrt{x^2 + 4x - 5}$

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EXERCISE 7.7 - Question No. 7

Integrate the functions $\sqrt{1 + 3x - x^2}$

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EXERCISE 7.7 - Question No. 8

Integrate the functions $\sqrt{x^2 + 3x}$

EXERCISE 7.7 - Question No. 9

Integrate the functions $\sqrt{1+\frac{x^2}{9}}$

EXERCISE 7.7 - Question No. 10

Choose the correct answer $\int \sqrt{1+x^2}dx$ is equal to (A)

$\frac{x}{2}\sqrt{1+x^2}+\frac{1}{2}\log\left|\left(x+\sqrt{x+x^2}\right)\right|+C$ (B) $\frac{2}{3}\left(1+x^2\right)^{\frac{3}{2}}+C$ (C)

$\frac{2}{3}x\left(1+x^2\right)^{\frac{3}{2}}+C$ (D) $\frac{x^2}{2}\sqrt{1+x^2}+\frac{1}{2}x^2\log\left|x+\sqrt{1+x^2}\right|+C$

EXERCISE 7.7 - Question No. 11

Choose the correct answer $\int \sqrt{x^2 - 8x + 7}dx$ (A)

$\frac{1}{2}(x - 4)\sqrt{x^2 - 8x + 7} + 9\log\left|x - 4 + \sqrt{x^2 - 8x + 7}\right| + C$ (B)

$\frac{1}{2}(x + 4)\sqrt{x^2 - 8x + 7} + 9\log\left|x + 4 + \sqrt{x^2 - 8x + 7}\right| + C$ (C)

$\frac{1}{2}(x - 4)\sqrt{x^2 - 8x + 7} - 3\sqrt{2}\log\left|x - 4 + \sqrt{x^2 - 8x + 7}\right| + C$ (D)

$\frac{1}{2}(x - 4)\sqrt{x^2 - 8x + 7} - \left(\frac{9}{2}\right)\log\left|x - 4 + \sqrt{x^2 - 8x + 7}\right| + C$

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EXERCISE 7.7 - Question No. 12

Integrate : $\int x\sqrt{x + x^2}dx$

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EXERCISE 7.7 - Question No. 13

Integrate $(x + 1)\sqrt{2x^2 + 3}$

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EXERCISE 7.7 - Question No. 14

Integrate the function $(x + 3)\sqrt{3 - 4x - x^2}$

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EXERCISE 7.8 - Question No. 1

Evaluate the following definite integrals as limit of sums. $\int_a^b x dx$

EXERCISE 7.8 - Question No. 2

Evaluate the following definite integrals as limit of sums.

$\int_0^5 (x+1)dx$

EXERCISE 7.8 - Question No. 3

Evaluate the following definite integrals as limit of sums. $\int_2^3 x^2 dx$

EXERCISE 7.8 - Question No. 4

Evaluate the following definite integrals as limit of sums.

$\int_1^4 \left(x^2 - x\right) dx$

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EXERCISE 7.8 - Question No. 5

Evaluate the following definite integrals as limit of sums. $\int_{-1}^{1} e^x dx$

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EXERCISE 7.8 - Question No. 6

Evaluate the following definite integrals as limit of sums.

$\int_0^4 \left(x + e^{2x}\right) dx$

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EXERCISE 7.9 - Question No. 1

Evaluate the definite integrals $\int -11(x+1)dx$

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EXERCISE 7.9 - Question No. 2

Evaluate the definite integrals $\int_2^3 \frac{1}{x} dx$

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EXERCISE 7.9 - Question No. 3

Evaluate the definite integrals $\int_1^2 \left(4x^3 - 5x^2 + 6x + 9\right) dx$

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EXERCISE 7.9 - Question No. 4

Evaluate the definite integrals $\int 0 \frac{\pi}{4} \sin 2x dx$

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EXERCISE 7.9 - Question No. 5

Evaluate the definite integrals $\int \frac{\pi}{2} 0 \cos 2x dx$

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EXERCISE 7.9 - Question No. 6

Evaluate the definite integrals $\int 45e^x dx$

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EXERCISE 7.9 - Question No. 7

Evaluate the definite integrals $\int_0^{\frac{\pi}{4}} (\tan x) dx$

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EXERCISE 7.9 - Question No. 8

Evaluate the definite integrals $\int_{\frac{\pi}{6}}^{\frac{\pi}{4}} \operatorname{cosec} x dx$

EXERCISE 7.9 - Question No. 9

Evaluate the definite integrals $\int_0^1 \frac{dx}{\sqrt{1 - x^2}}$

EXERCISE 7.9 - Question No. 10

Evaluate the definite integrals $\int_0^1 \frac{dx}{1 - x^2}$

EXERCISE 7.9 - Question No. 11

Evaluate the definite integrals $\int_2^3 \frac{dx}{x^2 - 1}$

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EXERCISE 7.9 - Question No. 12

Evaluate the definite integrals $\int_0^{\frac{\pi}{2}} \cos^2 x dx$

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EXERCISE 7.9 - Question No. 13

Evaluate the definite integrals $\int_2^3 \frac{xdx}{x^2 + 1}$

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EXERCISE 7.9 - Question No. 14

Evaluate the definite integrals $\int_0^1 \frac{2x+3}{5x^2+1} dx$

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EXERCISE 7.9 - Question No. 15

Evaluate the definite integrals $\int_0^1 x e^{x^3} dx$

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EXERCISE 7.9 - Question No. 16

Evaluate the definite integrals $\int 12 \frac{5x^2}{x^2+4x+3}$

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EXERCISE 7.9 - Question No. 17

Evaluate the definite integrals $\int_0^{\frac{\pi}{4}} \left(2\sec^2 x + x^3 + 2\right) dx$

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EXERCISE 7.9 - Question No. 18

Evaluate the definite integrals $\int_0^{\pi} \left(\frac{\sin^2 x}{2} - \frac{\cos^2 x}{2} \right) dx$

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EXERCISE 7.9 - Question No. 19

Evaluate the definite integrals $\int_0^2 \frac{6x+3}{x^2+4} dx$

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EXERCISE 7.9 - Question No. 20

Evaluate the definite integrals $\int_0^1 \left(xe^x + \frac{\sin(\pi x)}{4} \right) dx$

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EXERCISE 7.9 - Question No. 21

Choose the correct answer $\int_1^{\sqrt{3}} \frac{dx}{1+x^2}$ equals (A) $\frac{\pi}{3}$ (B) $\frac{2\pi}{3}$ (C) $\frac{\pi}{6}$ (D) $\frac{\pi}{12}$

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EXERCISE 7.9 - Question No. 22

Choose the correct answer $\int_0^{\frac{2}{3}} \frac{dx}{4+9x^2}$ (A) $\frac{\pi}{6}$ (B) $\frac{\pi}{12}$ (C) $\frac{\pi}{24}$ (D) $\frac{\pi}{4}$

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MISCELLANEOUS EXERCISE - Question No. 1

Integrate the functions $\frac{1}{x - x^3}$

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MISCELLANEOUS EXERCISE - Question No. 2

Integrate the functions $\frac{1}{\sqrt{x+a} + \sqrt{x+b}}$

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MISCELLANEOUS EXERCISE - Question No. 3

Integrate the functions $\frac{1}{x\sqrt{ax - x}}$ [Hints : Put $x = \frac{\alpha}{t}$]

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MISCELLANEOUS EXERCISE - Question No. 4

Integrate the functions $\frac{1}{x^2\left(x^4 + 1\right)^{\frac{3}{4}}}$

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MISCELLANEOUS EXERCISE - Question No. 5

Integrate the functions $\frac{1}{x^{\frac{1}{2}} + x^{\frac{1}{3}}}$ [Hint: $\frac{1}{x^{\frac{1}{2}} + x^{\frac{1}{3}}} = \frac{1}{x^{\frac{1}{3}}\left(1 + x^{\frac{1}{6}}\right)}$,

put $x = t^6$]

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MISCELLANEOUS EXERCISE - Question No. 6

Integrate the functions $\frac{5x}{(x+1)\left(x^2+9\right)}$

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MISCELLANEOUS EXERCISE - Question No. 7

Integrate the functions $\frac{\sin x}{\sin(x - a)}$

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MISCELLANEOUS EXERCISE - Question No. 8

Integrate the functions $\frac{e^{5\log x} - e^{4\log x}}{e^{2\log x} - e^{2\log x}}$

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MISCELLANEOUS EXERCISE - Question No. 9

Integrate the functions $\frac{\cos x}{\sqrt{4 - \sin^2 x}}$

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MISCELLANEOUS EXERCISE - Question No. 10

Integrate the functions $\frac{\sin^8 - \cos^8 x}{1 - 2\sin^2 x \cos^2 x}$

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MISCELLANEOUS EXERCISE - Question No. 11

Integrate the functions $\frac{1}{\cos(x + a)\cos(x + b)}$

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MISCELLANEOUS EXERCISE - Question No. 12

Integrate the functions $\frac{x^3}{\sqrt{1 - x^8}}$

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MISCELLANEOUS EXERCISE - Question No. 13

Integrate the functions $\frac{e^x}{\left(1+e^x\right)\left(2+e^x\right)}$

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MISCELLANEOUS EXERCISE - Question No. 14

Integrate the functions $\frac{1}{\left(x^2+1\right)\left(x^2+4\right)}$

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MISCELLANEOUS EXERCISE - Question No. 15

Integrate the functions $\cos^3 x e^{\log \sin x}$

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MISCELLANEOUS EXERCISE - Question No. 16

Integrate the functions $e^{3\log x}\left(x^4+1\right)^{-1}$

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MISCELLANEOUS EXERCISE - Question No. 17

Integrate the functions $f'(ax+b)[f(ax+b)]^n$

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MISCELLANEOUS EXERCISE - Question No. 18

Integrate the functions $\frac{1}{\sqrt{\sin^3 x \sin(x+\alpha)}}$

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MISCELLANEOUS EXERCISE - Question No. 19

Integrate the functions $\frac{\sin^{-1}\sqrt{x} - \cos^{-1}\sqrt{x}}{\sin^{-1}\sqrt{x} + \cos^{-1}\sqrt{x}}, x \in [0, 1]$

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MISCELLANEOUS EXERCISE - Question No. 20

Integrate the functions $\sqrt{\frac{1-\sqrt{x}}{1+\sqrt{x}}}$

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MISCELLANEOUS EXERCISE - Question No. 21

Integrate the functions $\frac{2+\sin 2x}{1+\cos 2x}e^{x}$

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MISCELLANEOUS EXERCISE - Question No. 22

Integrate the functions $\frac{x^{2}+x+1}{(x+1)^{2}(x+2)}$

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MISCELLANEOUS EXERCISE - Question No. 23

Integrate the functions $\tan^{-1}\sqrt{\frac{1-x}{1+x}}$

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MISCELLANEOUS EXERCISE - Question No. 24

Integrate the functions $\frac{\sqrt{x^2+1}\left[\log\left(x^2+1\right)-2\log x\right]}{x^4}$

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MISCELLANEOUS EXERCISE - Question No. 25

Evaluate the definite integrals $\int_{\frac{\pi}{2}}^{\pi} e^x\left(\frac{1-\sin x}{1+\cos x}\right)dx$

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MISCELLANEOUS EXERCISE - Question No. 26

Evaluate the definite integrals $\int_0^{\frac{\pi}{4}} \frac{\sin x \cos x}{\cos^4 x + \sin^2 x} dx$

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MISCELLANEOUS EXERCISE - Question No. 27

Evaluate the definite integrals $\int_0^{\frac{\pi}{2}} \frac{\cos^2 x dx}{\cos^2 x + 4\sin^2 x}$

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MISCELLANEOUS EXERCISE - Question No. 28

Evaluate the definite integrals $\int_{\frac{\pi}{6}}^{\frac{\pi}{3}} \frac{\sin x + \cos x}{\sqrt{\sin 2x}} dx$

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MISCELLANEOUS EXERCISE - Question No. 29

Evaluate the definite integrals $\int_0^1 \frac{dx}{\sqrt{1+x} - \sqrt{x}}$

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MISCELLANEOUS EXERCISE - Question No. 30

Evaluate the definite integrals $\int_0^{\frac{\pi}{4}} \frac{\sin x + \cos x}{9 + 16\sin 2x} dx$

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MISCELLANEOUS EXERCISE - Question No. 31

Evaluate the definite integrals $\int_0^{\frac{\pi}{2}} \sin 2x \tan^{-1}(\sin x) dx$

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MISCELLANEOUS EXERCISE - Question No. 32

Evaluate the definite integrals $\int_0^{\pi} \frac{x\tan x}{\sec x + \tan x} dx$

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MISCELLANEOUS EXERCISE - Question No. 33

Evaluate the definite integrals $\int_1^4 [|x - 1| + |x - 2| + |x - 3|] dx$

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MISCELLANEOUS EXERCISE - Question No. 34

Prove that $\int_1^3 \frac{dx}{x^2(x+1)} = \frac{2}{3} + \frac{\log 2}{3}$

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MISCELLANEOUS EXERCISE - Question No. 35

Prove that $\int_0^1 xe^x dx = 1$

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MISCELLANEOUS EXERCISE - Question No. 36

Prove that $\int_{-1}^1 x^{17}\cos^4 x dx = 0$

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MISCELLANEOUS EXERCISE - Question No. 37

Prove that $\int_0^{\frac{\pi}{2}} \sin^3 x dx = \frac{2}{3}$

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MISCELLANEOUS EXERCISE - Question No. 38

Prove that $\int_0^{\frac{\pi}{4}} 2\tan^3 x dx = 1 - \log 2$

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MISCELLANEOUS EXERCISE - Question No. 39

Prove that $\int_0^1 \sin^{-1} x dx = \frac{\pi}{2} - 1$

MISCELLANEOUS EXERCISE - Question No. 40

Evaluate $\int 01e^{2-3x}dx$ as a limit of a sum.

MISCELLANEOUS EXERCISE - Question No. 41

Choose the correct answers $\int \frac{dx}{e^x + e^{-x}}$ is equal to (A)

$\tan^{-1}\left(e^x\right) + C$ (B) $\tan^{-1}\left(e^{-x}\right) + C$ (C) $\log\left(e^x - e^{-x}\right) + C$ (D)

$\log\left(e^x + e^{-x}\right) + C$

MISCELLANEOUS EXERCISE - Question No. 42

Choose the correct answers $\int \frac{\cos 2x}{(\sin x + \cos x)^2} dx$ is equal (A) $\frac{-1}{\sin x + \cos x} + C$ (B) $\log|\sin x + \cos x| + C$ C) $\log|\sin x - \cos x| + C$ (D) $\frac{1}{(\sin x + \cos x)^2}$

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MISCELLANEOUS EXERCISE - Question No. 43

If $f(a + b - x) = f(x)$, then $\int abf(x)dx$ is equal to (A) $\frac{a+b}{2}\int abf(b - x)dx$ (B) $\frac{a+b}{2}\int abf(b + x)dx$ (C) $\frac{b-a}{2}\int abf(x)dx$ (D) $\frac{a+b}{2}\int abf(x)dx$

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MISCELLANEOUS EXERCISE - Question No. 44

The value of $\int_0^1 \tan^{-1}\left(\frac{2x-1}{1+x-x^2}\right)dx$ is (A) 1 (B) 0 (C) -1 (D) $\frac{\pi}{4}$

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SOLVED EXAMPLES - Question No. 1

Write an anti derivative for each of the following functions using the method of inspection: (i) cos 2x (ii) $3x^2 + 4x^3$ (iii) $\frac{1}{x}, x \neq 0$

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SOLVED EXAMPLES - Question No. 2

Find the following integrals: (i) $\int \frac{x^3 - 1}{x^3} dx$ (ii) $\int \left(x^{\frac{2}{3}} + 1 \right) dx$ (iii)

$\int \left(x^{\frac{2}{3}} + 2e^x - \frac{1}{x} \right) dx$

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SOLVED EXAMPLES - Question No. 3

Find the following integrals: (i) $\int (\sin x + \cos x) dx$ (ii)

$\int \operatorname{cosec} x (\operatorname{cosec} x + \cos x) dx$ (iii) $\int \frac{1 - \sin x}{\cos^2 x} dx$

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SOLVED EXAMPLES - Question No. 4

Find the anti derivative F of f defined by $f(x) = 4x^3 - 6$, where $F(0) = 3$

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SOLVED EXAMPLES - Question No. 5

Integrate the following functions w.r.t. x: (i) sin mx (ii) $2x\sin\left(x^2+1\right)$ (iii) $\frac{\tan^4\sqrt{x}\sec^2\sqrt{x}}{\sqrt{x}}$ (iv) $\left(\frac{\sin\left(\tan^{-1}x\right)}{1+x^2}\right.$

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SOLVED EXAMPLES - Question No. 6

Find the following integrals: (i) $\int \sin^3 x \cos^2 x dx$ (ii) $\int \frac{\sin x}{\sin(x+a)dx}$

(iii) $\int \frac{1}{1+\tan x} dx$

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SOLVED EXAMPLES - Question No. 7

Find (i) $\int \cos^2 x dx$ (ii) $\int \sin 2x \cos 3x dx$ (iii) $\int \sin^3 x dx$

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SOLVED EXAMPLES - Question No. 8

Find the following integrals: (i) $\int \frac{dx}{x^2 - 16}$ (ii) $\int \frac{dx}{\sqrt{2x - x^2}}$

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SOLVED EXAMPLES - Question No. 9

Find the following integrals : (i) $\int \frac{dx}{x^2 - 6x + 13}$ (ii) $\int \frac{dx}{3x^2 + 13x - 10}$ (iii) $\int \frac{dx}{\sqrt{5x^2 - 2x}}$

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SOLVED EXAMPLES - Question No. 10

Find the following integrals: $\int \frac{x + 3}{\sqrt{5 - 4x + x^2}} dx$

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SOLVED EXAMPLES - Question No. 10

Find the following integrals: (i) $\int \frac{x+2}{2x^2+6x+5}dx$ (ii) $\int \frac{x+3}{\sqrt{5-4x+x^2}}dx$

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SOLVED EXAMPLES - Question No. 11

Find $\int \frac{dx}{(x+1)(x+2)}$

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SOLVED EXAMPLES - Question No. 12

Find $\int \frac{x^2+1}{x^2-5x+6}dx$

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SOLVED EXAMPLES - Question No. 13

Find $\int \frac{3x - 2}{(x + 1)^2(x + 3)dx}$

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SOLVED EXAMPLES - Question No. 14

Find $\int \frac{x^2}{\left(x^2 + 1\right)\left(x^2 + 4\right)dx}$

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SOLVED EXAMPLES - Question No. 15

Find $\int \frac{(3\sin\varphi - 2)\cos\varphi}{5 - \cos\varphi - 4\sin\varphi} d\varphi$

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SOLVED EXAMPLES - Question No. 16

Find $\int \frac{x^2 + x + 1 dx}{(x+2)\left(x^2+1\right)}$

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SOLVED EXAMPLES - Question No. 17

Find $\int x \cos x dx$

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SOLVED EXAMPLES - Question No. 18

Find $\int \log x dx$

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SOLVED EXAMPLES - Question No. 19

Find $\int x e^x dx$

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SOLVED EXAMPLES - Question No. 20

Find $\int \frac{x \sin^{-1} x}{\sqrt{1 - x^2}} dx$

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SOLVED EXAMPLES - Question No. 21

Find $\int e^x \sin x dx$

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SOLVED EXAMPLES - Question No. 22

Find (i) $\int e^x \left(tan^{-1}x + \frac{1}{1+x^2} \right) dx$ (ii) $\int \frac{\left(x^2+1\right)e^x}{(1+x)^2} \Bigg) dx$

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SOLVED EXAMPLES - Question No. 23

Find $\int \sqrt{x^2+2x+5} dx$

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SOLVED EXAMPLES - Question No. 24

Find $\int \sqrt{3 - 2x - x^2} dx$

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SOLVED EXAMPLES - Question No. 25

Find $\int_0^2 \left(x^2 + 1\right) dx$ as the limit of a sum.

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SOLVED EXAMPLES - Question No. 26

Evaluate $\int_0^2 e^2 dx$

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SOLVED EXAMPLES - Question No. 27

Evaluate the following integrals: (i) $\int 23x^2 dx$ (ii) $\int 49 \frac{\sqrt{x}}{\left(30 - x^{\frac{3}{2}}\right)^2} dx$

(iii) $\int 12 \frac{xdx}{(x+1)(x+2)}$ (iv) $\int 0 \frac{\pi}{4} \sin^3 2t \cos 2t dt$

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SOLVED EXAMPLES - Question No. 28

Evaluate $\int_{-1}^{1} 5x^4 \sqrt{x^5 + 1} dx$

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SOLVED EXAMPLES - Question No. 29

Evaluate $\int_0^1 \frac{\tan^{-1} x}{1+x^2} dx$

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SOLVED EXAMPLES - Question No. 30

Evaluate $\int -12|x^3 - x|dx$

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SOLVED EXAMPLES - Question No. 31

Evaluate $\int_{-\frac{\pi}{4}}^{\frac{\pi}{4}} \sin^2 x dx$

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SOLVED EXAMPLES - Question No. 32

Evaluate $\int_0^{\pi} \frac{x \sin x}{1 + \cos^2 x} dx$

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SOLVED EXAMPLES - Question No. 33

Evaluate $\int_{-1}^{1} \sin^5 x \cos^4 x dx$

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SOLVED EXAMPLES - Question No. 34

Evaluate $\int_0^{\frac{\pi}{2}} \left(\frac{\sin^4 x}{\sin^4 x + \cos^4 x} \right) dx$

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SOLVED EXAMPLES - Question No. 35

Evaluate $\int_{\frac{\pi}{6}}^{\frac{\pi}{3}} \frac{dx}{1 + \sqrt{\tan x}}$

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SOLVED EXAMPLES - Question No. 36

Evaluate $\int 0 \frac{\pi}{2} \log \sin x dx$

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SOLVED EXAMPLES - Question No. 37

Find $\int \cos 6x \sqrt{1 + \sin 6x} dx$

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SOLVED EXAMPLES - Question No. 38

Find $\int \frac{\left(x^4 - x\right)^{\frac{1}{4}}}{x^5} dx$

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SOLVED EXAMPLES - Question No. 39

Find $\int \frac{x^4 dx}{(x-1)\left(x^2+1\right)}$

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SOLVED EXAMPLES - Question No. 40

Find $\int \left[\log(\log x) + \frac{1}{(\log x)^2}\right] dx$

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SOLVED EXAMPLES - Question No. 41

Find $\int \left[\sqrt{\cot x} + \sqrt{\tan x}\right] dx$

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SOLVED EXAMPLES - Question No. 42

Find $\int \frac{\sin 2x \cos 2x dx}{\sqrt{9 - \cos^4(2x)}}$

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SOLVED EXAMPLES - Question No. 43

Evaluate $\int_{-1}^{\frac{3}{2}} |x \sin(\pi x)| dx$

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SOLVED EXAMPLES - Question No. 44

Evaluate $\int_0^{\pi} \frac{x dx}{a^2 \cos^2 x + b^2 \sin^2 x}$

SOLVED EXAMPLES - Question No. 45

Find $\int x\sqrt{1 + x - x^2}dx$

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