RAVI MATHS TUITION CENTER, CHENNAI-82. WHATSAPP - 8056206308

Integrals

12th Standard

Maths

90 x 1 = 90

1) 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) $\frac{3}{2}x^{\frac{3}{2}}+\frac{1}{2}x^{\frac{1}{2}}+C$

2) 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) $x^3+\frac{1}{x^4}-\frac{129}{8}$

3) $\int\frac{10x^9+10^x log_e 10dx}{x^{10}+10^x}$ equals

(a) $10^x - x^{10} + C$ (b) $10^x + x^{10} + C$ (c) $(10^x - x^{10})^{-1} + C$ (d) $\log (10^x + x^{10}) + C$

4) $\int\frac{dx}{sin^2 xcos^2 x}$ 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

5) $\int\frac{sin^2 x-cos^2 x}{sin^2 xcos^2 x}$dx is equal to

(a) tan x + cot x + C (b) tan x + cosec x + C (c) – tan x + cot x + C (d) tan x + sec x + C

6) $\int\frac{e^x(1+x)}{cos^2(e^x x)}$dx equals

(a) – cot (ex^x) + C (b) tan (xe^x) + C (c) tan ($e^{x)}$ + C (d) cot (e^x) + C

7) $\int\frac{dx}{x^2+2x+2}$ 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

8) $\int\frac{dx}{\sqrt{9x-4x^2}}$ 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) $\frac{1}{3}sin^{-1}\left(\frac{9x-8}{8}\right)+C$

9) $\int\frac{xdx}{(x-1)(x-2)}$ equals

(a) $log\left|\frac{(x-1)^2}{x-2}\right|+C$ (b) $log\left|\frac{(x-2)^2}{x-1}\right|+C$ (c) $log\left|\left(\frac{x-1}{x-2}\right)^2\right|+C$log (x −1) (x − 2) + C

(d) log |(x −1) (x − 2)| + C

10) $\int\frac{dx}{x(x^2+1)}$ equals

(a) $log|x|-\frac{1}{2}log(x^2+1)+C$ (b) $log|x|+\frac{1}{2}log(x^2+1)+C$ (c) $-log|x|+\frac{1}{2}log(x^2+1)+C$

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

11) $\int x^2\, e^{x^3}$ dx equals

(a) $\frac{1}{3}e^{x^3}+C$ (b) $\frac{1}{3}e^{x^3}+C$ (c) $\frac{1}{2}e^{x^3}+C$ (d) $\frac{1}{2}e^{x^3}+C$

12) $\int e^x \sec(1+\tan x)$ dx equals

(a) $e^x \cos x + C$ (b) $e^x \sec x + C$ (c) $e^x \sin x + C$ (d) $e^x \tan x + C$

13) $\int\sqrt{1+x^2}dx$ is equal to

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

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

14) $\int \sqrt{x^2-8x+7}dx$ is equal to

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

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

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

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

15) $\int_1^{\sqrt{3}} \frac{dx}{1+x^2}$ equals

(a) $\frac{\pi}{3}$ (b) $\frac{2\pi}{3}$ (c) $\frac{\pi}{6}$ (d) $\frac{\pi}{12}$

16) $\int_0^{\frac{2}{3}} \frac{dx}{4+9x^2}$ equals

(a) $\frac{\pi}{6}$ (b) $\frac{\pi}{12}$ (c) $\frac{\pi}{12}$ (d) $\frac{\pi}{4}$

17) The value of the integral $\int_{\frac{1}{3}}^{1} \frac{(x-x^3)^{\frac{1}{3}}}{x^4}dx$ is

(a) 6 (b) 0 (c) 3 (d) 4

18) If $f(x)=\int_0^x t\ sin\ dt$, then f'(x) is

(a) cosx + x sin x (b) x sinx (c) x cosx (d) sinx + x cosx

19) $\int \frac{dx}{e^x+e^{-x}}$ is equal to

(a) $\tan^{-1}(e^x)$ + C (b) $\tan^{-1}(e^{-x})$ + C (c) $\log(e^x - e^{-x})$ + C (d) $\log(e^x + e^{-x})$ + C

20) $\int \frac{cos2x}{(sinx+cosx)^2}dx$ is equal to

(a) $\frac{-1}{(sinx+cosx)^2}+C$ (b) $\log|\sin x+\cos x|$ + C (c) $\log|\sin x-\cos x|$ + C (d) $\frac{1}{(sinx+cosx)^2}$

21) If f (a + b – x) = f (x), then $\int_a^b xf(x)dx$ is equal to

(a) $\frac{a+b}{2}\int_a^b f(b-x)dx$ (b) $\frac{a+b}{2}\int_a^b f(b+x)dx$ (c) $\frac{b-a}{2}\int_a^b f(x)dx$ (d) $\frac{a+b}{2}\int_a^b f(x)dx$

22) The value of $\int_0^1 \left(\frac{2x-1}{1+x-x^2}\right)dx$ is

(a) 1 (b) 0 (c) -1 (d) $\frac{\pi}{4}$

23) The value of $\int_{-\pi/2}^{\pi/2}\left(x^3+x\cos x+\tan^5 x+1\right)dx$ is

(a) zero (b) 2 (c) π (d) 1

24) The value of $\int_0^{\frac{\pi}{2}} \log\left(\frac{4+3\sin x}{4+3\cos x}\right)dx$ is

(a) 2 (b) $\frac{3}{4}$ (c) 0 (d) -2

25) Given $\int 2^x\,dx = f(x) + C$, then f(x) is

(a) 2^x (b) $2^x \log_e 2$ (c) $\frac{2^x}{log_e 2}$ (d) $\frac{2^x}{log_e 2}$

26) $\int \frac{1}{sin^2 x cos^2 x}dx$ is equal to

(a) $\sin^2 x - \cos^2 x$ + C (b) -1 (c) tan x + cot x + C (d) tan x – cot x + C

27) $\int \frac{cos2x-cos2\theta}{cosx-cos\theta}dx$ is equal to

(a) 2(sin x + x cos θ) + C (b) 2(sin x – x cos θ) + C (c) 2(sin x + 2x cos θ) + C

(d) 2(sin x – 2x cos θ) + C

28) $\int \cot^2 x\,dx$ equals to

(a) cot x – x + C (b) cot x + x + C (c) -cot x + x + C (d) -cot x – x + C

29) $\int \frac{sinx+cosx}{\sqrt{1+sin2x}}dx$,\(\frac { 3\pi }{ 4 } is equal to

(a) log |sin x + cos x| (b) x (c) log |x| (d) -x

30) If $\int sec^2(7 - 4x)dx$ = a tan (7 – 4x) + C, then value of a is

(a) 7 (b) -4 (c) 3 (d) $-\frac{1}{4}$

31) The value of λ for which
$\int \frac{4x^3+\lambda 4^x}{4^x+x^4}dx = log|4^x + x^4|$

(a) 1 (b) $\log_e 4$ (c) $\log_4 e$ (d) 4

32) If $\int \frac{1}{\sqrt{4-9x^2}}dx = \frac{1}{3}sin^{-1}(ax) + C$, then value of a is

(a) 2 (b) 4 (c) $\frac{3}{2}$ (d) $\frac{2}{3}$

33) If x = $\int_0^y \frac{dt}{\sqrt{1+9t^2}}$ and $\frac{d^2y}{dx^2}$ = ay then value of a is equal to

(a) 3 (b) 6 (c) 9 (d) 1

34) $\int e^x \left(\frac{1-x}{1+x^2}\right)^2 dx$ is equal to

(a) $\frac{e^x}{1+x^2} + C$ (b) $-\frac{e^x}{1+x^2} + C$ (c) $\frac{e^x}{(1+x^2)^2} + C$ (d) $\frac{e^x}{(1+x^2)^2} + C$

35) $\int_0^{\frac{\pi}{2}} \frac{dx}{1+sinx}$ equals to

(a) 0 (b) $\frac{1}{2}$ (c) 0 (d) $\frac{3}{2}$

36) Let $I_1 = \int_1^2 \frac{dx}{\sqrt{1+x^2}}$ and $I_2 = \int_1^2 \frac{dx}{x}$, then

(a) $I_1 > I_2$ (b) $I_2 > I_1$ (c) $I_1 = I_2$ (d) $I_1 > 2I_2$

37) Evaluate $\int \left(\sqrt{x} - \frac{1}{\sqrt{x}}\right)^2 dx$

(a) $\frac{x^2}{2} + log|x| - 2x + C$ (b) $\frac{x^2}{2} - log|x| + 2x + C$ (c) $-\frac{x^2}{2} + log|x| - 2x + C$ (d) $\frac{x^2}{2} - log|x| - 2x + C$

38) Evaluate $\int (2x^2 - 3sinx + 5\sqrt{x})dx$

(a) $\frac{2}{3}x^2 - 3cosx - \frac{10}{3}x^{\frac{3}{2}} + C$ (b) $\frac{2}{3}x^2 - 3cosx + \frac{10}{3}x^{\frac{3}{2}} + C$ (c) $\frac{2}{3}x^2 + 3cosx - \frac{10}{3}x^{\frac{3}{2}} + C$

(d) $\frac{2}{3}x^2 + 3cosx + \frac{10}{3}x^{\frac{3}{2}} + C$

39) $\int \frac{x^4-2x}{x^3}dx =$

(a) $\frac{x^2}{2} + \frac{2}{x} + C$, where C is the constant of integration

(b) $\frac{x^2}{2} + 2x + C$, where C is the constant of integration

(c) $\frac{x^2}{2} - \frac{2}{x} + C$, where C is the constant of integration

(d) $\frac{x^2}{2} + 2x + C$, where C is the constant of integration

40) Which of the following represents the simplified expression of integral I after rationalisation?

(a) $\int_0^1 (\sqrt{1+x} - \sqrt{x})dx$ (b) $\int_0^1 (\sqrt{x} - \sqrt{1+x})dx$ (c) $\int_0^1 (\sqrt{1+x} + \sqrt{x})dx$ (d) $\int_0^1 (\sqrt{1-x} + \sqrt{x})dx$

41) $\int$ f(x)dx = F(x) and $\int$ g(x)dx = G(x), $\int$ f(x) ± g(x))dx =

(a) f(x) ± g(x))dx (b) f(x) - g(x) (c) f(x) - g(x) (d) F(x) ± G(x)

42) If $\int$ f(x)dx = Φ(x) + C, possesses a primitive, then the number of primitive in the expression Φ(x) + C are

(a) Infinite (b) 2 (c) 1 (d) 0

43) $\int a^x\, dx$ =

(a) $a^x \log a + c$, where C is the constant of integration

(b) ax + c, where C is the constant of integration, (c) $\frac{a^x}{log_a e} + c$, where c is the constant of integration

(d) $\frac{a^x}{log a} + c$, where c is the constant of integration

44) $\int$ f(x) dx = F(x) + c, then $\frac{d}{dx}\left(\int f(x)dx + c\right)$ =

(a) F(x) + c (b) F(x) (c) f(x) + c (d) f(x)

45) Evaluate $\int 4\, dx$

(a) 4 + c (b) 4x (c) 4x + c (d) $4x^2$ + c

46) Write down the following integral in the Differentiation from $\int 2xdx = x^2$

(a) $\frac{dx^2}{dx} = 2$ (b) $\frac{dx^2}{dx} = 2m$ (c) $\frac{dx^2}{dx} = x$ (d) None of the above

47) The anti-derivative of $\left(\sqrt{x} + \frac{1}{\sqrt{x}}\right)$ equal to

(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) $\frac{3}{2}x^{\frac{3}{2}} + \frac{1}{2}x^{\frac{1}{2}} + C$

48) 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) $x^3 + \frac{1}{x^4} - \frac{129}{8}$

49) If $f'(x) = x + \frac{1}{x}$ then the value of f(x) is

(a) $x^2 + \log x + C$ (b) $\frac{x^2}{2} + \log|x| + C$ (c) $\frac{x}{2} + \log x + C$ (d) None of the above

50) $\int \left(\frac{10x^9 + 10^x \log_e 10}{x^{10} + 10^x}\right) dx$ equal to

(a) $10^x - x^{10} + C$ (b) $10^x + x^{10} + C$ (c) $\left(10^x - x^{10}\right)^{-1} + C$ (d) $\log|10^x + x^{10}| + C$

51) $\int \frac{1}{e^x + e^{-x}} dx$ is equal to

(a) $\tan^{-1} e^x + C$ (b) $\tan^{-1} e^{-x} + C$ (c) $\log(e^x - e^{-x}) + C$ (d) $\log(e^x + |\, e^{-x}) + C$

52) $\int \frac{x^9}{(4x^2+1)^6} dx$ is equal to

(a) $\frac{1}{5x}\left(4 + \frac{1}{x^2}\right)^{-5} + C$ (b) $\frac{1}{5}\left(4 + \frac{1}{x^2}\right)^{-5} + C$ (c) $\frac{1}{10x}(1+4)^{-5} + C$ (d) $\frac{1}{10}\left(\frac{1}{x^2} + 4\right)^{-5} + C$

53) $\int \frac{2x^3 - 1}{x + x^4}$ is equal to

(a) $\log\left(x^4 + x\right) + C$ (b) $\log\left(\frac{x^3+1}{x}\right) + C$ (c) $\frac{1}{2}\log\left(x^2 + \frac{1}{x^2}\right) + C$ (d) None of these

54) $\int \frac{\cos 2x}{(\sin x + \cos x)^2} dx$ is equal to

(a) $\frac{-1}{\sin x + \cos x} + C$ (b) $\log|\sin x + \cos x| + C$ (c) $\frac{1}{(\sin x + \cos x)^2} + C$ (d) $\log|\sin x - \cos x| + C$

55) $\int \frac{x}{(x-1)(x-2)} dx$ equals

(a) $\log\left|\frac{(x-1)^2}{x-2}\right| + C$ (b) $\log\left|\frac{(x-2)^2}{x-1}\right| + C$ (c) $\log|\left(\frac{x-1}{x-2}\right)^2$ (d) $\log|(x-1)(x-2)| + C$

56) $\int \frac{dx}{x(x^2+1)}$ equals

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

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

57) If $\int \frac{\sin x}{\cos x(1 + \cos x)} dx = f(x) + C$ then f(x) is

(a) $\log\left|\frac{1+\cos x}{\cos x}\right|$ (b) $\log\left|\frac{\cos x}{1+\cos x}\right|$ (c) $\log|\frac{\sin x}{1+\sin x}$ (d) $\log\left|\frac{1+\sin x}{\sin x}\right|$

58) $\int \frac{x}{(x-1)(x-2)}dx$ equals

(a) $\log\left|\frac{(x-1)^2}{x-2}\right|+C$ (b) $\log\left|\frac{(x-2)^2}{x-1}\right|+C$ (c) $\log\left|\left(\frac{x-1}{x-2}\right)^2\right|$ (d) $\log|(x-1)(x-2)|+C$

59) $\int \frac{dx}{x(x^2+1)}$ equals

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

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

60) If $\int \frac{\sin x}{\cos x(1+\cos x)}dx=f(x)+C$,then f(x) is equal to

(a) $\log\left|\frac{1+\cos x}{\cos x}\right|$ (b) $\log\left|\frac{\cos x}{1+\cos x}\right|$ (c) $\log\left|\frac{\sin x}{1+\sin x}\right|$ (d) $\log\left|\frac{1+\sin x}{\sin x}\right|$

61) If $\int x\sin x dx=-x\cos x+\alpha$ then α is equal to

(a) sinx + C (b) cosx + C (c) -sinx + C (d) None of these

62) $\int \frac{x+\sin x}{1+\cos x}dx$ is equal to

(a) $\log|1+\cos x|+C$ (b) $\log|x+\sin x|+C$ (c) $x-\tan\frac{x}{2}+C$ (d) $x\cdot\tan\frac{x}{2}+C$

63) $\int \sqrt{1+x^2}dx$ is equal to

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

64) $\int e^x\left\{f(x)+f'(x)\right\}dx$ is equal to

(a) $e^xf(x)+C$ (b) $e^x+f(x)+C$ (c) $2e^xf(x)+C$ (d) $e^x-f(x)+C$

65) $\int \sin(\log x)+\cos(\log x)dx$ equals

(a) $x\sin(\log x)+C$ (b) $x\cos(\log x)+C$ (c) $\frac{1}{x}\cos(\log x)+C$ (d) $\frac{1}{x}\sin(\log x)+C$

66) $\int_1^{\sqrt{3}}\frac{1}{1+x^2}dx$ is

(a) $\frac{\pi}{3}$ (b) $\frac{2\pi}{3}$ (c) $\frac{\pi}{6}$ (d) $\frac{\pi}{12}$

67) $\int_0^{2/3}\frac{1}{4+9x^2}dx$ is equal to

(a) $\frac{\pi}{6}$ (b) $\frac{\pi}{12}$ (c) $\frac{\pi}{24}$ (d) $\frac{\pi}{4}$

68) The value of $\int_0^4\left(x+e^{2x}\right)dx$ is

(a) $\frac{15+e^8}{2}$ (b) $\frac{15-e^8}{2}$ (c) $\frac{e^8-15}{2}$ (d) $\frac{-e^8-15}{2}$

69) $\int_{-\pi/4}^{\pi/4}\frac{dx}{1+\cos 2x}$ is equal to

(a) 1 (b) 2 (c) 3 (d) 4

70) $\int_0^{\pi/2}\cos xe^{\sin x}dx$ is equal to

(a) e + 1 (b) e -1 (c) e (d) -e

71) $\int x^2e^{x^3}dx$ is equal to

(a) $\frac{1}{3}e^{x^3}+C$ (b) $\frac{1}{3}e^{x^2}+C$ (c) $\frac{1}{2}e^{x^3}+E$ (d) $\frac{1}{2}e^{x^2}+C$

72) $\int \frac{e^x(1+x)}{\cos^2(e^xx)}dx$ is equal to

(a) $-\cot(ex^x)+C$ (b) $\tan(xe^x)+C$ (c) $\tan(e^x)+C$ (d) $\cot(e^x)+C$

73) Let $f(x)=\frac{\sin^2\pi x}{1+\pi^x}$. Then $\int[f(x)+f(-x)]dx$ is equal to

(a) 0 (b) x + C (c) $\frac{x}{2}-\frac{\sin 2\pi x}{4\pi}+C$ (d) $\frac{x}{2}-\frac{\cos\pi x}{2\pi}+C$

74) $\int \frac{1}{x^2+2x+2}dx$ is equal to

(a) $x\tan^{-1}(x+1)+C$ (b) $\tan^{-1}(x+1)+C$ (c) $(x+1)\tan^{-1}x+C$ (d) $\tan^{-1}x+C$

75) $\int \frac{1}{\sqrt{9x-4x^2}}dx$ is equal to

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

76) If $\int_0^1 \frac{e^t}{1+t}dt=a$, then $\int_0^1 \frac{e^t}{(1+t)^2}dt$ is equal to

(a) $a-1+\frac{e}{2}$ (b) $a+1-\frac{e}{2}$ (c) $a-1-\frac{e}{2}$ (d) $a+1+\frac{e}{2}$

77) The value of $x=\frac{-b\pm\sqrt{b^2-4ac}}{2a}$ is

(a) 1 (b) zero (c) -1 (d) $\frac{\pi}{4}$

78) $\int_0^{\pi/2}\sqrt{1-\sin 2x}dx$ is equal to

(a) $2\sqrt{2}$ (b) $2(\sqrt{2}+1)$ (c) 2 (d) $2(\sqrt{2}-1)$

79) $\int \frac{3x^2+3^x\cdot\log 3}{3^x+x^3}dx$ is equal to

(a) 3^x+x^3+C (b) $\log|3^x+x^3|+C$ (c) $3x^2+3^x\log_e 3+C$ (d) $\log|3x^2+3^x\log_e 3|+C$

80) $\int \frac{3x^2+3^x\cdot\log 3}{3^x+x^3}dx$ is equal to

(a) 3^x+x^3+C (b) $\log|3^x+x^3|+C$ (c) $3x^2+3^x\log_e 3+C$ (d) $\log|3x^2+3^x\log_e 3|+C$

81) $\int \frac{1}{x^2(x^4+1)^{3/4}}$ dx is equal to

(a) $-\left(1+\frac{1}{x^4}\right)^{\frac{1}{4}}+C$ (b) $\left(x^4+1\right)^{\frac{1}{4}}+C$ (c) $\left(1-\frac{1}{x^4}\right)^{\frac{1}{4}}+C$ (d) $-\left(1+\frac{1}{x^4}\right)^{\frac{3}{4}}+C$

82) $\int \frac{xe^x}{(1+x)^2}$ dx is equal to

(a) $\frac{e^x}{x+1}+C$ (b) $e^x(x+1)+C$ (c) $-\frac{e^x}{(x+1)^2}+C$ (d) $\frac{e^x}{1+x^2}+C$

83) If $\int \frac{2^x}{\sqrt{1-4^x}}dx=p\cdot\sin^{-1}(2^x)+C$, then 'p' is equal to

(a) $\log_e 2$ (b) $\frac{1}{2}\log_e 2$ (c) $\frac{1}{2}$ (d) $\frac{1}{\log_e 2}$

84) The value of integral $\int_0^{\frac{\pi}{4}}\frac{\sin x+\cos x}{9+16\sin 2x}dx$ is

(a) $\log 2$ (b) $\frac{1}{20}\log 2$ (c) $\frac{1}{20}\log 3$ (d) $\log 5$

85) The value of integral $\int_{-\frac{1}{2}}^{1/2}\cos x\cdot\log\left(\frac{1+x}{1-x}\right)dx$ is

(a) 0 (b) $\frac{1}{2}$ (c) $\frac{3}{2}$ (d) none of these

86) $\int \cos^3 x\cdot e^{\log(\sin x)}$ dx is equal to

(a) $-\frac{\cos^4 x}{4}+C$ (b) $-\frac{\sin^4 x}{4}+C$ (c) $\frac{e^{\sin x}}{4}+C$ (d) none of these

87) $\int \frac{\sqrt{\tan x}}{\sin x\cdot\cos x}$ dx is equal to

(a) $2\sqrt{\cot x}+C$ (b) $\frac{\sqrt{\tan x}}{2}+C$ (c) $2\sqrt{\tan x}+C$ (d) none of these

88) The value of $\int_0^{\frac{\pi}{2}}\frac{1}{1+\tan^3 x}dx$ is

(a) 0 (b) 1 (c) $\frac{\pi}{4}$ (d) $\frac{\pi}{2}$

89) The value of $\int_8^{13}\frac{\sqrt{21-x}}{\sqrt{x}+\sqrt{21-x}}dx$ is

(a) $\frac{21}{2}$ (b) 0 (c) $\frac{5}{2}$ (d) none of these

90) The value of $\int_0^2 x[x]dx$ is

(a) $\frac{7}{2}$ (b) $\frac{3}{2}$ (c) $\frac{5}{2}$ (d) none of these

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