MATHS

BOOKS - ACCURATE PUBLICATION

INDEFINITE INTEGRALS

Example

1. Evaluate : $\int(\sqrt{3x+1}-\sqrt{3x-2})\,dx.$

Watch Video Solution

2. Evaluate $\int\frac{dx}{\sqrt{3x+2}-\sqrt{3x+1}}$

Watch Video Solution

3. Evaluate $\int \frac{dx}{\sqrt{3x+5}-\sqrt{3x+1}}$

Watch Video Solution

4. Evaluate the following integrals:

$\int \cos^4 2x dx$

Watch Video Solution

5. Evaluate $\int \sin^4 x$ dx.

Watch Video Solution

6. Evaluate the following integrals :

$$\int \cos^4 x.\, dx$$

Watch Video Solution

7. Evaluate $\int \frac{e^{\tan^{-1} x}}{1+x^2}$ dx

Watch Video Solution

8. Evaluate $\int \sin x \sin 2x \sin 3x dx$

Watch Video Solution

9. Evaluate $\int \frac{dx}{e^x + 2e^{-x}}$

Watch Video Solution

10. Evaluate $\int \frac{dx}{e^x + 3e^{-x}}$

Watch Video Solution

11. Evaluate $\int \frac{e^{2x} + 1}{e^{2x} - 1}$

Watch Video Solution

12. Evaluate $\int \frac{1 - e^x}{1 + e^x}$ dx.

Watch Video Solution

13. Evaluate $\int \frac{e^{2x} - 1}{e^{2x} + 1}$ dx.

Watch Video Solution

Watch Video Solution

14. Find $\int \frac{dx}{\sqrt{x}+x}$ or $\int \frac{dx}{\sqrt{x}(1+\sqrt{x})}$.

Watch Video Solution

15. Evaluate : $\int \frac{1}{\sqrt{x}-x} dx$.

Watch Video Solution

16. Evaluate the following integrals :

$$\int \frac{1}{x-\sqrt{x}} dx$$

Watch Video Solution

17. Evaluate the following integrals:

$$\int x^3\sqrt{3+5x^4}dx$$

Watch Video Solution

18. Evaluate: $\int(2x+3)\sqrt{x^2+4x+3}dx$

Watch Video Solution

19. Evaluate $\int(4x+2)\sqrt{x^2+x+1}dx.$

Watch Video Solution

20. Evaluate the following integrals : $\int\sin^2 x\cos^2 xdx$

Watch Video Solution

21. Evaluate the following integrals : $\int \sin^2 x \cos^2 x dx$

Watch Video Solution

22. Evaluate: $\int \sin^3 x dx$:

Watch Video Solution

23. Evaluate the following integrals : $\int \frac{\sin^3 x}{\cos x} dx$

Watch Video Solution

24. Evaluate the following integrals : $\int \frac{\cos^3 x}{\sin x} dx$

Watch Video Solution

25. Evaluate : $\int \frac{dx}{x^2 - 6x + 13}$.

Watch Video Solution

26. Evaluate $\int \frac{dx}{x^2 + 6x + 10}$

Watch Video Solution

27. Evaluate : $\int \frac{dx}{2x^2 - 5x + 7}$.

Watch Video Solution

28. Evaluate : $\int \frac{dx}{5x^2 - 10x + 30}$.

Watch Video Solution

Watch Video Solution

29. Evaluate : $\int \frac{x-1}{\sqrt{x^2+1}} dx.$

Watch Video Solution

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

Watch Video Solution

31. Evaluate $\int \frac{x-3}{\sqrt{x^2+9}} dx$

Watch Video Solution

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

Watch Video Solution

33. Evaluate : $\int \frac{\sec^2 x}{\sqrt{\tan^2 x + 2\tan x + 10}} dx.$

Watch Video Solution

34. Evaluate : $\int \frac{\sec^2 x}{\sqrt{\tan^2 x + 2\tan x + 17}} dx.$

Watch Video Solution

35. Compute the following integrals:

$\int \frac{\sin x}{\sin(x - \alpha)} dx$

Watch Video Solution

36. Find the following integrals

$$\int \frac{\cos x}{\cos(x-\alpha)} dx$$

Watch Video Solution

37. Find the following integrals

$$\int \frac{\cos x}{\cos(x+\alpha)} dx$$

Watch Video Solution

38. Evaluate $\int e^x + 2e^{-x} dx.$

Watch Video Solution

39. Evaluate $\int \frac{dx}{e^x + 3e^{-x}}$

Watch Video Solution

40. Evaluate : $\int \frac{1}{\sqrt{x^2 - 4x + 5}} dx.$

Watch Video Solution

41. Evaluate $\int \frac{1}{\sqrt{x^2 - 6x + 10}}$ dx.

Watch Video Solution

42. Evaluate : $\int (x^2 + 1) dx.$

Watch Video Solution

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

Watch Video Solution

44. Evaluate : $\int \frac{x^2+3}{x^2+9} dx.$

Watch Video Solution

45. Evaluate : $\int \frac{3x-1}{\sqrt{x^2+4x+9}} dx.$

Watch Video Solution

46. Evaluate : $\int \frac{7x+3}{\sqrt{x^2+4x+11}} dx.$

Watch Video Solution

47. Evalute : $\int \frac{5x+3}{\sqrt{x^2+4x+10}} dx$

Watch Video Solution

48. Evaluate $\int \frac{(3x+5)dx}{x^2-8x+7}$

Watch Video Solution

49. Find $\int \frac{6x+7}{\sqrt{x^2-9x+20}}dx.$

Watch Video Solution

50. Evaluate : $\int \sqrt{\frac{1-x}{1+x}}dx.$

Watch Video Solution

51. Evaluate, $\int \sqrt{\left(\frac{2-x}{2+x}\right)}.dx$

Watch Video Solution

52. Evaluate, $\int \sqrt{\frac{3-x}{3+x}}$ dx.

Watch Video Solution

53. Find $\int \sqrt{\frac{4-x}{4+x}} dx.$

Watch Video Solution

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

Watch Video Solution

55. Find $\int \frac{1}{4\sin^2 x + 5\cos^2 x} \text{dx}$

Watch Video Solution

56. Evaluate the following integrals :

$$\int \frac{1}{\sin^2 x + 4\cos^2 x} dx$$

Watch Video Solution

57. Integrate the following functions : $\int \frac{dx}{2 + \sin^2 x}$

Watch Video Solution

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

Watch Video Solution

59. Find $\int \frac{dx}{4+\cos^2 x}$.

Watch Video Solution

60. Evaluate : $\int \log\left(1+x^2\right) dx$.

Watch Video Solution

61. Evaluate, $\int \log\left(2+x^2\right)$ dx.

Watch Video Solution

62. Evaluate , $\int \log\left(4+x^2\right)$ dx.

Watch Video Solution

63. Evaluate the following integrals:

$$\int e^x \cos 2x dx$$

Watch Video Solution

64. Evaluate the following integrals:

$$\int e^x \cos 3x dx$$

Watch Video Solution

65. Find : $\int e^x \cos 4x dx.$

Watch Video Solution

66. Find : $\int e^{4x} \cos 3x dx.$

Watch Video Solution

67. Find : $\int e^{4x} \cos 7x dx$

Watch Video Solution

68. Find : $\int e^{2x} \cos 7x dx$

Watch Video Solution

69. Find : $\int e^{3x} \sin 5x dx.$

Watch Video Solution

70. Evaluate the following cards:

$$\int e^{3x} \cos 5x dx$$

Watch Video Solution

71. Evaluate $\int e^x \left(\sin^{-1} x + \frac{1}{\sqrt{1-x^2}} \right) dx.$

Watch Video Solution

72. Evaluate $\int e^x \left(\cos^{-1} x - \frac{1}{\sqrt{1-x^2}} \right) dx.$

Watch Video Solution

73. Evaluate the following integrals:

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

Watch Video Solution

74. Evaluate the following integrals:

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

Watch Video Solution

75. Integrate $\int e^x \left(\log x + \frac{1}{x} \right) dx.$

Watch Video Solution

76. Evaluate : $\int e^x \left(\frac{x^2+1}{(x+1)^2} \right) dx.$

Watch Video Solution

77. Evaluate $\int \frac{(x^2-3)e^x}{(x+3)^2}$.

Watch Video Solution

78. Evaluate $\int \frac{(x^2-3)e^x}{(x-1)^2}$

Watch Video Solution

79. Evaluate $\int e^x \left(\frac{1+\sin x}{1+\cos x} \right) dx$

Watch Video Solution

80. Evalualte : $\int e^x \left(\frac{2 + \sin 2x}{1 + \cos 2x} \right) dx.$

Watch Video Solution

81. Evaluate : $\int e^x \left(\frac{2 + \sin 2x}{1 + \cos 2x} \right) dx.$

Watch Video Solution

82. Evaluate the following integrals:

$\int \frac{1}{3x^2 + 13x - 10} \text{dx}$

Watch Video Solution

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

Watch Video Solution

84. Evaluate : $\int \frac{x}{x^2+5x+6}dx.$

Watch Video Solution

85. Find $\int \frac{xdx}{x^2+7x+12}.$

Watch Video Solution

86. Evaluate $\int \frac{\cos x dx}{(1-\sin x)(2-\sin x)}$

Watch Video Solution

87. Evaluate $\int \frac{\sin x dx}{(1-\cos x)(2-\cos x)}$

Watch Video Solution

88. Evaluate : $\int \frac{\sin 2x}{(1-\cos 2x)(2-\cos 2x)} dx.$

Watch Video Solution

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

Watch Video Solution

90. Evaluate : $\int \frac{7dx}{x(x^2-1)}.$

Watch Video Solution

91. Evaluate $\int \frac{1}{1-5\cos^2 x} dx$

Watch Video Solution

92. Evaluate $\int \frac{dx}{5\sin^2 x - 4} dx$

Watch Video Solution

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

Watch Video Solution

94. Evaluate $\int \frac{8}{(x+2)(x^2+4)}$ dx

Watch Video Solution

95. Evaluate : $\int (1 - x^3) dx.$

Watch Video Solution

96. Evaluate $\int \frac{dx}{x^3 - 1}$

Watch Video Solution

97. Evalualte : $\int \frac{2x}{x^3 - 1} dx.$

Watch Video Solution

98. Evaluate : $\int \frac{1}{x^3 + 1} dx.$

Watch Video Solution

99. Evaluate $\int \frac{dx}{1 + \sin x + \cos x}$

Watch Video Solution

100. Evaluate $\int \frac{dx}{1-\sin x+\cos x}$

Watch Video Solution

Questions Carrying 1 Mark Type I

1. The anti-derivative of e^{2x} is equal to :

A. $2e^{2x}$

B. $\frac{1}{2}e^{2x}$

C. 0

D. None of these

Answer: B

Watch Video Solution

2. The anti derivative of cos 3x is equal to :

A. 3 sin 3 x

B. $\frac{1}{3}\sin 3x$

C. 0

D. None of these

Answer: D

Watch Video Solution

3. The anti derivative of sin 4x is equal to :

A. $4\cos 4x$

B. $\frac{-1}{4}\cos 4x$

C. 0

D. None of these

Answer: A

Watch Video Solution

4. $\int(\cos x - \sin x)dx$ is equal to :

A. $\sin x + \cos x + c$

B. $\sin x - \cos x + c$

C. $\cos x - \sin x + c$

D. $\tan x + c$

Answer: C

Watch Video Solution

5. $\int(\sin x - \cos x)dx$ is equal to :

A. $\cos x + \sin x + c$

B. $-\cos x - \sin x + c$

C. $\cos x - \sin x + c$

D. $\sin x - \cos x + c$

Answer: C

Watch Video Solution

6. $\int \frac{\sin^2 x - \cos^2 x}{\sin^2 x \cos^2 x} dx$ is equal to :

A. $\tan x + \cot x + C$

B. $\tan x + \cos ecx + C$

C. $-\tan x + \cot x + C$

D. $\tan x + \sec x + C$

Answer: C

Watch Video Solution

7. If $\left(\frac{d}{dx}\right) f(x) = 4x^3 - \frac{3}{x^4}$ 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. $x^3 + \frac{1}{x^4} - \frac{129}{8}$

Answer: C

Watch Video Solution

8. $\int 2^x$ dx is equal to :

A. $2^x + c$

B. $2^x \log^2 + c$

C. $\frac{2^x}{\log 2} + c$

D. None of these

Answer: C

Watch Video Solution

9. $\int 3^x$ dx is equal to :

A. $3^x + c$

B. $3^x \log 3 + c$

C. $\frac{3^x}{\log 3} + c$

D. None of these

Answer: C

Watch Video Solution

10. $\int \frac{1}{2x+3} dx$ is equal to :

A. $\log|2x+3| + c$

B. $2\log|2x+3| + c$

C. $\frac{\log|2x+3|}{2} + c$

D. None of these

Answer: C

Watch Video Solution

11. $\int \frac{1}{2x+5} dx$ is equal to :

A. $\log|2x+5| + c$

B. $\log|2x-5| + c$

C. $\frac{\log|2x+5|}{2} + c$

D. $\frac{-\log|2x+5|}{2} + c$

Answer: C

Watch Video Solution

12. $\int \frac{10x^9 + 10^x \log_e 10}{x^{10} + 10^x}$ dx is equal to :

A. $\log\left|x^{10}+10^{x}\right|+c$

B. $10^{x}+10^{10}+c$

C. $10^{x}-x^{10}+c$

D. $\left(10^{x}-x^{10}\right)^{-1}+c$

Answer: A

Watch Video Solution

13. $\int \frac{7x^{6}+7^{x}\log_{e}7}{x^{7}+7^{x}}$ dx is equal to :

A. $\log\left|x^{7}+7^{x}\right|+c$

B. $7^{x}+x^{7}+c$

C. $7^{x}-x^{7}+c$

D. $\left(7^{x}-x^{7}\right)^{-1}+c$

Answer: A

Watch Video Solution

14. Evaluate the following integrals : $\int \frac{e^x(1+x)}{\cos^2(xe^x)}dx$

A. $-\cot(ex^x)+C$

B. $\tan(xe^x)+C$

C. $\tan(e^x)+C$

D. $\cot(e^x)+C$

Answer: B

Watch Video Solution

15. $\int \frac{dx}{\sqrt{1-x^2}}$ is equal to :

A. $\tan^{-1} x + c$

B. $\sin^{-1} x + c$

C. $\cos^{-1} x + c$

D. $\cot^{-1} x + c$

Answer: B

Watch Video Solution

16. $\int \frac{dx}{1+x^2}$ is equal to :

Watch Video Solution

17. Choose the correct answer: $\int \frac{dx}{\sqrt{9x-4x^2}}$ 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. $\frac{1}{2}\sin^{-1}\left(\frac{9x-8}{9}\right)+C$

Answer: B

Watch Video Solution

18. $\int \frac{dx}{e^x+e^{-x}}$ is equal to:

A. $\tan^{-1}(e^x)+C$

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

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

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

Answer: A

Watch Video Solution

19. Choose the correct answer: $\int \sqrt{1+x^2}dx$ is equal to:

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

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

Answer: A

Watch Video Solution

20. $\int e^x(f(x)+f'(x))dx$ is equal to :

A. $e^x f(x)+c$

B. $e^x f'(x) + c$

C. $e^x + f(x) + c$

D. None of these

Answer: A

Watch Video Solution

21. $\int e^x \left(\log x + \frac{1}{x} \right) dx$ is equal to :

A. $e^x + c$

B. $e^x \log x + c$

C. $\frac{e^x}{x} + c$

D. $\log x + c$

Answer: B

Watch Video Solution

22. $\int e^x(\cot x + \log \sin x)dx$ is equal to :

A. $e^x \cot x + c$

B. $e^x \log \sin x + c$

C. $e^x + \cot x + c$

D. None of these

Answer: B

Watch Video Solution

23. Choose the correct answer: $\int e^x \sec x(1 + \tan x)dx$ equals :

A. $e^x \cos x + C$

B. $e^x \sec x + C$

C. $e^x \sin x + C$

D. $e^x \tan x + C$

Answer: B

Watch Video Solution

24. $\int \frac{dx}{x(x^2+1)}$ 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. $\frac{1}{2}\log|x| + \log(x^2+1) + C$

Answer: A

Watch Video Solution

25. $\int e^x(\cos x - \sin x)dx =$

A. $e^x \cos x + c$

B. $e^x \sin x + c$

C. $-e^x \cos x + c$

D. $-e^x \sin x + c$

Answer: A

Watch Video Solution

26. Evaluate

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

A. $\tan x + \cot + c$

B. $(\tan x + \cot x)^2 + c$

C. $\tan x - \cot + c$

D. $(\tan x - \cot)^2 + c$

Answer: C

Watch Video Solution

27. If $\int \frac{4e^x + 6e^{-x}}{9e^x - 4e^{-x}} dx = Ax = + B\log_e\left(9e^{2x} - 4\right) + C$, then

A. $a = \frac{1}{8}, b = \frac{7}{8}$

B. $a = \frac{1}{8}, b = \frac{7}{8}$

C. $a = -\frac{1}{8}, b - \frac{7}{8}$

D. $a = \frac{1}{8}, b = -\frac{7}{8}$

Answer: C

Watch Video Solution

28. integrate $\int \frac{\cos 2x - \cos 2\alpha}{\cos x - \cos \alpha} dx$

A. $2(\sin x + x \cos \theta) + c$

B. $2(\sin x - x \cos \theta) + c$

C. $2(\sin x + 2x \cos \theta) + c$

D. $2(\sin x - 2x \cos \theta) + c$

Answer: A

Watch Video Solution

29. Integrate the following functions :

$$\int \frac{1}{\sin(x-a)\sin(x-b)}dx$$

A. $\sin(b-a)\log\left|\frac{\sin(x-b)}{\sin(x-a)}\right|+c$

B. $\cos ec(b-a)\log\left|\frac{\sin(x-a)}{\sin(x-b)}\right|+c$

C. $\cos ec(b-a)\log\left|\frac{\sin(x-b)}{\sin(x-a)}\right|+c$

D. $\sin(b-a)\log\left|\frac{\sin(x-a)}{\sin(x-b)}\right|+c$

Answer: C

Watch Video Solution

30. $\int \tan^{-1}\sqrt{x}dx$ is equal to

A. $(x+1)\tan^{-1}\sqrt{x}-\sqrt{x}+c$

B. $x\tan^{-1}\sqrt{x}-\sqrt{x}+c$

C. $\sqrt{x} - x\tan^{-1}\sqrt{x} + c$

D. $\sqrt{x} - (x+1)\tan^{-1}\sqrt{x} + c$

Answer: A

Watch Video Solution

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

Answer: C

Watch Video Solution

32. $\int \frac{x^9}{(4x^2+1)^6} dx$ 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. $\frac{1}{10}\left(\frac{1}{x^2}+4\right)^{-5}+c$

Answer: D

Watch Video Solution

33. If

$$\int \frac{dx}{(x+2)(x^2+1)} = a\log|1+x^2| + b\tan^{-1}x + \frac{1}{5}\log|x+2| + c$$

, then

A. $a = -\frac{1}{10}, b = -\frac{2}{5}$

B. $a = \frac{1}{10}, b = -\frac{2}{5}$

C. $a = -\frac{1}{10}, b = \frac{2}{5}$

D. $a = \frac{1}{10}, b = \frac{2}{5}$

Answer: C

Watch Video Solution

34. $\int \frac{x^3}{x+1}$ is equal to

A. $x + \frac{x^2}{2} + \frac{x^3}{3} - \log|1-x| + c$

B. $x + \frac{x^2}{2} + \frac{x^3}{3} - \log|1-x| + c$

C. $x - \frac{x^2}{2} - \frac{x^3}{3} - \log|1+x| + c$

D. $x - \frac{x^2}{2} + \frac{x^3}{3} - \log|1+x| + c$

Answer: D

Watch Video Solution

35. $\int \frac{x + \sin x}{1 + \cos x} dx$ is equal to

A. $\log|1 + \cos x| + c$

B. $\log|x + \sin x| + c$

C. $x - \tan\frac{x}{2} + c$

D. $x \cdot \tan\frac{x}{2} + c$

Answer: D

Watch Video Solution

36. If $\int \frac{x^3 dx}{\sqrt{1 + x^2}} = a\left(1 + x^2\right)^{\frac{3}{2}} + b\sqrt{1 + x^2} + c$, then

A. $a = \frac{1}{3}, b = 1$

B. $a = -\frac{1}{3}, b = 1$

C. $a = -\frac{1}{3}, b = -1$

D. $a = \frac{1}{3}, b = -1$

Answer: D

Watch Video Solution

Questions Carrying 1 Mark Type Ii

1. Choose the correct answer : The anti derivative of $\left(\sqrt{x} + \left(\frac{1}{\sqrt{x}}\right)\right)$ equals.

Watch Video Solution

2. $\int(\sin x + \cos x)dx$ is equal to :

Watch Video Solution

3. Evaluate

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

Watch Video Solution

4. $\int \frac{1}{2x+5}dx$ is equal to :

Watch Video Solution

5. $\int \frac{1}{2x+7}dx$ is equal to :

Watch Video Solution

6. $\int \frac{8x^7 + 8^x \log_e 8}{x^8 + 8^x}$

Watch Video Solution

7. $\int \sec^4 x \tan x \, dx$ equals :

Watch Video Solution

8. $\int \left(\frac{\cos 2x}{(\sin x + \cos x)^2} \right) dx$ is equal to:

Watch Video Solution

9. $\int \frac{dx}{x\left(\sqrt{x^2 - 1}\right)}$ is equal to :

Watch Video Solution

10. $\int \frac{dx}{x^2 + 2x + 2}$ equals :

Watch Video Solution

11. Evaluate $\int e^x \left(\frac{1}{x} - \frac{1}{x^2} \right) dx.$

Watch Video Solution

12. $\int e^x (\tan x + \log \sec x) dx$ is equal to :

Watch Video Solution

13. $\int e^x (\sin x - \cos x)$ dx is equal to :

Watch Video Solution

14. $\int(\sin x + \cos x)dx$ is equal to :

Watch Video Solution

15. $\int e^x\left(\sqrt{x} + \frac{1}{2\sqrt{x}}\right)dx$ is equal to :

Watch Video Solution

16. $\int \frac{xdx}{(x-1)(x-2)}$ equals :

Watch Video Solution

17. $\int \frac{\sin^6 x}{\cos^8 x}dx = \ldots\ldots\ldots .$

Watch Video Solution

18. $\int \frac{x+3}{(x+4)^2} e^x dx = \ldots\ldots\ldots\ldots .$

Watch Video Solution

19. $\int \frac{\sin x}{3+4\cos^2 x} dx = \ldots\ldots\ldots\ldots .$

Watch Video Solution

Questions Carrying 1 Mark Type Iii

1. $\frac{d}{dx}\int f(x)dx = f'(x).$

Watch Video Solution

2. The processes of differentation and integration are inverse of each other.

Watch Video Solution

3. Two indefinite integrals with the same derivative are not equivalent.

Watch Video Solution

4. check whether is correct $\int[f(x)+g(x)]dx=\int f(x)dx+\int g(x)dx.$

Watch Video Solution

5. Prove that for any positive integer k, $\frac{\sin 2kx}{\sin x} = 2[\cos x + \cos 3x + \ + \cos(2k-1)x]$.

Hence, prove that $\int_0^{\frac{\pi}{2}} \sin 2xk \cot x dx = \frac{\pi}{2}$.

Watch Video Solution

6. All functions are integrable.

Watch Video Solution

7. The integral of a function, when it exists, is not unique.

Watch Video Solution

8. Integral at a point is not defined.

Watch Video Solution

9. Integration is a process involving limits.

Watch Video Solution

10. The integral is used is calculating the distance traversed when the velocity at time t is known.

Watch Video Solution

11. When a polynomial P is integrated, the result is a polynomial whose degree is 1 more than that of P.

Watch Video Solution

12. $prove: \int \frac{\sin^2 x}{1+\cos x} dx = x + \sin x + c.$

Watch Video Solution

13. All functions are not integrable.

Watch Video Solution

14. The integral of a function, when it exists, is not unique.

Watch Video Solution

15. Integral at a point is not defined.

Watch Video Solution

16. Integration is a process involving limits.

Watch Video Solution

17. The processes of differentation and integration are inverse of each other.

Watch Video Solution

18. $prove: \int \frac{\cos 2x + 2\sin^2 x}{\cos^2 x} dx = \tan x + c.$

Watch Video Solution

19. $\int \frac{x+3}{x^2+4x+3} dx = \log|x+1| + c.$

Watch Video Solution

20. $prove: \int \frac{1}{(\log x)x} dx = \log(\log x) + c.$

Watch Video Solution

21. $\int \frac{\sin(x-\alpha)}{\sin x} dx = x\cos\alpha - \sin\alpha.\log|\sin x| + c.$

Watch Video Solution

22. $prove: \int xe^x dx = (x-1)e^x + c.$

Watch Video Solution

Questions Carrying 2 Marks

1. Evaluate the following integrals : $\int(1-x)\sqrt{x}dx$

Watch Video Solution

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

Watch Video Solution

3. Integrate : $\int\frac{\cos 2x-\cos 2\alpha}{\cos x-\cos\alpha}dx.$

Watch Video Solution

4. Evaluate the following integrals : $\int\frac{\sin^6 x+\cos^6 x}{\sin^2 x\cos^2 x}dx$

Watch Video Solution

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

Watch Video Solution

6. Find $\int \sin x \sin 2x \sin 3x dx.$

Watch Video Solution

7. Evaluate the following integrals : $\int \left(\frac{x+\cos 6x}{3x^2+\sin 6x} \right) dx$

Watch Video Solution

8. Evaluate : $\int \frac{\sin x - x \cos x}{x(x+\sin x)} dx.$

Watch Video Solution

9. Find $\int \frac{x}{1+x\tan x}dx$

Watch Video Solution

10. Find : $\int \frac{1}{x^3(x^5+1)^{\frac{3}{5}}}dx$

Watch Video Solution

11. Find : $\int \frac{\sin^6 x}{\cos^8 x}dx.$

Watch Video Solution

12. Evaluate the following integrals:

$\int \frac{5x-2}{1+2x+3x^2}dx$

Watch Video Solution

Watch Video Solution

13. Evaluate $\int \frac{\cos x}{\sqrt{\sin^2 x - 2\sin x - 3}} dx.$

Watch Video Solution

14. Evaluate the following integrals:

$$\int \frac{1 - \cos x}{\cos x(1 + \cos x)} dx$$

Watch Video Solution

15. Integrate the following functions : $\int \frac{\sin(x - \alpha)}{\sin(x + \alpha)} dx$

Watch Video Solution

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

Watch Video Solution

17. Evaluate $\int \frac{dx}{\sqrt{5 - 4x - 2x^2}}$

Watch Video Solution

18. Evaluae $\int \frac{e^x}{\sqrt{5 - 4e^x - e^{2x}}} dx$

Watch Video Solution

19. Evaluate the following integrals:

$\int \frac{2x + 5}{\sqrt{7 - 6x - x^2}} dx$

Watch Video Solution

Watch Video Solution

20. Evalualte : $\int\left(\sqrt{\tan x}+\sqrt{\cot x}\right)dx.$

Watch Video Solution

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

Watch Video Solution

22. Find $\int\frac{x^2-3x+1}{\sqrt{1-x^2}}dx.$

Watch Video Solution

23. Evaluate $\int x\sin^{-1}xdx.$

Watch Video Solution

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

Watch Video Solution

25. Evaluate $\int \frac{x^2 dx}{(x \sin x + \cos x)^2}$.

Watch Video Solution

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

Watch Video Solution

27. Evaluate $\int\left(\frac{\sin^{-1}\sqrt{x}-\cos^{-1}\sqrt{x}}{\sin^{-1}\sqrt{x}+\cos^{-1}\sqrt{x}}\right)dx.$

Watch Video Solution

28. Find : $\int e^{2x}\sin(3x+1)dx.$

Watch Video Solution

29. Evaluate : $\int\frac{(x-4)e^{x}}{(x-2)^{3}}dx.$

Watch Video Solution

30. Evaluate : $\int e^{2x}\left(\frac{1-\sin 2x}{1-\cos 2x}\right)dx.$

Watch Video Solution

31. Evaluate : $\int e^x \left(\frac{\sin 4x - 4}{1 - \cos 4x} \right) dx.$

Watch Video Solution

32. Evaluate : $\int \left[\log(\log x) + \frac{1}{(\log x)^2} \right] dx.$

Watch Video Solution

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

Watch Video Solution

34. Evaluate the following integrals: $\int \frac{1}{x(x^3 + 8)} dx$

Watch Video Solution

Watch Video Solution

Questions Carrying 4 Marks

1. Find : $\int \frac{x^3 dx}{x^4 + 3x^2 + 2} dx.$

Watch Video Solution

2. Evaluate $\int \frac{dx}{\sin x - \sin 2x}$

Watch Video Solution

3. Find : $\int \frac{dx}{\sin x + \sin 2x}.$

Watch Video Solution

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

Watch Video Solution

5. Evalute : $\int \frac{x^2}{(x^2+4)(x^2+9)} dx$

Watch Video Solution

6. Evaluate $\int \frac{x^2}{x^4+x^2-2} dx$

Watch Video Solution

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

Watch Video Solution

8. Evaluate the following integrals:

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

Watch Video Solution

9. Evaluate the following integrals: $\int \frac{3x+5}{x^3-x^2-x+1}dx$

Watch Video Solution

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

Watch Video Solution

11. Evaluate the following integrals:

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

Watch Video Solution

12. Find : $\int \frac{x^3 - 1}{x^3 + x} dx.$

Watch Video Solution

13. Evaluate the following integrals:

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

Watch Video Solution

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

Watch Video Solution

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

Watch Video Solution