



# MATHS

## BOOKS - MBD MATHS (ODIA ENGLISH)

### INTEGRATION

#### Question Bank

1. Integrate the following :  $\int 2dx$



Watch Video Solution

2. Integrate the following :  $\int 3x^2 dx$



[Watch Video Solution](#)

3. Integrate the following :  $\int 4x^3 dx$



[Watch Video Solution](#)

4. Integrate the following :  $\int x^5 dx$



[Watch Video Solution](#)

5. Integrate the following :  $\int x^{31} dx$

 [Watch Video Solution](#)

6. Integrate the following :

$$\int \left( 2\sqrt{x} + \frac{3}{\sqrt{x}} \right) dx$$

 [Watch Video Solution](#)

7. Integrate the following :  $\int \frac{1}{x\sqrt{x}} dx$

 [Watch Video Solution](#)

8. Integrate the following :  $\int \left( x^{\frac{4}{7}} + \frac{1}{x^{\frac{1}{3}}} \right) dx$



[Watch Video Solution](#)

9. Integrate the following :  $\int \left( \frac{4}{x} \right) dx$



[Watch Video Solution](#)

10. Integrate the following :  $\int \left( \frac{3}{x^2} + \frac{1}{x^{12}} \right) dx$



[Watch Video Solution](#)

11. Integrate the following :  $\int (x^2 + \sqrt{x})^2 dx$



[View Text Solution](#)

12. Integrate the following :

$$\int (x + 3)(2 - x) dx$$



[Watch Video Solution](#)

13. Integrate the following :  $\int \frac{(\sqrt{x} + 2)^2}{x^4} dx$

 [View Text Solution](#)

14. Integrate the following :

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

 [View Text Solution](#)

15.  $\int \cos x dx$

 [View Text Solution](#)

16.  $\int \frac{dx}{\cos^2 x}$



[View Text Solution](#)

17.  $\int \frac{dx}{1 - \cos^2 x}$



[View Text Solution](#)

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



[View Text Solution](#)

$$19. \int \frac{2 \cos x}{1 - \cos^2 x} dx$$



[View Text Solution](#)

$$20. \int \frac{1 - \sin^3 x}{\sin^2 x} dx$$



[View Text Solution](#)

$$21. \int \frac{\sin^2 x}{1 + \cos x} dx$$





 [View Text Solution](#)

$$22. \int \frac{\cos 2x}{\cos x + \sin x} dx$$

 [View Text Solution](#)

$$23. \int \frac{\cos^4 x - \sin^4 x}{\cos x - \sin x} dx$$

 [View Text Solution](#)

$$24. \int \frac{\cos 2x}{\sin^2 x \times \cos^2 x} dx$$



 [View Text Solution](#)

$$25. \int \frac{a^2 \sin^2 x + b^2 \cos^2 x}{\sin^2 x} dx$$

 [View Text Solution](#)

$$26. \int (\tan x + \cot x)^2 dx$$

 [View Text Solution](#)

$$27. \int \frac{1 - \cos 2x}{1 + \cos x} dx$$





[View Text Solution](#)

$$28. \int (\sec^2 x \cdot \csc^2 x) dx$$



[View Text Solution](#)

$$29. \int \frac{a \sin^3 x + b \cos^3 x}{\sin^2 x \cos^2 x} dx$$



[View Text Solution](#)

$$30. \int \sqrt{1 + \sin 2x} dx$$



[View Text Solution](#)

31.  $\int \sqrt{1 - \cos 2x} dx$



[View Text Solution](#)

32.  $\int \sqrt{1 + \cos 2x} dx$



[View Text Solution](#)

33.  $\int \frac{\cos 3x \cos 2x + \sin 3x \sin 2x}{1 - \cos^2} dx$



[View Text Solution](#)

$$34. \int (e^x + 2) dx$$



[View Text Solution](#)

$$35. \int 3^x dx$$



[Watch Video Solution](#)

$$36. \int a^{x+2} dx$$

 [View Text Solution](#)

$$37. \int a^{3x} dx$$

 [Watch Video Solution](#)

$$38. \int \frac{e^{2x} + 1}{e^x} dx$$

 [Watch Video Solution](#)

$$39. \int \frac{5}{\sqrt{1-x^2}} + \frac{7}{1+x^2} dx$$



[Watch Video Solution](#)

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



[View Text Solution](#)

41.  $\int \left( \sqrt{1 - x^2} + \frac{x^2}{\sqrt{1 - x^2}} \right) dx$



[View Text Solution](#)

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



[Watch Video Solution](#)

43. Find the unique antiderivative  $F(x)$  of  $f(x) = 2x^2 + 1$ , where  $F(0) = -2$ .



[View Text Solution](#)

44. Integrate the following  $\int \sin 3x dx$



[Watch Video Solution](#)



45. Integrate the following  $\int \cos ax dx$



[View Text Solution](#)

46. Integrate the following  $\int \cos(2 - 7x) dx$



[View Text Solution](#)

47. Integrate the following  $\int \sin\left(\frac{x}{2}\right) dx$



[View Text Solution](#)

48. Integrate the following  $\int \sec^2(4x) dx$



Watch Video Solution

49. Integrate the following  $\int \cos e^{c^2} \left( \frac{x}{2} \right) dx$



Watch Video Solution

50. Integrate the following

$$\int \sec(x + 2) \tan(x + 2) dx$$



Watch Video Solution

51. Integrate the following

$$\int \sec\left(x + \frac{\pi}{4}\right) \cot\left(x + \frac{\pi}{4}\right) dx$$
$$\left(x = \frac{\pi}{4}\right)$$



Watch Video Solution

52. Integrate the following  $\int x^2 \cos x^3 dx$



Watch Video Solution

53. Integrate the following  $\int e^x \sec e^x \tan e^x dx$

$$e^x = z$$



Watch Video Solution

54. Integrate the following  $\int \frac{\sec^2 \sqrt{x}}{\sqrt{x}} dx$



Watch Video Solution

55. Integrate the following  $\int \sin x \cos x dx$

$$(\sin x = v)$$



Watch Video Solution

56. Integrate the following  $\int \tan^3 x \sec^2 x dx$

( $\tan x = v$ )



Watch Video Solution

57. Integrate the following  $\int \frac{\cos e^{c^2 x}}{1 + \cot x} dx$



Watch Video Solution

58. Integrate the following  $\int \frac{\sin x}{\cos^3 x} dx$



[Watch Video Solution](#)

59. Integrate the following  $\int \frac{\cos x}{\sin^5 x} dx$



[Watch Video Solution](#)

60. Integrate the following  $\int \frac{\cos e^{c^2}(\ln x)}{x} dx$



[Watch Video Solution](#)

61. Integrate the following

$$\int \sqrt{1 - \sin x} \cos x dx$$



Watch Video Solution

62. Integrate the following

$$\int x \left( \sqrt{x^2 + 3} dx (x^2 + 3 = v) \right)$$



Watch Video Solution

63. Integrate the following  $\int \frac{7}{2 - 3x} dx$



Watch Video Solution

64. Integrate the following  $\int \frac{x}{\sqrt{x^2 - a^2}} dx$



Watch Video Solution

65. Integrate the following

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



Watch Video Solution



66. Integrate the following

$$\int (x^4 - 3x^2 + 1)^4 (2x^3 - 3x) dx$$



Watch Video Solution

67. integrate the following  $\int e^{3x} dx$



Watch Video Solution

68. integrate the following  $\int e^{2x+7} dx$



Watch Video Solution

69. Integrate the following  $\int e^{\frac{x}{3}} dx$



[Watch Video Solution](#)

70. Integrate the following  $\int e^{x^3} x^2 dx$



[Watch Video Solution](#)

71. Integrate the following  $\int a^{2x} dx$



[Watch Video Solution](#)

72. Integrate the following  $\int 2a^{x^2} x dx$



[Watch Video Solution](#)

73. Integrate the following  $\int e^{2 \tan x} \sec^2 x dx$



[Watch Video Solution](#)

74. Integrate the following  $\int \frac{e^x}{(e^x - 2)^2} dx$



[Watch Video Solution](#)

75. Integrate the following  $\int e^{\cos^2 x} \sin 2x dx$



[Watch Video Solution](#)

76. Integrate the following  $\int \frac{\sin^{-1} x}{\sqrt{1-x^2}} dx$



[Watch Video Solution](#)

77. Integrate the following  $\int \frac{dx}{\sqrt{1-(x-1)^2}}$





[Watch Video Solution](#)

78. Integrate the following  $\int \frac{(\sec^{-1} x)^2 dx}{x\sqrt{x^2 - 1}}$



[Watch Video Solution](#)

79. Integrate the following  $\int \frac{dx}{x(1 + (\ln x)^2)}$



[Watch Video Solution](#)

80. Integrate the following  $\int \frac{dx}{x^2 + 2x + 2}$



Watch Video Solution

81. Integrate the following  $\int \frac{dx}{(x+1)^2} + 1$



Watch Video Solution

82. integrate the following  $\int \tan 3x dx$



Watch Video Solution

83. Integrate the following  $\int \cos\left(\frac{x}{3}\right) dx$



Watch Video Solution

84. Integrate the following  $\int \sec(2x + 1) dx$



Watch Video Solution

85. Integrate the following  $\int \cos e^{7x} dx$



Watch Video Solution

86. Integrate the following  $\int 2x \cot(x^2 + 3) dx$



Watch Video Solution

87. Integrate the following  $\int e^x \tan e^x dx$



Watch Video Solution

88. Integrate the following  $\int \sec(2x - 3)^2 dx$



Watch Video Solution

89.  $\int \frac{e^x + e^{-x}}{e^x - e^{-x}} dx$





Watch Video Solution

90. Integrate the following  $\int 3^x e^{2x} dx$



Watch Video Solution

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



Watch Video Solution

92.  $\int \frac{\sin x}{\sin(x + \alpha)} dx$



[Watch Video Solution](#)

93. 
$$\int \frac{\sin x}{\cos(x - \alpha)} dx$$



[Watch Video Solution](#)

94. 
$$\int \frac{\tan x + \tan \alpha}{\tan x - \tan \alpha} dx$$



[Watch Video Solution](#)

**95.** Intergrate the following:

$$\int \sin 4x \cos 3x dx$$



**Watch Video Solution**

**96.** Intergrate the following:

$$\int \cos 5x \cos 2x dx$$



**Watch Video Solution**

**97.** Intergrate the following:

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



**Watch Video Solution**

**98.** Intergrate the following:

$$\int \sin 6x \sin 3x dx$$



**Watch Video Solution**

**99.** Intergrate the following:

$$\int \cos 4x \cos 5x \sin 2x dx$$



**Watch Video Solution**

**100.** Intergrate the following:

$$\int \sin\left(\frac{3x}{4}\right) \cos\left(\frac{x}{2}\right) dx$$



**Watch Video Solution**

**101.** Intergrate the following:

$$\int \cos 2x \cos \left( \frac{x}{2} \right) dx$$



**Watch Video Solution**

**102.** Intergrate the following:

$$\int \sin \left( \frac{x}{2} \right) \sin \left( \frac{x}{3} \right) \cos \left( \frac{x}{4} \right) dx$$



**Watch Video Solution**

**103.**  $\int \cos^2 x dx$



Watch Video Solution

$$104. \int \sin^3 x dx$$



Watch Video Solution

$$105. \int \cos^4 x dx$$



Watch Video Solution

$$106. \int \sin^5 x dx$$



Watch Video Solution

$$107. \int \cos^7 x dx$$



Watch Video Solution

$$108. \int \sin^6 x dx$$



Watch Video Solution

$$109. \int \cos^5 x \sin^3 x dx$$





Watch Video Solution

$$110. \int \sin^{20} x \cos^3 x dx$$



Watch Video Solution

$$111. \int \frac{\sin^3 x}{\cos^6 x} dx$$



Watch Video Solution

$$112. \int \cot^3 x \operatorname{cosec}^{16} x dx$$



Watch Video Solution

$$113. \int \sec^{30} x \tan x dx$$



Watch Video Solution

$$114. \int \sin^3 x \sec^{14} x dx$$



Watch Video Solution

$$115. \int \sin^4 x \cos^4 x dx$$



Watch Video Solution

116.  $\int \sin 3x \cos^2 x dx$



Watch Video Solution

117.  $\int \cos 2x \sin^3 x dx$



Watch Video Solution

118.  $\int \sin^4 x \cos^2 x dx$



Watch Video Solution

$$119. \int \tan^5 \theta \sec^4 \theta d\theta$$



Watch Video Solution

$$120. \int \cot^4 \theta \operatorname{cosec}^4 \theta d\theta$$



Watch Video Solution

$$121. \int \sec^{11} \theta \tan \theta d\theta$$



Watch Video Solution

$$122. \int \cot \theta \cos e c^7 \theta d\theta$$



Watch Video Solution

$$123. \int \tan^3 \theta d\theta$$



Watch Video Solution

$$124. \int \cot^4 \theta d\theta$$



Watch Video Solution

$$125. \int \tan^5 \theta d\theta$$



Watch Video Solution

$$126. \int \cot^6 \theta d\theta$$



Watch Video Solution

$$127. \int \frac{\sin ax - \sin bx}{\cos ax - \cos bx} dx$$



Watch Video Solution

$$128. \int \frac{\cos px + \cos qx}{\sin px + \sin qx} dx$$



Watch Video Solution

$$129. \int \frac{\sin 4x - \sin 2x}{\cos x} dx$$



Watch Video Solution

$$130. \int \frac{\sin 2x}{a \cos^2 x + b \sin^2 x + c} dx$$



Watch Video Solution

131. Integrate the following  $\int \frac{dx}{\sqrt{11 - 4x^2}}$



Watch Video Solution

132. Integrate the following  $\int \left( \frac{e^{3x}}{\sqrt{4 - e^{6x}}} dx \right)$



Watch Video Solution



133. Integrate the following  $\int \frac{dx}{\sqrt{25 - (x)^2}}$



Watch Video Solution

134. Integrate the following  $\int \frac{\cos \theta}{\sqrt{4 - \sin^2 \theta}} d\theta$



Watch Video Solution

135. Integrate the following  $\int \frac{x^2}{\sqrt{36 - x^6}} dx$



Watch Video Solution

136. Integrate the following  $\int \frac{x + 3}{\sqrt{9 - x^2}} dx$



Watch Video Solution

137. integrate the following  $\int (dx)/(\sqrt{5-x^2-4x})$



Watch Video Solution

138. Integrate the following  $\int \frac{x + 3}{5 - x^2 - 4x}$



Watch Video Solution

139. Integrate the following  $\int \frac{dx}{3x^2 + 7}$



Watch Video Solution

140. Integrate the following  $\int \frac{e^{4x}}{e^{8x} + 4} dx$



Watch Video Solution

**141.** Integrate the following

$$\int \frac{dx}{x \{ (\ln x)^2 + 25 \}}$$



**Watch Video Solution**

**142.** Integrate the following  $\int \frac{\sec \theta \tan \theta}{\sec^2 \theta + 4} d\theta$



**Watch Video Solution**

**143.** Integrate the following

$$\int \frac{x^9}{x^{20} + 4} dx \quad (x^{10} = z)$$



Watch Video Solution

144. Integrate the following  $\int \frac{3x + 4}{x^2 + 4} dx$



Watch Video Solution

145. Integrate the following  $\int \frac{dx}{x^2 + 6x + 13}$



Watch Video Solution

146. Integrate the following  $\int \frac{x + 5}{x^2 + 6x + 13} dx$



Watch Video Solution

147. Integrate the following  $\int \frac{dx}{x(\sqrt{4x^2 - 9})}$



Watch Video Solution

148. Integrate the following  $\int \frac{dx}{\sqrt{e^{4x} - 5}}$



Watch Video Solution

149. Integrate the following

$$\int \frac{dx}{x \ln x \sqrt{(\ln x)^2 - 4}}$$



Watch Video Solution

150. Integrate the following

$$\int \frac{\sec \theta d\theta}{\sin \theta \sqrt{3 \tan^2 \theta - 1}}$$



Watch Video Solution

151. Integrate the following  $\int \frac{dx}{x\sqrt{x^{14} - b^2}}$

 [Watch Video Solution](#)

152. Integrate the following  $\int \frac{x^2 + 3}{x\sqrt{x^2 - 4}} dx$

 [Watch Video Solution](#)

153. integrate the following

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

 [Watch Video Solution](#)



**154.** Integrate the following

$$\int \frac{x^2 + 2x + 4}{(x + 1)\sqrt{x^2 + 2x - 3}}$$



**Watch Video Solution**

**155.** Integrate the following  $\int \frac{dx}{\sqrt{3x^2 + 4}}$



**Watch Video Solution**

156. Integrate the following

$$\int \left( 4 \frac{e^x}{\sqrt{3e^x + 4}} \right) dx$$



Watch Video Solution

157. Integrate the following  $\int \frac{dx}{x \sqrt{\ln x^2 + 8}}$



Watch Video Solution

158. Integrate the following

$$\int \frac{d\theta}{\sin^2 \theta \sqrt{\cot^2 \theta + 2}}$$



Watch Video Solution

159. Integrate the following  $\int \frac{x^2}{\sqrt{x^6 + a^6}} dx$



Watch Video Solution

160. integrate the following  $\int \frac{e^x \cos e^x}{\sqrt{\sin^2 e^x - 9}} dx$



 [Watch Video Solution](#)

**161.** Integrate the following

$$\int \left[ \frac{2x + 1}{\sqrt{x^2 + 10x + 29}} \right] dx$$

 [Watch Video Solution](#)

**162.** Integrate the following  $\int \frac{dx}{\sqrt{4x^2 - 6}}$

 [Watch Video Solution](#)

163. integrate the following  $\int \left( \frac{e^{5x}}{\sqrt{e^{10x} - 4}} dx \right)$



Watch Video Solution

164. Integrate the following  $\int \frac{dx}{x \sqrt{(\ln x)^2 + 4}}$



Watch Video Solution

165. integrate the following

$$\int \frac{\cos \theta d\theta}{\sin^2 \theta \sqrt{\cos e c^2 \theta - 4}}$$



Watch Video Solution

166. Integrate the following  $\int \frac{dx}{\sqrt{x}\sqrt{x-a^2}}$



Watch Video Solution

167. Integrate the following  $\int \frac{x-2}{\sqrt{3x^2-8}} dx$



Watch Video Solution

168. Integrate the following  $\int \frac{3x+4}{x\sqrt{2x^2-5}} dx$



Watch Video Solution

169. Integrate the following  $\int \frac{x^2 + 2x + 2}{x\sqrt{x^2 - 4}} dx$



Watch Video Solution

170. integrate the following  $\int \frac{dx}{\sqrt{x^2 + 8x}}$



Watch Video Solution

171. integrate the following  $\int \frac{x + 7}{\sqrt{x^2 + 8x}} dx$



Watch Video Solution

**172.** Evaluate the following:

$$\int (1 + x)e^x dx$$



Watch Video Solution

**173.** Evaluate the following:

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



Watch Video Solution



174. Evaluate the following:

$$\int x^2 e^{ax} dx$$



Watch Video Solution

175. Evaluate the following:

$$\int (3x + 2)^2 e^{2x} dx$$



Watch Video Solution

176.  $\int x \sin x dx$





Watch Video Solution

$$177. \int x^2 \cos x dx$$



Watch Video Solution

$$178. \int x^2 \sin ax dx$$



Watch Video Solution

$$179. \int x \cos^2 x dx$$





Watch Video Solution

180.  $\int x \sin^3 x dx$



Watch Video Solution

181.  $\int 2x \sin 2x \cos x dx$



Watch Video Solution

182.  $\int 2x \cos 3x \cos 2x dx$





Watch Video Solution

183.  $\int 2x^3 \cos x^2 dx$



Watch Video Solution

184.  $\int x \cos e c^2 x dx$



Watch Video Solution

185.  $\int x \tan^2 x dx$





Watch Video Solution

$$186. \int x \ln(1+x) dx$$



Watch Video Solution

$$187. \int x^7 \ln x dx$$



Watch Video Solution

$$188. \int (\ln x)^3 dx$$





[Watch Video Solution](#)

$$189. \int \ln(x^2 + 1) dx$$



[Watch Video Solution](#)

$$190. \int \frac{\ln x}{x^5} dx$$



[Watch Video Solution](#)

$$191. \int \ln(x^2 + x + 2) dx$$





Watch Video Solution

$$192. \int \ln(x + \sqrt{x^2 + a^2}) dx$$



Watch Video Solution

$$193. \int \ln(x + \sqrt{x^2 - a^2}) dx$$



Watch Video Solution

$$194. \int \sin^{-1} x dx$$





Watch Video Solution

195.  $\int x \sin^{-1} x dx$



Watch Video Solution

196.  $\int \cos^{-1} x dx$



Watch Video Solution

197.  $\int x \tan^{-1} x dx$







Watch Video Solution

198.  $\int x^2 \tan^{-1} x dx$



Watch Video Solution

199.  $\int \sec^{-1} x dx$



Watch Video Solution

200.  $\int x \cos ec^{-1} x dx$





Watch Video Solution

$$201. \int e^{3x} \cos 2x dx$$



Watch Video Solution

$$202. \int e^{2x} \sin x dx$$



Watch Video Solution

$$203. \int e^x \cos^2 x dx$$





Watch Video Solution

$$204. \int x e^{x^2} \sin x^2 dx$$



Watch Video Solution

$$205. \int e^{ax} \sin(bx + c) dx$$



Watch Video Solution

$$206. \int (2x^2 + 1) e^{x^2} dx$$





[Watch Video Solution](#)

$$207. \int \sqrt{9 - x^2} dx$$



[Watch Video Solution](#)

$$208. \int \sqrt{5 - 4x^2} dx$$



[Watch Video Solution](#)

$$209. \int \sqrt{1 - x^2 - 2x} dx \quad (x+1=z)$$





Watch Video Solution

$$210. \int e^z \sqrt{4 - e^{2z}} dz$$



Watch Video Solution

$$211. \int \cos \theta \sqrt{5 - \sin^2 \theta} d\theta$$



Watch Video Solution

$$212. \int \sqrt{x^2 + 4} dx$$

 [Watch Video Solution](#)

213.  $\int \sqrt{7x^2 + 2} dx$

 [Watch Video Solution](#)

214.  $\int \sqrt{4x^2 + 12x + 13} dx$  ( $2x+3=z$ )

 [Watch Video Solution](#)

215.  $\int e^{2z} \sqrt{e^{4z} + 6} dz$





Watch Video Solution

$$216. \int \sec^2 \theta \sqrt{\sec^2 \theta + 3} d\theta$$



Watch Video Solution

$$217. \int (2x^2 + 1)e^{x^2} dx$$



Watch Video Solution

$$218. \int \sqrt{x^2 - 8} dx$$



Watch Video Solution

$$219. \int \sqrt{3x^2 - 2} dx$$



Watch Video Solution

$$220. \int \sqrt{x^2 - 4x + 2} dx$$



Watch Video Solution

$$221. \int a^z \sqrt{a^{2z} - 4} dz$$





Watch Video Solution

$$222. \int \sec \theta \tan \theta \sqrt{\tan^2 \theta - 3} d\theta$$



Watch Video Solution

$$223. \int e^x (\tan x + \ln \sec x) dx$$



Watch Video Solution

$$224. \int e^x (\cot x + \ln \sin x) dx$$



Watch Video Solution

$$225. \int \frac{e^x}{x} (1 + x \ln x) dx$$



Watch Video Solution

$$226. \int \frac{x e^x}{1 + x^2} dx$$



Watch Video Solution

$$227. \int \left[ \frac{1}{\ln x} - \frac{1}{(\ln x)^2} \right] dx$$



**Watch Video Solution**

$$228. \int \sin(\ln x) dx$$



**Watch Video Solution**

$$229. \int \sin x \ln(\cos ex - \cot x) dx$$



**Watch Video Solution**

**230.** Evaluate the following integrals.

$$\int \frac{4x - 9}{x^2 - 5x + 6} dx$$



**Watch Video Solution**

**231.** Evaluate the following integrals

$$\int \frac{3x}{(x + 4)(x + 2)} dx$$



**Watch Video Solution**

**232.** Evaluate the following integrals

$$\int \frac{5x - 12}{(2x - 3)(x - 6)} dx$$



**Watch Video Solution**

**233.** Evaluate the following integrals

$$\int \frac{20x + 3}{6x^2 - x - 2} dx$$



**Watch Video Solution**

**234.** Evaluate the following integrals

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



**Watch Video Solution**

**235.** Evaluate the following integrals

$$\int \frac{12x^4 - 2x^3 - 4x^2 + x - 3}{6x^2 - x - 2} dx$$



**Watch Video Solution**

**236.** Evaluate the following integrals

$$\int \frac{2x + 9}{(x + 3)^2} dx$$



**Watch Video Solution**

**237.** Evaluate the following integrals

$$\int (5x^2 + 4x + 4) \frac{(x + 2)^2}{x + 2} dx$$



**Watch Video Solution**

**238.** Evaluate the following integrals

$$\int \frac{x^2 + 7x + 4}{x^3 + x^2 - x - 1} dx$$



**Watch Video Solution**

**239.** Evaluate the following integrals

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



**Watch Video Solution**



**240.** Evaluate the following integrals

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



**Watch Video Solution**

**241.** Evaluate the following integrals

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



**Watch Video Solution**

**242.** Evaluate the following integrals

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



**Watch Video Solution**

**243.** Evaluate the following integrals

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



**Watch Video Solution**

**244.** Evaluate the following integrals  $\int \frac{dx}{x^2 - 5}$



[Watch Video Solution](#)

245. Evaluate the following integrals

$$\int \frac{dx}{2x^2 + 8x + 7}$$



[Watch Video Solution](#)

246. Evaluate the following integrals

$$\int \frac{x + 3}{2x^2 + 8x + 7} dx$$



[Watch Video Solution](#)

247. Evaluate the following integrals

$$\int \frac{4x^2 + 20x + 25}{2x^2 + 8x + 7} dx$$



[Watch Video Solution](#)

248. Evaluate the following integrals

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



[Watch Video Solution](#)

249. Evaluate the following integrals

$$\int \frac{\tan^2 \theta + 1}{\tan^2 \theta - 1} d\theta$$



Watch Video Solution

250. Evaluate the following integrals  $\int \frac{dx}{3 - x^2}$



Watch Video Solution

251. Evaluate the following integrals

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



[Watch Video Solution](#)

252. Evaluate the following integrals

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



[Watch Video Solution](#)

253. Evaluate the following integrals

$$\int \frac{\cos \theta}{3 - \sin^2 \theta} d\theta$$



[Watch Video Solution](#)

254. Evaluate the following integrals

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



[Watch Video Solution](#)

255. Evaluate the following integrals

$$\int \frac{x^3 dx}{x^4 + 3x^2 + 2}$$



[Watch Video Solution](#)

256. Evaluate the following integrals

$$\int \frac{dx}{\sin x (3 + 2 \cos x)} \text{ put } \cos x = z$$



[Watch Video Solution](#)

257.  $\int \frac{\sqrt{2x + 3}}{x} dx$



[Watch Video Solution](#)

258.  $\int \frac{\sqrt{x^2 - 7}}{x} dx$



[Watch Video Solution](#)



$$259. \int \frac{\sqrt{x}}{x + 2} dx$$



Watch Video Solution

$$260. \int x(3x + 2)^{\frac{1}{3}} dx$$



Watch Video Solution

$$261. \int \frac{x + 2}{(2x - 1)^{\frac{1}{3}}} dx$$





Watch Video Solution

$$262. \int (x + 2)(x + 1)^{\frac{1}{4}} dx$$



Watch Video Solution

$$263. \int \frac{x - 1}{(x + 2)^{\frac{3}{4}}} dx$$



Watch Video Solution

$$264. \int \frac{dx}{\sqrt{x} - \sqrt[3]{x}} \quad (x = t^6)$$



Watch Video Solution

$$265. \int \frac{3x + 4}{\sqrt{2x - 3}} dx$$



Watch Video Solution

$$266. \int (7x + 4)\sqrt{3x + 2} dx$$



Watch Video Solution

$$267. \int (3x + 1)(x - 2)^{\frac{9}{2}} dx$$



Watch Video Solution

$$268. \int \frac{2x + 5}{(x + 2)^{\frac{7}{2}}} dx$$



Watch Video Solution

$$269. \int \frac{x^2 + 2x + 1}{\sqrt{x + 4}} dx$$



Watch Video Solution

$$270. \int (x^2 + 2x + 7) \sqrt{x + 1} dx$$



Watch Video Solution

$$271. \int \frac{dx}{\sqrt{4x^2 - 4x + 5}}$$



Watch Video Solution

$$272. \int \sqrt{4x^2 - 4x + 5} dx$$



Watch Video Solution

$$273. \int \frac{dx}{\sqrt{x^2 - 6x + 5}}$$



**Watch Video Solution**

$$274. \int \sqrt{x^2 - 6x + 5} dx$$



**Watch Video Solution**

$$275. \int \frac{dx}{\sqrt{1 + 2x - x^2}}$$



**Watch Video Solution**

$$276. \int \sqrt{1 + 2x - x^2} dx$$



Watch Video Solution

$$277. \int \frac{dx}{(1+x)\sqrt{1-x^2}} \left(1+x = \frac{1}{t}\right)$$



Watch Video Solution

$$278. \int \frac{dx}{(2-x)\sqrt{5-4x+x^2}}$$



Watch Video Solution

$$279. \int \frac{dx}{(2x + 5)\sqrt{x + 2}}$$



Watch Video Solution

$$280. \int \frac{1 + x^2}{x\sqrt{x^4 + 1}} dx$$



Watch Video Solution

$$281. \int \frac{x}{(a^2 - x^2)(x^2 - b^2)} dx$$



Watch Video Solution



**282.** Evaluate the following integrals

$$\int \frac{dx}{4 + 5 \cos x}$$



**Watch Video Solution**

**283.** Evaluate the following integrals

$$\int \frac{dx}{3 + \cos x}$$



**Watch Video Solution**

**284.** Evaluate the following integrals

$$\int \frac{dx}{3 + \sin x}$$



**Watch Video Solution**

**285.** Evaluate the following integrals

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



**Watch Video Solution**

286. Evaluate the following integrals

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



[Watch Video Solution](#)

287. Evaluate the following integrals

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



[Watch Video Solution](#)

**288.** Evaluate the following integrals

$$\int \frac{3 \sin x + 28 \cos x}{5 \sin x + 6 \cos x} dx$$



**Watch Video Solution**

**289.** Evaluate the following integrals

$$\int \frac{12 \sin x - 2 \cos x + 3}{\sin x + \cos x} dx$$



**Watch Video Solution**

**290.** Evaluate the following integrals

$$\int \frac{5 \sin x}{3 - 2 \sin x} dx$$



**Watch Video Solution**

**291.** Evaluate the following

integrals  $\int (2 \cos x + 7) / (4 - \sin x) dx$



**Watch Video Solution**

**292.** Evaluate the following integrals

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



**Watch Video Solution**

**293.** Evaluate the following integrals

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



**Watch Video Solution**

294. Evaluate the following integrals

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



[Watch Video Solution](#)

295. Evaluate the following integrals

$$\int \frac{dx}{\cos x - \cos 3x}$$



[Watch Video Solution](#)

296. Evaluate the following integrals

$$\int \frac{d\theta}{4 + 3 \sin^2 \theta}$$



[Watch Video Solution](#)

297. Evaluate the following integrals

$$\int \frac{d\theta}{2 - 3 \cos^2 \theta}$$



[Watch Video Solution](#)



298. Evaluate the following integrals

$$\int \frac{d\theta}{4 \cos^2 \theta + 9 \sin^2 \theta}$$



[Watch Video Solution](#)

299. Evaluate the following integrals

$$\int \frac{d\theta}{2 + 3 \cos^2 \theta - 4 \sin^2 \theta}$$



[Watch Video Solution](#)

**300.** Evaluate the following integrals

$$\int \frac{\sin 3x}{\cos 7x \cos 4x} dx$$



**Watch Video Solution**

**301.** Evaluate the following integrals

$$\int \frac{\cos 2x}{\sin 7x \cos 5x} dx$$



**Watch Video Solution**

**302.** Evaluate the following integrals

$$\int \frac{dx}{\cos x(5 + 3 \cos x)}$$



**Watch Video Solution**

**303.** Evaluate the following integrals

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



**Watch Video Solution**

**304.**  $I = \int_1^3 5x^2 dx$



**Watch Video Solution**

$$305. I = \int_{-1}^1 e^x dx$$



**Watch Video Solution**

$$306. I = \int_0^6 x dx$$



**Watch Video Solution**

$$307. I = \int_0^4 (x^2 + 2x + 4) dx$$



Watch Video Solution

308. Evaluate the following integrals  $\int_{-2}^3 x^4 dx$



Watch Video Solution

309. Evaluate the following integrals  $\int_0^1 x^{\frac{1}{3}} dx$



Watch Video Solution

**310.** Evaluate the following integrals

$$\int_1^4 \left( \frac{dx}{\sqrt{x}} \right) dx$$



**Watch Video Solution**

**311.** Evaluate the following integrals

$$\int_1^3 \left( \frac{dx}{x^3} \right) dx$$



**Watch Video Solution**

**312.** Evaluate the following integrals

$$\int_1^2 \left( 4x + \sqrt{x} + \frac{1}{x^{\frac{1}{3}}} + \frac{1}{x^2} \right) dx$$



**Watch Video Solution**

**313.** Evaluate the following integrals

$$\int_{-1}^2 (2x + 1)(x - 2) dx$$



**Watch Video Solution**

**314.** Evaluate the following integrals

$$\int_0^1 (2x + 1)^4$$



**Watch Video Solution**

**315.** Evaluate the following integrals

$$\int_0^1 x^7 (1 + x^8)^{\frac{1}{3}} dx$$



**Watch Video Solution**



**316.** Evaluate the following integrals

$$\int_1^4 \frac{x^2 - 3x + 5}{\sqrt{x}} dx$$



**Watch Video Solution**

**317.** Evaluate the following integrals

$$\int \frac{(x + 2)(x^2 + 3)}{\sqrt{x}} dx$$



**Watch Video Solution**

**318.** Evaluate the following integrals

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



**Watch Video Solution**

**319.** Evaluate the following integrals

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



**Watch Video Solution**

**320.** Evaluate the following integrals

$$\int_0^{\frac{\pi}{4}} \tan^2 x dx$$



**Watch Video Solution**

**321.** Evaluate the following integrals

$$\int_0^{\pi} 3 \sin\left(\frac{x}{2}\right) \cos\left(\frac{x}{2}\right) dx$$



**Watch Video Solution**

**322.** Evaluate the following integrals

$$\int_0^{\frac{\pi}{4}} \sin 2x \cos x dx$$



**Watch Video Solution**

**323.** Evaluate the following integrals

$$\int_{\frac{\pi}{6}}^{\frac{\pi}{3}} \frac{1 + \cos 2x}{1 - \cos 2x} dx$$



**Watch Video Solution**

**324.** Evaluate the following integrals

$$\int_{\frac{\pi}{4}}^{\frac{\pi}{2}} \cot x dx$$



**Watch Video Solution**

**325.** Evaluate the following integrals

$$\int_0^{\frac{\pi}{4}} \cos^2 2x \sin^3 4x dx$$



**Watch Video Solution**

**326.** Evaluate the following integrals

$$\int_1^2 e^{4x+1} dx$$



**Watch Video Solution**

**327.** Evaluate the following integrals

$$\int_1^2 (3^{x+2}) dx$$



**Watch Video Solution**

**328.** Evaluate the following integrals

$$\int_0^1 \cosh 2x dx$$



**Watch Video Solution**

**329.** Evaluate the following integrals

$$\int_0^1 \frac{e^x - e^{-x}}{e^x + e^{-x}} dx$$



**Watch Video Solution**

**330.** 
$$\int_0^{\sqrt{3}} \frac{dx}{1+x^2}$$



Watch Video Solution

$$331. \int_0^1 \frac{dx}{\sqrt{1-x^2}}$$



Watch Video Solution

$$332. \int_{\frac{2}{\sqrt{3}}}^2 \frac{dx}{x(\sqrt{x^2-1})}$$



Watch Video Solution



**333.** Evaluate the following integrals

$$\int_0^2 x^2 e^{x^3} dx$$



**Watch Video Solution**

**334.** 
$$\int_0^{\ln 2} \frac{dx}{\sqrt{e^{2x} - 1}}$$



**Watch Video Solution**

**335.** 
$$\int_0^1 \frac{dx}{3x + 2}$$



**Watch Video Solution**

$$336. \int_0^4 \frac{dx}{\sqrt{x^2 + 9}}$$

 [Watch Video Solution](#)

$$337. \int_2^3 \frac{dx}{\sqrt{x^2 - 2}}$$

 [Watch Video Solution](#)

$$338. \int_0^4 \sqrt{x^2 + 9}$$



Watch Video Solution

$$339. \int_{-2}^1 (|x| + x) dx$$



Watch Video Solution

$$340. \int_2^5 [x] dx$$



Watch Video Solution

$$341. \int_0^{\frac{3}{2}} [2x] dx$$



Watch Video Solution

$$342. \int_0^2 [x^2] dx$$



Watch Video Solution

$$343. \int_1^3 e^x (x + 1) dx$$



Watch Video Solution

$$344. \int_0^{\frac{\pi}{4}} x \sin x dx$$



Watch Video Solution

$$345. \int_1^2 x \log x dx$$



Watch Video Solution

$$346. \int_0^1 x \tan^{-1} x dx$$



Watch Video Solution

$$347. \int_0^1 \frac{x dx}{(2x + 1)(x + 1)}$$



Watch Video Solution

$$348. \int_0^{\frac{\pi}{2}} \frac{\cos x dx}{(\sin x + 1)(\sin x + 2)}$$



Watch Video Solution

$$349. \int_0^{\frac{\pi}{2}} e^x \cos x dx$$



Watch Video Solution

$$350. \int_0^{\frac{\pi}{2}} \frac{1}{1 + \tan x} dx$$



Watch Video Solution

$$351. \int_0^{\frac{\pi}{2}} \frac{\sqrt{\sin x}}{\sqrt{\sin x} + \sqrt{\cos x}} dx$$



Watch Video Solution

$$352. \int_0^1 \frac{\ln(1+x)}{1+x^2} dx (x = \tan \theta)$$



Watch Video Solution

$$353. \int_0^{\pi} \frac{x dx}{1 + \sin x}$$



Watch Video Solution

$$354. \int_{-a}^a x^4 dx$$



Watch Video Solution

$$355. \int_{-a}^a (x^5 + 2x^2 + x) dx$$



Watch Video Solution



$$356. \int_{-\frac{\pi}{4}}^{\frac{\pi}{4}} \cos^2 x dx$$



Watch Video Solution

$$357. \int_{-\frac{\pi}{6}}^{\frac{\pi}{6}} \sin^5 x dx$$



Watch Video Solution

$$358. \int_0^{\pi} \cos^3 x dx$$



Watch Video Solution

$$359. \int_0^{\pi} \cos^2 x dx$$



Watch Video Solution

$$360. \int_0^{\pi} \sin^3 x \cos x dx$$



Watch Video Solution

$$361. \int_0^{\pi} \cos^2 x \sin x dx$$



Watch Video Solution

**362.** Show that

$$\int_0^1 \frac{\ln x}{\sqrt{1-x^2}} dx = \frac{\pi}{2} \ln \frac{1}{2}$$



**Watch Video Solution**

**363.** Show that

$$\int_0^{\frac{\pi}{2}} \frac{\cos x - \sin x}{1 + \sin x \cos x} dx = 0$$



**Watch Video Solution**

**364.** Show that

$$\int_0^{\pi} x \ln \sin x = \frac{\pi^2}{2} \ln \frac{1}{2}$$



**Watch Video Solution**

**365.**  $\int_0^{\frac{\pi}{2}} \ln(\tan x + \cot x) dx$



**Watch Video Solution**

**366.**  $\int_0^{\pi} \left( \frac{x \tan x}{\sec x + \tan x} \right) dx$



**Watch Video Solution**

$$367. \int_1^3 \frac{\sqrt{x} dx}{\sqrt{4-x} + \sqrt{x}}$$



Watch Video Solution

$$368. \int_0^{\pi} \frac{x \sin x dx}{1 + \cos^2 x}$$



Watch Video Solution

$$369. \int_0^1 x(1-x)^{100} dx$$



Watch Video Solution

370. 
$$\int_{\pi/6}^{\pi/3} \frac{dx}{1 + \sqrt{\cot x}}$$



Watch Video Solution

371. Integrate the following 
$$\int_0^{50} e^{x - [x]} dx$$



Watch Video Solution

372. 
$$\int_0^{\pi/2} \sin^{10} \theta d\theta$$





Watch Video Solution

373. Integrate the following  $\int_0^{\frac{\pi}{2}} \cos^{12} \theta d\theta$



Watch Video Solution

374.  $\int_0^{\frac{\pi}{2}} \sin^{11} \theta d\theta$



Watch Video Solution

375.  $\int_0^{\frac{\pi}{2}} \cos^9 \theta d\theta$



Watch Video Solution

376. Integrate the following  $\int_0^1 \frac{x^7}{\sqrt{1-x^2}} dx$



Watch Video Solution

377.  $\int_0^1 \frac{x^5(4-x^2)}{\sqrt{1-x^2}} dx$



Watch Video Solution

378.  $\int_0^a x^3(a^2-x^2)^{\frac{5}{2}} dx$





Watch Video Solution

$$379. \int_0^1 x^5 \sqrt{\frac{1+x^2}{1-x^2}} dx$$



Watch Video Solution

$$380. \int_0^{\infty} \frac{x^2}{(1+x^6)^n} dx$$



Watch Video Solution

381.  $\int_0^{\pi} \sin^8 \theta d\theta$



Watch Video Solution

382.  $\int \sqrt{1 - \sin 2x} dx$



Watch Video Solution

383.  $\int \frac{dx}{1 + \sin x}$



Watch Video Solution

$$384. \int \frac{\sin x}{1 + \sin x} dx$$



Watch Video Solution

$$385. \int \frac{\sec x}{\sec x + \tan x} dx$$



Watch Video Solution

$$386. \int \frac{1 + \sin x}{1 - \sin x} dx$$



Watch Video Solution

$$387. \int \tan^{-1}(\sec x + \tan x) dx$$



Watch Video Solution

$$388. \int \frac{\cos 2x - \cos 2\alpha}{\cos x - \cos \alpha} dx$$



Watch Video Solution

$$389. \int \tan^{-1} \sqrt{\frac{1 - \cos 2x}{1 + \cos 2x}} dx$$



Watch Video Solution

390. 
$$\int \frac{dx}{\sqrt{x+1} + \sqrt{x+2}}$$



Watch Video Solution

391. 
$$\int \frac{2+3x}{3-2x} dx$$



Watch Video Solution

392. 
$$\int \frac{dx}{\sqrt{x} + x}$$



Watch Video Solution

$$393. \int \frac{dx}{1 + \tan x}$$



Watch Video Solution

$$394. \int \frac{x + \sqrt{x+1}}{x+2} dx$$



Watch Video Solution

$$395. \int \sin^{-1} \sqrt{\frac{x}{a+x}} dx = \text{-----}.$$



Watch Video Solution

$$396. \int e^x \left( \frac{2 + \sin 2x}{1 + \cos 2x} \right) dx$$



[Watch Video Solution](#)

$$397. \int \frac{(x^2 + 1)e^x}{(x + 1)^2} dx$$



[Watch Video Solution](#)

$$398. \int \frac{x^2 + 1}{x^4 + x^2 + 1} dx$$



[Watch Video Solution](#)

399.  $\int \frac{x^2 dx}{x^4 + x^2 + 1}$



[Watch Video Solution](#)

400.  $\int \sqrt{\cot x} dx$



[Watch Video Solution](#)

401.  $\int (\sqrt{\tan x} + \sqrt{\cot x}) dx$



[Watch Video Solution](#)



$$402. \int \frac{dx}{x(x^4 + 1)}$$



**Watch Video Solution**

$$403. \int \frac{dx}{e^x - 1}$$



**Watch Video Solution**

$$404. \int \frac{(x - 1)(x - 2)(x - 3)}{(x + 4)(x - 5)(x - 6)} dx$$



**Watch Video Solution**

405.  $\int \frac{dx}{(e^x - 1)^2}$



Watch Video Solution

406. Integrate the following  $\int \frac{dx}{\sin x \cos^2 x}$



Watch Video Solution

407.  $\int_{-a}^a \sqrt{\frac{a-x}{a+x}} dx$



Watch Video Solution

408.  $\int_0^{\pi/2} (\sqrt{\tan x} + \sqrt{\cot x}) dx$



Watch Video Solution

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



Watch Video Solution

410.  $\int_0^{\pi/2} \sin 2x \log(\tan x) dx$



Watch Video Solution

411. 
$$\int_0^{\frac{\pi}{2}} \frac{\sin^2 x dx}{\sin x + \cos x}$$



Watch Video Solution

412. 
$$\int_0^{\frac{\pi}{2}} \frac{x dx}{\sin x + \cos x}$$



Watch Video Solution

413. Prove that 
$$\int_0^{\pi} x \sin^3 x dx = \left( \frac{2\pi}{3} \right)$$



Watch Video Solution

$$414. \int_{\frac{\pi}{5}}^{3\frac{\pi}{10}} \frac{\sin x dx}{\sin x + \cos x}$$



Watch Video Solution

$$415. \int_0^{\pi} |\cos x| dx$$



Watch Video Solution

$$416. \int_1^4 |x - 1| + |x - 2| + |x - 3| dx$$



Watch Video Solution

$$417. \int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} (\sin|x| + \cos|x|) dx$$



[Watch Video Solution](#)

$$418. \int_0^{\pi} \log(1 + \cos x) dx$$



[Watch Video Solution](#)