



## MATHS

### BOOKS - RD SHARMA MATHS (ENGLISH)

#### INDEFINITE INTEGRALS

Others

1. Evaluate:  $\int \frac{1}{\sin^3 x \cos x} dx$

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

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

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4. Evaluate:  $\int \frac{\sec^2 x}{1 - \tan^2 x} dx$

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

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6. Evaluate  $\int \frac{x}{\sqrt{x+a} - \sqrt{x+b}} dx$

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



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



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9. Evaluate:  $\int \frac{3x^5}{1 + x^{12}} dx$



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10. Evaluate:  $\int \frac{x^2}{x^6 - a^6} dx$



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11. Evaluate:  $\int (\sec x \operatorname{cosec} x) \frac{dx}{\log(\tan x)}$



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12. Evaluate the following integrals :  $\int \frac{\cos x}{1 - \cos x} dx$  OR  $\int \frac{\cot x}{\operatorname{cosec} x - \cot x} dx$

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13. Evaluate the following integrals :  $\int \frac{1 - \cos 2x}{1 + \cos 2x} dx$

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14. Evaluate the following integrals :  $\int (\tan x + \cot x)^2 dx$

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15. Evaluate the following integral :  $\int \frac{5\cos^3 x + 6\sin^3 x}{2\sin^2 x \cos^2 x} dx$

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16. Evaluate the following integrals :  $\int (\sec^2 x + \operatorname{cosec}^2 x) dx$

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17. Evaluate the following integrals :  $\int \frac{\sin^2 x}{1 + \cos x} dx$

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18. Evaluate the following integral :  $\int \frac{5x^4 + 12x^3 + 7x^2}{x^2 + x} dx$

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19. Evaluate:  $\int \frac{(\sin^{-1} x)^3}{\sqrt{1-x^2}} dx$

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20. Evaluate:  $\int \frac{x \tan^{-1} x^2}{1} dx$

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

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22. Evaluate:  $\int \sqrt{\operatorname{cosec} x - 1} dx$

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23. Evaluate:  $\int \left( \frac{\sin(\log x)}{x} dx \right)$

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24. Evaluate:  $\int \left( \frac{\sin(\tan^{-1}x)}{1+x^2} dx \right)$

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

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26. Evaluate the following integrals :  $\int \frac{\cos^2 x - \sin^2 x}{\sqrt{1 + \cos 4x}} dx$

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27. Evaluate:  $\int \frac{5\cos x + 6}{2\cos x + \sin x + 3} dx$

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28. Evaluate:  $\int \frac{1}{p + q \tan x} dx$

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29. Evaluate:  $\int \frac{(3 \sin x - 2) \cos x}{5 - \cos^2 x - 4 \sin x} dx$

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30. Evaluate:  $\int \frac{e^{3x}}{4e^{6x} - 9} dx$

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

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

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

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

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35. Evaluate:  $\int \frac{1 + \tan x}{x + \log \sec x} dx$

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36. Evaluate:  $\int \frac{\operatorname{cosec}^2 x}{1 + \cot x} dx$

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37. Evaluate:  $\int \frac{10x^9 + 10^x(\log)_e 10}{10^x + x^{10}} dx$

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38. Evaluate:  $\int \frac{\operatorname{cosec} x}{\log \tan \left( \frac{x}{2} \right)} dx$

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39. Evaluate:  $\int \frac{dx}{x \log x \log(\log x)}$

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40. Evaluate:  $\int \frac{\cos 4x - \cos 2x}{\sin 4x - \sin 2x} dx$



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41. Evaluate:  $\int \frac{\sec x}{\log(\sec x + \tan x)} dx$



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



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43. Evaluate:  $\int \cos^7 x dx$



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

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45. Evaluate:  $\int \frac{1}{a^2 - b^2 x^2} dx$

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46. Evaluate:  $\int \operatorname{cosec}^4 3x dx$

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47. Evaluate:  $\int \frac{1}{\sqrt{3x^2 + 5x + 7}} dx$

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

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49. Evaluate:  $\int \sqrt[1]{7} (2x - x^2) dx$

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50. Evaluate:  $\int \frac{1}{\cos x + \operatorname{cosec} x} dx$

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51. Evaluate:  $\int \frac{1}{x(x^6 + 1)} dx$

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52. Evaluate:  $\int x \cos x dx$

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53. Evaluate the following integrals :  $\int (3x + 4)^2 dx$

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

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

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56. Evaluate the following integral :  $\int \frac{x^6 + 1}{x^2 + 1} dx$

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

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58. Evaluate the following integral :  $\int \sqrt{x} \left( x^3 - \frac{2}{x} \right) dx$

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59. Evaluate the following integral :  $\int \frac{(x + 1)(x - 2)}{\sqrt{x}} dx$

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

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61. Evaluate the following integral :  $\int \frac{(1 + \sqrt{x})^2}{\sqrt{x}} dx$

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

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

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64. Evaluate:  $\int \frac{1}{\cos 2x + 3\sin^2 x} dx$

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65. Evaluate: (i)  $\int \frac{1}{4x^2 + 12x + 5} dx$  (ii)  $\int \frac{1}{x^2 - 10x + 34} dx$

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66. Evaluate:  $\int \frac{1}{x^2 - 10x + 34} dx$

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67. Evaluate:  $\int \frac{1}{2x^2 - x - 1} dx$

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

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

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70. Evaluate:  $\int \frac{a}{b + ce^x} dx$

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71. Evaluate:  $\int \frac{e^{2x}}{e^{2x} - 2} dx$

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72. Evaluate:  $\int \frac{\cot x}{\log \sin x} dx$

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

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

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75. Evaluate:  $\int \frac{e^x}{\sqrt{16 - e^{2x}}} dx$

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76. Evaluate:  $\int xe^{x^2} dx$

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77. Evaluate:  $\int x^2 \sqrt{x+2} dx$

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

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

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80. Evaluate the following integrals :  $\int (x^e + e^x + e^e) dx$

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81. Evaluate the following integrals :  $\int \left\{ x^2 + e^{\log x} + \left( \frac{e}{2} \right)^x \right\} dx$

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82. Evaluate:  $\int \frac{1}{\sqrt{(1-x^2)\{9+(\sin^{-1}x)^2\}}} dx$

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83. Evaluate the following integrals :  $\int \left( \frac{m}{x} + \frac{m}{m} + m^x + x^m + mx \right) dx$

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84. Evaluate the following integral :  $\int (2 - 3x)(3 + 2x)(1 - 2x)dx$



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



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86. Evaluate the following integrals :  $\int (3x\sqrt{x} + 4\sqrt{x} + 5) dx$



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



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88. Evaluate the following integrals :  $\int \left( 2^x + \frac{5}{x} - \frac{1}{x^{\frac{1}{3}}} \right) dx$

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

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90. Evaluate:  $\int \frac{x + \sqrt{x+1}}{x+2} dx$

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91. Evaluate:  $\int \frac{e^{2x}}{1+e^x} dx$

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

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93. Evaluate:  $\int \sqrt{e^x - 1} dx$

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

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95. Evaluate:  $\int 5^5 \wedge 5^x 5^5 \wedge x 5^x dx$

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

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97. Evaluate:  $\int \frac{x^5}{1 + x^3} dx$

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98. Evaluate:  $\int 4x^3 \sqrt{5 - x^2} dx$

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

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

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

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

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103. Evaluate:  $\int \frac{1}{\cos 3x - \cos x} dx$

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104. Evaluate:  $\int \frac{e^{m \sin^{-1} x}}{\sqrt{1-x^2}} dx$

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105.  $\int (2x - 3)^5 + \sqrt{3x + 2} dx$

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

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

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

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109.  $\int \frac{1}{\sqrt{x+a} + \sqrt{x+b}} dx$

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

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111. Evaluate:  $\int \frac{\log x}{x} dx$

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112. Evaluate:  $\int \frac{\log\left(1 + \frac{1}{x}\right)}{x(1+x)} dx$

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

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114. Evaluate:  $\int \sqrt{1 + e^x} e^x dx$

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

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

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117. Evaluate:  $\int \cot^3 x \operatorname{cosec}^2 x dx$

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118. Evaluate:  $\int \frac{\left\{ e^{\sin^{-1} x} \right\}^2}{\sqrt{1 - x^2}} dx$

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119. Evaluate:  $\int \frac{1 + \sin x}{\sqrt{x - \cos x}} dx$

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120. Evaluate:  $\int \frac{x}{\sqrt{4-x^4}} dx$

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

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122. Evaluate:  $\int \frac{ax^3 + bx}{x^4 + c^2} dx$

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123. Evaluate:  $\int \frac{1}{(x-\alpha)(\beta-x)} dx, (\beta > \alpha)$

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

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

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126. Evaluate:  $\int \frac{x^2}{(a^2 - x^2)^{3/2}} dx$

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127. Evaluate:  $\int \{1 + \tan x \tan(x + \theta)\} dx$

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128. Evaluate:  $\int \tan 2x \tan 3x \tan 5x dx$

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129. Evaluate:  $\int \frac{1}{\sqrt{x}(\sqrt{x} + 1)} dx$

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130. Evaluate:  $\int \frac{1 + \cot x}{x + \log \sin x} dx$

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131. Evaluate:  $\int \frac{\sin 2x}{\sin 5x \sin 3x} dx$

A.  $1/3$

B. null

C. null

D. null

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132. Evaluate:  $\int \frac{2\cos 2x + \sec^2 x}{\sin 2x + \tan x - 6} dx$

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

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

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

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

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137. Evaluate  $\int \frac{x^2 + x + 5}{3x + 2} dx$

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138. Evaluate  $\int \frac{x^3}{x - 2} dx$

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139.  $\int \frac{x^2 + 5x + 2}{x + 2} dx$

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140. Evaluate:  $\int 5^{x + \tan^{-1}x} \left( \frac{x^2 + 2}{x^2 + 1} \right) dx$

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

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142.  $\int (e^x + 1)^2 e^x dx$

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143. Evaluate:  $\int \cot^6 x dx$

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144.  $\int \frac{1 + \cos 4x}{\cot x - \tan x} dx$

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

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146. Evaluate  $\int \left( \frac{1 + \cos x}{1 - \cos x} \right) dx$

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147. Evaluate  $\int \frac{1}{1 + \cos 3x} dx$

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148. Evaluate  $\int \frac{1}{1 - \sin\left(\frac{x}{2}\right)} dx$

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149. Evaluate:  $\int x(1 - x)^{23} dx$

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150. Evaluate:  $\int \frac{1}{\sqrt{x} + 4\sqrt{x}} dx$

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151. Evaluate:  $\int \frac{2\tan x + 3}{3\tan x + 4} dx$

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152. Evaluate  $\int \frac{\cos^3 x}{\sqrt{\sin x}} dx$

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153. Evaluate:  $\int \tan^5 x dx$

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154. Evaluate:  $\int \frac{\cot x}{\sin x} dx$

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

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156. Evaluate:  $\int \frac{1}{\sqrt{\tan^{-1}x}(1+x^2)} dx$

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157. Evaluate:  $\int \sec^6 x \tan x dx$

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158. Evaluate each of the following integrals:

(i)  $\int x^4 dx$

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

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

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160. Evaluate:  $\int \cos 2x dx$

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161. Evaluate :  $\int \frac{a}{a^x b^x} dx$

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162. Evaluate : (i)  $\int \frac{\cos 2x + 2\sin^2 x}{\sin^2 x} dx$  (ii)  $\int \frac{2\cos^2 x - \cos 2x}{\cos^2 x} dx$

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163. Evaluate :  $\int \frac{e^{\log\sqrt{x}}}{x} dx$

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

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

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166. Evaluate:  $\int \tan^3 x \sec^2 x dx$

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167.  $\int \sin^3(2x + 1)dx$



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168.  $\int \sin^2 bxdx$



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169. Evaluate:  $\int \tan x \sec^2 x \sqrt{1 - \tan^2 x} dx$



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170. Evaluate:  $\int \tan^5 x \sec^4 x dx$



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171. Evaluate:  $\int \frac{\sin x}{\sqrt{4\cos^2 x - 1}} dx$

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

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173. Evaluate:  $\int \frac{\sin 2x}{(a + b\cos x)^2} dx$

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174. Evaluate:  $\int e^{\cos^2 x} \sin 2x dx$

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175. Evaluate:  $\int \frac{1 + \cos x}{(x + \sin x)^3} dx$

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

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

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

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179. Evaluate:  $\int \sin^4 x \cos^3 x dx$



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180. Evaluate:  $\int \cos^5 x dx$



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181. Evaluate:  $\int \sin^5 x \cos x dx$



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182. Evaluate:  $\int \sin^3 x \cos^6 x dx$



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183. Evaluate:  $\int \frac{\log x^2}{x} dx$



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184. Evaluate:  $\int x \cos^3(x^2) \sin(x^2) dx$

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185. Evaluate:  $\int 2x \sec^3(x^2 + 3) \tan(x^2 + 3) dx$

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186. Evaluate:  $\int x^2 e^{x^3} \cos(e^{x^3}) dx$

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187. Evaluate:  $\int \frac{x^3 - 3x}{x^4 + 2x^2 + 4} dx$

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

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189. Evaluate:  $\int \frac{1}{\sqrt{a^2 - b^2x^2}} dx$

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190. Evaluate:  $\int \frac{1}{1 - \cot x} dx$

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191. Evaluate:  $\int \frac{x^7}{(a^2 - x^2)^5} dx$

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

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193. Evaluate:  $\int \frac{1}{13 + 3\cos x + 4\sin x} dx$

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194. Evaluate:  $\int \frac{1}{5 + 4\cos x} dx$

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195. Evaluate:  $\int \frac{1}{1 - 2\sin x} dx$

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196. Evaluate the following integrals :  $\int \frac{x^3 - 3x^2 + 5x - 7 + x^2 a^x}{2x^2} dx$



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197. Evaluate the following integrals :  $\int (a \tan x + b \cot x)^2 dx$



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198. Evaluate:  $\int \frac{2}{2 + \sin 2x} dx$



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199. If  $f'(x) = x - \frac{1}{x^2}$  and  $f(1) = \frac{1}{2}$ , find  $f(x)$ .



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200. Evaluate the following integrals :  $\int \{3 \sin x - 4 \cos x\} dx$



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201. If  $f'(x) = 8x^3 - 2x$ ,  $f(2) = 8$ , find  $f(x)$

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202. If  $f'(x) = x + b$ ,  $f(1) = 5$ ,  $f(2) = 13$ , find  $f(x)$

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203. If  $f'(x) = a\sin x + b\cos x$  and  $f'(0) = 4$ ,  $f(0) = 3$ ,  $f\left(\frac{\pi}{2}\right) = 5$ . Find  $f(x)$ .

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204. Evaluate:  $\int x^3 \cos x^4 dx$

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205. Evaluate:  $\int \operatorname{cosec}x \log(\operatorname{cosec}x - \cot x) dx$

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206.  $\int \frac{x \sin^{-1} x^2}{\sqrt{1-x^4}} dx$

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207. Evaluate:  $\int \frac{dx}{\sin^3 x \cos^5 x}$

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

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

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

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211.  $\int \sin x \cos 2x \sin 3x dx$

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

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213.  $\int \sin mx \cos nx dx, m \neq n$

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214. Evaluate:  $\int \frac{\sec x \tan x}{3 \sec x + 5} dx$

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215. Evaluate:  $\int x^2 e^{-x} dx$

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216.  $\int \cos mx \cos nx dx, m \neq n$

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217. Evaluate:  $\int \frac{dx}{x(3 + \log x)}$



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218. Evaluate:  $\int \frac{e^x + 1}{e^x + x} dx$



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219. Evaluate:  $\int \frac{\sin 8x}{\sqrt{9 + \sin^4 4x}} dx$



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



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221.  $\int (x + 2)\sqrt{3x + 5} dx$



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

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223. Evaluate  $\int x\sqrt{x+2} dx$

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224. Evaluate:  $\int \frac{1}{\sqrt{3}\sin x + \cos x} dx$

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225. Evaluate:  $\int \cos \left\{ 2\cot^{-1} \sqrt{\frac{1+x}{1-x}} \right\} dx$

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226. Evaluate the following integrals :  $\int \tan^{-1}\left(\frac{\sin 2x}{1 + \cos 2x}\right) dx$

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

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228. Evaluate:  $\int \frac{\cos x}{\cos 3x} dx$

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229. Evaluate:  $\int \cot^n x \operatorname{cosec}^2 x dx, n \neq -1$

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230. Evaluate the following integrals :  $\int \frac{\tan x}{\sec x + \tan x} dx$

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231. Evaluate:  $\int (x^2 + 2x + 10) dx$

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232. Evaluate the following integrals :  $\int \frac{1}{1 + \cos 2x} dx$

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233. Evaluate :  $\int \sec^4 x \tan x dx$ .

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234. Evaluate:  $\int \frac{e^{\sqrt{x}} \cos(e^{\sqrt{x}})}{\sqrt{x}} dx$

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235. Evaluate:  $\int \frac{\cos^5 x}{\sin x} dx$

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236. Evaluate:  $\int \frac{x}{\sqrt{x^4 + a^4}} dx$

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

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238. Evaluate the following integrals :  $\int \frac{(x^3 + 8)(x - 1)}{x^2 - 2x + 4} dx$

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

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240. Evaluate:  $\int \frac{1}{x^2} \cos^2 \left( \frac{1}{x} \right) dx$

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

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242. Evaluate:  $\int \frac{1}{4\cos^2 x + 9\sin^2 x} dx$

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

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244. Evaluate:  $\int \frac{1}{\sqrt{1 + \cos 2x}} dx$

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

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246. Evaluate:  $\int \frac{\sin(x - a)}{\sin(x - b)} dx$

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247. Evaluate:  $\int \frac{1}{a^2x^2 + b^2} dx$

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248. Evaluate:  $\int \frac{\sec x}{\sec 2x} dx$

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

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250. Evaluate:  $\int \log(x^2) dx$

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

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

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253. Evaluate:  $\int \frac{1}{x\sqrt{4 - 9(\log x)^2}} dx$

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

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255.  $\int \frac{\sin x + \cos x}{\sqrt{1 + \sin 2x}} dx.$

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256. Evaluate:  $\int (x - 15) dx$

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257. A particle just clears a wall of height  $b$  at distance  $a$  and strikes the ground at a distance  $c$  from the point of projection. The angle of

projection is (1)  $\frac{\tan^{-1} b}{ac}$  (2)  $45^\circ$  (3)  $\frac{\tan^{-1}(bc)}{a(c-a)}$  (4)  $\frac{\tan^{-1}(bc)}{a}$

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258. Evaluate:  $\int \frac{x^3}{x^4 + 3x^2 + 2} dx$

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259. Evaluate:  $\int (3x^2 - 18) dx$

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260. Evaluate:  $\int (2x + 3) dx$

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261. Evaluate:  $\int (a - x) dx$

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262. Evaluate:  $\int (2\sin x + 3\cos x) dx$



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263. Evaluate:  $\int(3 + \sin 2x)dx$  and  $\int(2 - 3\cos 2x)dx$



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264. Evaluate: (a)  $\int(1 + \sin x + \cos x)dx$  (b)  $\int(2 + \cos x)dx$  (c)

$\int(\sin x(1 + \cos x))dx$  (d)  $\int(1 - 2\sin x)dx$



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



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



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267.  $\int \frac{dx}{\sin x + \sec x}$



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268. Evaluate:  $\int (x^n + 1) dx$



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269. A bag contains a red ball, a blue ball and a yellow ball, all ball of same size. Kritika takes out a ball from the bag without looking into it. What is probability that she takes out i) Yellow ball ii) red ball iii) blue ball



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270. Evaluate:  $\int \frac{x^2 - 4}{x - 2} dx$



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271. Convert the following points from polar coordinates to the corresponding Cartesian coordinates. (i)

(ii)(iii)  $\left( (iv)(v)2, (vi)\frac{\pi}{vii}3(viii)(ix)(x) \right) (xi)$  (xii) (ii)

(xiii)(xi)  $\left( (xv)(xvi)0, (xvii)\frac{\pi}{xviii}2(xix)(\times)(\times i) \right) (xxii)$  (xxiii) (iii)

(xxiv)(\times v)  $\left( (xxvi)(\times vii) - \sqrt{(xxviii)2(xxix)(xxx)}, (\times \xi)\frac{\pi}{xxxii}4(xxxiii)(\times \xi v)(\times xv) \right)$

(xxvii)



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272. Convert the following points from polar coordinates to the corresponding Cartesian coordinates. (i)

(ii)(iii)  $\left( (iv)(v)2, (vi)\frac{\pi}{vii}3(viii)(ix)(x) \right) (xi)$  (xii) (ii)

(xiii)(xi)  $\left( (xv)(xvi)0, (xvii)\frac{\pi}{xviii}2(xix)(\times)(\times i) \right) (xxii)$  (xxiii) (iii)

$$(xxiv)(\times v) \left( (xxvi)(\times vii) - \sqrt{(xxviii)2(xxix)(xxx)}, (\times \xi) \frac{\pi}{xxxii} 4(xxiii)(\times \xi v)(\times xv) \right)$$

(xxxvii)

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

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274. A particle just clears a wall of height  $b$  at distance  $a$  and strikes the ground at a distance  $c$  from the point of projection. The angle of projection is (1)  $\frac{\tan^{-1}b}{ac}$  (2)  $45^\circ$  (3)  $\frac{\tan^{-1}(bc)}{a(c-a)}$  (4)  $\frac{\tan^{-1}(bc)}{a}$

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275.  $\int \sqrt{\frac{\sin(x - \alpha)}{\sin(x + \alpha)}} dx$

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**276.** Convert the following points from polar coordinates to the corresponding Cartesian coordinates. (i)

(ii)(iii)  $\left( (iv)(v)2, (vi)\frac{\pi}{vii}3(viii)(ix)(x) \right) (xi)$  (xii) (ii)

(xiii)(ξv)  $\left( (xv)(xvi)0, (xvii)\frac{\pi}{xviii}2(xix)(\times)(\times i) \right) (xxii)$  (xxiii) (iii)

(xxiv)(×v)  $\left( (xxvi)(\times vii) - \sqrt{(xxviii)2(xxix)(xxx)}, (\times \xi)\frac{\pi}{xxxii}4(xxxiii)(\times \xi v)(\times xv) \right)$   
(xxxvii)

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

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278. Evaluate:  $\int \frac{dx}{x^2(x^4 + 1)^{\frac{3}{4}}}$  (A)  $-\left(1 + \frac{1}{x^4}\right)^{\frac{1}{4}} + c$  (B)  $\left(1 + \frac{1}{x^4}\right)^{\frac{1}{4}} + c$  (C)

$-\left(1 - \frac{1}{x^4}\right)^{\frac{1}{4}} + c$  (D)  $-\left(1 + \frac{1}{x^4}\right)^{\frac{1}{4}} + c$

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279. Evaluate:  $\int \frac{1}{\cos^6 x + \sin^6 x} dx$

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280. Evaluate:  $\int \frac{\sin 2x \cos 2x}{\sqrt{9 - \cos^4 2x}} dx$

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281. Evaluate:  $\int \frac{x^3}{x^{16} + 4} dx$

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282. Evaluate:  $\int \frac{x^4 + 1}{x^6 + 1} dx$

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

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

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

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$$286. \frac{\tan\theta}{1 - \cot\theta} + \frac{\cot\theta}{1 - \tan\theta} = 1 + \sec\theta \cdot \operatorname{cosec}\theta$$

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287. Convert the following points from polar coordinates to the corresponding Cartesian coordinates. (i)

(ii)(iii)  $\left( (iv)(v)2, (vi)\frac{\pi}{vii}3(viii)(ix)(x) \right) (xi)$  (xii) (ii)

(xiii)(ξv)  $\left( (xv)(xvi)0, (xvii)\frac{\pi}{xviii}2(xix)(\times)(\times i) \right) (xxii)$  (xxiii) (iii)

(xxiv)(×v)  $\left( (xxvi)(\times vii) - \sqrt{(xxviii)2(xxix)(xxx)}, (\times \xi)\frac{\pi}{xxxii}4(xxxiii)(\times \xi v)(\times xv) \right)$   
(xxxvii)

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288. Convert the following points from polar coordinates to the corresponding Cartesian coordinates. (i)

$$(ii)(iii) \left( (iv)(v)2, (vi) \frac{\pi}{vii} 3(viii)(ix)(x) \right) (xi) \quad (xii) \quad (ii)$$

$$(xiii)(\xi v) \left( (xv)(xvi)0, (xvii) \frac{\pi}{xviii} 2(xix)(\times)(\times i) \right) (xxii) \quad (xxiii) \quad (iii)$$

$$(xxiv)(\times v) \left( (xxvi)(\times vii) - \sqrt{(xxviii)2(xxix)(xxx)}, (\times \xi) \frac{\pi}{xxxii} 4(xxxxiii)(\times \xi v)(\times xv) \right)$$

(xxxvii)

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

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

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

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

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293. Evaluate:  $\int \frac{1}{x^3 \sqrt{x^2 - a^2}} dx$

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294. Evaluate:  $\int \frac{x}{(1 - x^4)^{\frac{3}{2}}} dx$

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

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296. Convert the following points from polar coordinates to the corresponding Cartesian coordinates. (i)

(ii)  $\left( 2, \frac{\pi}{3} \right)$  (iii)  $\left( 3, \frac{\pi}{4} \right)$  (iv)  $\left( 4, \frac{\pi}{6} \right)$  (v)  $\left( 5, \frac{\pi}{8} \right)$  (vi)  $\left( 6, \frac{\pi}{10} \right)$  (vii)  $\left( 7, \frac{\pi}{12} \right)$  (viii)  $\left( 8, \frac{\pi}{15} \right)$  (ix)  $\left( 9, \frac{\pi}{18} \right)$  (x)  $\left( 10, \frac{\pi}{20} \right)$  (xi)  $\left( 11, \frac{\pi}{22} \right)$  (xii)  $\left( 12, \frac{\pi}{24} \right)$  (ii)

(xiii)  $\left( \xi v \right) \left( (xv) 0, (xvii) \frac{\pi}{xviii} 2(xix) (\times) (\times i) \right) (xxii)$  (xxiii) (iii)

(xxiv)  $\left( \times v \right) \left( (xxvi) (\times vii) - \sqrt{(xxviii) 2(xxix)(xxx)}, (\times \xi) \frac{\pi}{xxxii} 4(xxxiii) (\times \xi v) (\times xv) \right)$   
(xxvii)

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

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

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

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

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

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

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

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304. Evaluate  $\int \frac{x+2}{(x^2+3x+3)\sqrt{x+1}} + C$

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

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

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

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

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309. Evaluate: (i)  $\int \cot^3 x dx$  (ii)  $\int \cot^4 x dx$

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310. Evaluate:  $\int \tan^8 x \sec^4 x dx$



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311. Evaluate: (i)  $\int \sin^3 x \cos^4 x dx$  (ii)  $\int \sin^2 x \cos^5 x dx$  (iii)  $\int \sin^3 x \cos^5 x dx$



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312. Prove that:  $\int \tan^n x dx = \frac{1}{n-1} \tan^{n-1} x - \int \tan^{n-2} x dx$



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313. Evaluate:  $\int \left( \frac{\sin^2 x}{\cos^{14} x} \right)^{\frac{1}{3}} dx$



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314. Evaluate: (i)  $\int \frac{\sin^4 x}{\cos^8 x} dx$  (ii)  $\int \frac{1}{\sqrt{\sin^3 x \cos^5 x}} dx$

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

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

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

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

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

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320. Evaluate:  $\int \frac{(x-1)(x-2)(x-3)}{(x-4)(x-5)(x-6)} dx$

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

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

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323. Evaluate:  $\int (2x - 5)\sqrt{2 + 3x - x^2} dx$

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

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325. Evaluate:  $\int \frac{\sin x}{\sin 4x} dx$

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

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327. Evaluate:  $\int \left( \frac{1}{(x+1)^{\frac{1}{3}} + \sqrt{x+1}} \right) dx$

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328. Evaluate: (i)  $\int \cot^2 x \operatorname{cosec}^4 x dx$  (ii)  $\int \operatorname{cosec}^4 x dx$

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329. Evaluate:  $\int \frac{x^2}{\sqrt{x+2}} dx$

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330. Evaluate:  $\int x^2 \sqrt{1+xdx}$

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

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332. Evaluate:  $\int \frac{\sqrt{x}}{\sqrt{x}-x^{\frac{1}{3}}} dx$

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333. Evaluate:  $\int 2^{2^x} \cdot 2^x dx$

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334. Evaluate:  $\int \frac{1}{4\sqrt{(x-10)^3(x+2)^5}} dx$

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

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

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337. Evaluate:  $\int \frac{x^2}{(x^2 + a^2)(x^2 + b^2)} dx$

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

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339. Evaluate:  $\int \frac{\tan \theta + \tan^3 \theta}{1 + \tan^3 \theta} d\theta$

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

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

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

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

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344. Evaluate:  $\int \frac{x^2 + 5x - 8}{x^3 - 4x} dx$

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

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

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347. Let L be the line of intersection of the planes  $2x + 3y + z = 1$  and  $x + 3y + 2z = 2$ . If L makes an angles  $\alpha$  with the positive x-axis, then  $\cos\alpha$  equals

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348. Evaluate:  $\int \frac{\sin 2x}{\sin\left(x - \frac{\pi}{3}\right)\sin\left(x + \frac{\pi}{3}\right)} dx$

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

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350. Evaluate integral of  $\tan x \tan 2x \tan 3x$

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351. Evaluate: (i)

(ii)  $\int \frac{1}{v} \left( \sqrt{(vii)3(ix)(x)} \sin x + \cos x \right) dx$  (xi)  $\int \xi dx$  (xi) (xiv) (ii)

(xv)  $\int \frac{1}{xviii} \left( \sin x + x \sqrt{(xx)(x)} \right) dx$  (xxiv)  $\int x v dx$  (xvi)

(xxvii)

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352. Evaluate:  $\int \frac{\sin(x + a)}{\sin(x + b)} dx$

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353. Evaluate: (i)  $\int \frac{\sin(x - a)}{\sin x} dx$  (ii)  $\int \frac{\sin x}{\sin(x - a)} dx$



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354. Evaluate:  $\int \frac{1}{\sqrt{1 - \sin 2x}} dx$



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355. Integrate the integrals:  $\int \sin x \cos 2x \sin 3x dx$



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356. Evaluate:  $\int \frac{\cos 5x + \cos 4x}{1 - 2\cos 3x} dx$



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



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358. Evaluate:  $\int (x + 5)^2 dx$

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

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360. Evaluate: (i)  $\int \frac{1}{\sqrt{3x + 4} - \sqrt{3x + 1}} dx$

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361. Evaluate: (i)

(ii)  $\int \frac{1}{v} \left( \sqrt{(vii)3(ix)(x)\sin x + \cos x} \right) (xi)(\xi i) dx (\xi ii)$  (xiv) (ii)

(xv)(xvi)  $\int (xvii) \frac{1}{xviii} \left( (xix)\sin + x\sqrt{(xx)(\times i)3(xxii)(xxiii)\cos x} \right) (xxiv)(\times v) dx (\times vi)$

(xxvii)

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$$362. \int \frac{x}{\sqrt{x+a} + \sqrt{x+b}} dx$$

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363. Evaluate: (i)

$$(ii)(iii) \int (iv) \frac{1}{v} \left( (vi) \sqrt{(vii)(viii)3(ix)(x) \sin x + \cos x} \right) (xi)(\xi i) dx (\xi ii) \quad (xiv) \quad (ii)$$
$$(xv)(xvi) \int (xvii) \frac{1}{xviii} \left( (xix) \sin + x \sqrt{(xx)(\times i)3(xxii)(xxiii) \cos x} \right) (xxiv)(\times v) dx (\times vi)$$

(xxvii)

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364. Evaluate:  $\int (x - 1)(x + 5) dx$

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365. Evaluate: (i)  $\int \sin^2 x dx$  (ii)  $\int \cos^2 x dx$  (iii)  $\int \sin^2 x \cdot \cos^2 x dx$

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366. Evaluate:  $\int \frac{\sin x}{\sin 4x} dx$

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

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

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369. Evaluate:  $\int 12 + \operatorname{cosec}x(\operatorname{cosec}x + \sin x)dx$

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370. Evaluate:  $\int \sqrt{9 - x^2} dx$

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

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

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

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374. Evaluate:  $\int \sqrt{2ax - x^2} dx$

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

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

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**377. EVALUATE**

$$\int \frac{x^3 + 5x^2 + 4x + 1}{x^3} dx$$



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**378. Evaluate (i)**  $\int (\cos 2x + 2\sin^2 x) dx$



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**379. Evaluate:**  $\int (2\sin x + 3\cos x) dx$



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



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381. Evaluate:  $\int \frac{e^{5(\log)_e x} - e^{4(\log)_e x}}{e^{3(\log)_e x} - e^{2\log x}} dx$

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382. If  $a > 0$  and  $a \neq 1$  evaluate the following integrals:

(i)  $\int e^{x \log_e a} dx$  (ii)  $\int e^{a \log_e x} dx$  (iii)  $\int e^x a^x dx$  (iv)  $\int 2^{\log_e x} dx$

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383. Evaluate:  $\int 2(1 - \cos 2x) dx$

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384. EVALUATE:

(i)  $\int (x^4 + x^2 + 1) d(x^2)$

(ii)  $\int \sin(e^x) d(e^x)$

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385. Evaluate:  $\int (x - 3)(5 - x)dx$

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386. Evaluate:  $\int e^{ax}\cos bx \, dx$

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387. Evaluate:  $\int e^{-x}\cos x \, dx$

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

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389. Evaluate: (i)  $\int \cos(bx + c) dx$  (ii)  $\int \sin(\log x) dx$

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390.  $\int \frac{1}{1 + \tan x} dx = (\log)_e(x + \sin x) + C$  (b)  $(\log)_e(\sin x + \cos x) + C$  (c)  $2 \frac{\sec^2 x}{2} + C$  (d)  $\frac{1}{2} \{x + \log(\sin x + \cos x)\} + C$

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391. Evaluate: (i)

(ii)(iii)  $\int \frac{1}{v} \left( (vi) \sqrt{(vii)(viii)3(ix)(x) \sin x + \cos x} \right) (xi)(\xi i) dx (\xi ii)$  (xiv) (ii)

(xv)(xvi)  $\int \frac{1}{xviii} \left( (xix) \sin + x \sqrt{(xx)(\times i)3(xxii)(xxiii) \cos x} \right) (xxiv)(\times v) dx (\times vi)$

(xxvii)

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

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393. Evaluate :  $\int \frac{1}{1 + \cos x} dx$

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394. Evaluate the following integrals: (i)  $\int x^4 dx$  (ii)  $\int \sqrt{x} dx$

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395. Evaluate the following integrals:  $\int \frac{1}{\sqrt{x}} dx$  (ii)  $\int \frac{1}{x^3} dx$  (iii)  $\int a^{3 (\log)_a x} dx$

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396. Evaluate:  $\int \frac{e^{5 (\log)_e x} - e^{4 (\log)_e x}}{e^{3 (\log)_e x} - e^{2 (\log)_e x}} dx$

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397. Evaluate: (i)  $\int \frac{2}{1 + \cos 2x} dx$  (ii)  $\int \frac{2}{1 - \cos 2x} dx$

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

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399. If  $a > 0$  and  $a \neq 1$  evaluate the following integrals: (i)  $\int e^{x (\log) e^a} dx$  (ii)

$$\int e^{a (\log) e^x} dx$$

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400. If  $a > 0$  and  $a \neq 1$  evaluate the following integrals:  $\int e^x a^x dx$  (ii)

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

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401. Evaluate each of the following integrals: (i)  $\int x^4 dx$  (ii)  $\int x^{5/4} dx$  (iii)

$$\int \frac{1}{x^5} dx \text{ (iv) } \int \frac{1}{x^{3/2}} dx$$

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402. Evaluate each of the following integrals:  $\int 3^x dx$  (ii)  $\int \frac{1}{x^2 3} dx$  (iii)

$$\int 3^{2x} (\log)_3 x dx \text{ (iv) } \int (\log)_x dx$$

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403. Evaluate: (i)  $\int \sqrt{\frac{1 + \cos 2x}{2}} dx$  (ii)  $\int \sqrt{\frac{1 - \cos 2x}{2}} dx$

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404. Evaluate:  $\int \frac{e^6 (\log)_e x - e^5 (\log)_e x}{e^4 (\log)_e x - e^3 (\log)_e x} dx$

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405. Evaluate:  $\int \frac{1}{a^x b^x} dx$

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406. Evaluate :  $\int \frac{\cos 2x + 2\sin^2 x}{\sin^2 x} dx$  (ii)  $\int \frac{2\cos^2 x - \cos 2x}{\cos^2 x} dx$

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407. Evaluate :  $\int \frac{e^{\log \sqrt{x}}}{x} dx$

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408. Evaluate: (i)  $\int 4x^5 dx$  (ii)  $\int 2\sin x dx$  (iii)  $\int 3^{x+2} dx$  (iv)  $\int \frac{1}{2} \sec^2 x dx$

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409. Evaluate:  $\int x^3 + 5x^2 - 4 + \frac{7}{x} + \frac{2}{\sqrt{x}} dx$

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410. Evaluate:  $\int \frac{x^3 + 5x^2 + 4x + 1}{x^2} dx$

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411. Evaluate: (i)  $\int (1 - x)\sqrt{x} dx$  (ii)  $\int \left( \sqrt{x} + \frac{1}{\sqrt{x}} \right)^2 dx$

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

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

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

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

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416. Evaluate:  $\int (3 \sin x - 2 \cos x + 4 \sec^2 x - 5 \operatorname{cosec}^2 x) dx$  (ii)  $\int \sqrt{1 + \cos 2x} dx$

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417. Evaluate: (i)  $\int \sqrt{1 - \cos 2x} \, dx$  (ii)  $\int \sqrt{1 + \sin 2x} \, dx$



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418. Evaluate:  $\int \sqrt{1 - \sin 2x} \, dx$



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419. Evaluate:  $\int \frac{\cos x - \cos 2x}{1 - \cos x} \, dx$



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420. Evaluate: (i)  $\int \tan^2 x \, dx$  (ii)  $\int \cot^2 x \, dx$



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421. Evaluate:  $\int \frac{1}{\sin^2 x \cos^2 x} \, dx$



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422. Evaluate:  $\int \frac{\cos 2x}{s \in^2 x \cos^2 x} dx$



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



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424. Evaluate:  $\int (2\tan x - 3\cot x)^2 dx$



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425. Evaluate:  $\int \frac{\cos 2x - \cos 2\alpha}{\cos x - \cos \alpha} dx$



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426. Evaluate:  $\int \frac{1}{1 + \sin x} dx$

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427. Evaluate:  $\int \frac{1}{1 + \cos x} dx$

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428. Evaluate:  $\int \frac{\sin x}{1 + \sin x} dx$

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429. Evaluate:  $\int \frac{\sec x}{\sec x + \tan x} dx$

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430. Evaluate:  $\int \frac{\sin^6 x + \cos^6 x}{\sin^2 x \cos^2 x} dx$

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431. Evaluate:  $\int \frac{1 + \cos 4x}{\cot x - \tan x} dx$

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432.  $\int \frac{1}{\tan x + \cot x + \sec x + \operatorname{cosec} x} dx$  is equal to

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433. Evaluate: (i)  $\int \sin^{-1}(\cos x) dx, 0 \leq x \leq \pi$  (ii)

$\int \tan^{-1} \left\{ \sqrt{\frac{1 - \cos 2x}{1 + \cos 2x}} \right\} dx, 0 \leq x \leq \pi/2$

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434. Evaluate  $\int \tan^{-1}(\sec x + \tan x) dx$ ,  $-\pi/2 < x < \pi/2$

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435. Evaluate:  $\int \tan^{-1}\left\{\sqrt{\frac{1-\sin x}{1+\sin x}}\right\} dx$ ,  $-\pi/2$

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436. Evaluate:  $\int e^{x \log_e a} + e^{a \log_e x} + e^{a \log_e a} dx$

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437. Evaluate:  $\int \left( \frac{x}{m} + \frac{m}{x} + x^m + m^x \right) dx$

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438. Evaluate: (i)  $\int \frac{2^x + 3^x}{5^x} dx$  (ii)  $\int \frac{(a^x + b^x)^2}{a^x b^x} dx$

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439. Evaluate: (i)  $\int (x^4 + x^2 + 1) d(x^2)$  (ii)  $\int \sin(e^x) d(e^x)$

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440. If  $f'(x) = 3x^2 - \frac{2}{x^3}$  and  $f(1) = 0$ , find  $f(x)$ .

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441. Evaluate the following:  $\int (3x\sqrt{x} + 4\sqrt{x} + 5) dx$  (ii)  $\int \left( 2^x + \frac{5}{x} - \frac{1}{x^{1/3}} \right) dx$

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442. Evaluate: (i)  $\int \left\{ \sqrt{x} (ax^2 + bx + c) \right\} dx$  (ii)  $\int (2 - 3x)(3 + 2x)(1 - 2x) dx$

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443. Evaluate: (i)  $\int \left( \frac{m}{x} + \frac{x}{m} + m^x + x^m + mx \right) dx$  (ii)  $\int \left( \sqrt{x} - \frac{1}{\sqrt{x}} \right)^2 dx$

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444. Evaluate: (i)  $\int \frac{(1+x)^3}{\sqrt{x}} dx$  (ii)  $\int \left\{ x^2 + e^{\log x} + \left( \frac{e}{2} \right)^x \right\} dx$

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445. Evaluate: (i)  $\int (x^e + e^x + e^e) dx$  (ii)  $\int \sqrt{x} \left( x^3 - \frac{2}{x} \right) dx$

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446. Evaluate: (i)  $\int \frac{x^{-1/3} + \sqrt{x} + 2}{x^3} dx$  (ii)  $\int \frac{(1 + \sqrt{x})^2}{\sqrt{x}} dx$

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447. Evaluate: (i)  $\int \sqrt{x}(3 - 5x) dx$  (ii)  $\int \frac{(x + 1)(x - 2)}{\sqrt{x}} dx$

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448. Evaluate: (i)  $\int \frac{x^5 + x^{-2} + 2}{x^2} dx$  (ii)  $\int \frac{5x^4 + 12x^3 + 7x^2}{x^2 + x} dx$

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449. Evaluate: (i)  $\int \frac{\sin^2 x}{1 + \cos x} dx$  (ii)  $\int (\sec^2 x + \operatorname{cosec}^2 x) dx$

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450. Evaluate: (i)  $\int \frac{\sin^3 x - \cos^3 x}{\sin^2 x \cos^2 x} dx$  (ii)  $\int \frac{5\cos^3 x + 6\sin^3 x}{2\sin^2 x \cos^2 x} dx$

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451. Evaluate: (i)  $\int (\tan x + \cot x)^2 dx$  (ii)  $\int \frac{1 - \cos 2x}{1 + \cos 2x} dx$

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

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453. Evaluate: (i)  $\int \frac{1}{1 - \cos x} dx$  (ii)  $\int \frac{1}{1 - \sin x} dx$

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454. Evaluate: (i)  $\int \frac{\tan x}{\sec x + \tan x} dx$  (ii)  $\int \frac{\operatorname{cosec} x}{\operatorname{cosec} x - \cot x} dx$

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455. Evaluate: (i)  $\int \frac{1}{1 + \cos 2x} dx$  (ii)  $\int \frac{1}{1 - \cos 2x} dx$

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456. Evaluate: (i)  $\int \tan^{-1} \left( \frac{\sin 2x}{1 + \cos 2x} \right) dx$  (ii)  $\int \cos^{-1}(\sin x) dx$

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457. Evaluate: (i)  $\int \cot^{-1} \left( \frac{\sin 2x}{1 - \cos 2x} \right) dx$  (ii)  $\int \sin^{-1} \left( \frac{2 \tan x}{1 + \tan^2 x} \right) dx$

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458. Evaluate  $\int \frac{(x^3 + 8)(x - 1)}{x^2 - 2x + 4} dx$

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459. Evaluate: (i)  $\int \frac{x^3 - 3x^2 + 5x - 7 + x^2 a^x}{2x^2} dx$  (ii)  $\int \frac{\cos x}{1 + \cos x} dx$

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460. Evaluate: (i)  $\int \frac{1 - \cos x}{1 + \cos x} dx$  (ii)

$$\int \left\{ 3\sin x - 4\cos x + \frac{5}{\cos^2 x} - \frac{6}{\sin^2 x} + \tan^2 x - \cot^2 x \right\} dx$$

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461. If  $f'(x) = x - \frac{1}{x^2}$  and  $f(1) = \frac{1}{2}$ , find  $f(x)$ .

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462. If  $f'(x) = x + b$ ,  $f(1) = 5$ ,  $f(2) = 13$ , find  $f(x)$ .

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463. If  $f'(x) = 8x^3 - 2x$ ,  $f(2) = 8$ , find  $f(x)$ .

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464. If  $f'(x) = a\sin x + b\cos x$  and  $f'(0) = 4$ ,  $f(0) = 3$ ,  $f\left(\frac{\pi}{2}\right) = 5$ , find  $f(x)$ .

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465. Write the primitive or anti-derivative of  $f(x) = \sqrt{x} + \frac{1}{\sqrt{x}}$ .

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466. Evaluate:  $\int \left\{ (2x - 3)^5 + \frac{1}{(7x - 5)^3} + \frac{1}{\sqrt{5x - 4}} + \frac{1}{2 - 3x} + \sqrt{3x + 2} \right\} dx$

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467. Evaluate: (i)  $\int e^{2x-3} dx$  (ii)  $\int a^{3x+2} dx$

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468. Evaluate: (i)  $\int \sec^2(7 - 4x) dx$  (ii)  $\int \frac{1}{\sin^2 x \cos^2 x} dx$

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469. Evaluate: (i)  $\int \operatorname{cosec}^2(3x + 2) dx$  (ii)  $\int \sin(ax + b)\cos(ax + b) dx$

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470. Evaluate: (i)  $\int \frac{\sin 4x}{\sin 2x} dx$  (ii)  $\int \frac{\sin 4x}{\cos 2x} dx$

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471. Evaluate:  $\int \frac{\sin^8 x - \cos^8 x}{1 - 2\sin^2 x \cos^2 x} dx$

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

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473. Evaluate:  $\int \frac{1}{\sqrt{3x+4} - \sqrt{3x+1}} dx$

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

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

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476.  $\int (2x - 3)^5 + \sqrt{3x + 2} dx$

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477.  $\int \frac{1}{(7x - 5)^3} + \frac{1}{\sqrt{5x - 4}} dx$

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$$478. \int \frac{1}{2-3x} + \frac{1}{\sqrt{3x-2}} dx$$

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$$479. \int \frac{x+3}{(x+1)^4} dx$$

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$$480. \int \frac{1}{\sqrt{x+1} + \sqrt{x}} dx$$

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$$481. \int \frac{1}{\sqrt{2x+3} + \sqrt{2x-3}} dx$$

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$$482. \int \frac{2x}{(2x+1)^2} dx$$

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$$483. \int \frac{1}{\sqrt{x+a} + \sqrt{x+b}} dx$$

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$$484. \int \sin x \sqrt{1 + \cos 2x} dx$$

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$$485. \int \frac{1 + \cos x}{1 - \cos x} dx$$

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$$486. \int \frac{1 - \cos x}{1 + \cos x} dx$$

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$$487. \int \frac{1}{1 - \frac{\sin x}{2}} dx$$

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$$488. \int \frac{1}{1 + \cos 3x} dx$$

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$$489. \int (e^x + 1)^2 e^x dx$$

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$$490. \int \left( e^x + \frac{1}{e^x} \right)^2 dx$$



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$$491. \int \frac{1 + \cos 4x}{\cot x - \tan x} dx$$



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$$492. \int \frac{1}{\sqrt{x+3} - \sqrt{x+2}} dx$$



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$$493. \int \tan^2(2x - 3) dx$$



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494.  $\int \frac{1}{\cos^2 x (1 - \tan x)^2} dx$

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

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496. Evaluate:  $\int \left( \frac{x - 1}{x + 1} \right)^4 dx$

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497. Evaluate:  $\int \frac{ax + b}{(cx + d)^2} dx$

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

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

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

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501. Evaluate:  $\int \frac{x^2}{(a+bx)^2} dx$

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

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

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504. Evaluate:  $\int \frac{x^7}{x + 1} dx$

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505. Evaluate:  $\int \frac{x^6}{x - 1} dx$

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506. Evaluate: (i)  $\int \frac{x^2 + 5x + 2}{x + 2} dx$  (ii)  $\int \frac{x^3}{x - 2} dx$

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507. Evaluate: (i)  $\int \frac{x^2 + x + 5}{3x + 2} dx$  (ii)  $\int \frac{2x + 3}{(x - 1)^2} dx$

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

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509. Evaluate:  $\int x \sqrt{x + 2} dx$

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510. Evaluate:  $\int (7x - 2)\sqrt{3x + 2} \, dx$



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511. Evaluate:  $\int \frac{1}{\sqrt{x+a} + \sqrt{x+b}} \, dx$



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512. Evaluate:  $\int \frac{8x + 13}{\sqrt{4x + 7}} \, dx$



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



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514. Evaluate:  $\int \frac{x}{\sqrt{x+2}} dx$

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515. Evaluate:  $\int x \sqrt{x+2} dx$

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516. Evaluate: (i)  $\int \frac{x-1}{\sqrt{x+4}} dx$  (ii)  $\int (x+2) \sqrt{3x+5} dx$

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517. Evaluate: (i)  $\int \frac{2x+1}{\sqrt{3x+2}} dx$  (ii)  $\int \frac{3x+5}{\sqrt{7x+9}} dx$

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518. Evaluate:  $\int \frac{x}{\sqrt{x+4}} dx$  (ii)  $\int \frac{2-3x}{\sqrt{1+3x}} dx$

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519. Evaluate:  $\int (5x+3)\sqrt{2x-1} dx$

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520. Evaluate: (i)  $\int \sin^2 x dx$  (ii)  $\int \cos^2 x dx$  (iii)  $\int \sin^2 x \cos^2 x dx$

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521. Evaluate:  $\int \sin^4 x dx$

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522. Evaluate:  $\int \cos^4 x dx$



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523. Evaluate:  $\int \sin^4 x \cos^4 x \, dx$



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524.  $\int \sin^2(2x + 5) \, dx$



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525.  $\int \sin^3(2x + 1) \, dx$



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526.  $\int \cos^4 2x \, dx$



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527.  $\int \sin^2 b x \, dx$

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528.  $\int \frac{\sin^2 x}{2} \, dx$

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529. Evaluate:  $\int \frac{\cos^2 x}{2} \, dx$

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530.  $\int \cos^2 nx \, dx$

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531. Evaluate:  $\int \sin x \sqrt{1 + \cos 2x} \, dx$



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532. Evaluate:  $\int \sin 3x \sin 2x \, dx$



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533. Evaluate:  $\int \sin 3x \cos 4x \, dx$



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534. Evaluate:  $\int \cos 2x \cos 4x \cos 6x \, dx$



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535. Evaluate:  $\int \sin x \sin 2x \sin 3x \, dx$



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536. Evaluate:  $\int \frac{\sin 4x}{\sin x} dx$

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537. Evaluate:  $\int \frac{\cos 5x + \cos 4x}{1 - 2\cos 3x} dx$

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538. Integrate:  $\int \sin 4x \cos 7x dx$

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539. Integrate:  $\int \cos 3x \cos 4x dx$

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540. Integrate:  $\int \cos mx \cos nx dx, m \neq n$





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541. Integrate:  $\int (\sin x \cdot \cos x) dx$



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542. Integrate:  $\int \sin 2x \sin 4x \sin 6x dx$



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543. Integrate:  $\int \sin x \cos 2x \sin 3x dx$



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544. Evaluate: (i)  $\int \frac{1}{\sqrt{1 + \cos 2x}} dx$



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545. Evaluate: (i)  $\int \sqrt{\frac{1 + \cos 2x}{1 - \cos 2x}} dx$  (ii)  $\int \sqrt{\frac{1 - \cos x}{1 + \cos x}} dx$

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546. Evaluate:  $\int \frac{1}{\sqrt{1 + \sin 2x}} dx$

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

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548. Evaluate:  $\int \frac{\sin(x - a)}{\sin x} dx$

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549. Evaluate:  $\int \frac{\sin x}{\sin(x - a)} dx$

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550. Evaluate:  $\int \frac{1}{\sin(x - a)\sin(x - b)} dx$

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551. Evaluate:  $\int \frac{1}{\sin(x - a)\cos(x - b)} dx$

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552. Evaluate

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

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553. Evaluate:  $\int \frac{\sin(x + a)}{\sin(x + b)} dx$

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

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

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556. Evaluate:  $\int \frac{\sec^2 x}{3 + \tan x} dx$

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557. Evaluate:  $\int \frac{e^x - e^{-x}}{e^x + e^{-x}} dx$



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558. Evaluate:  $\int e^{3\log x} (x^4 + 1)^{-1} dx$



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



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



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561. Evaluate:  $\int \frac{\tan x}{a + b \tan^2 x} dx$



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

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563. Evaluate:  $\int \tan x \tan 2x \tan 3x dx$

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564. Evaluate:  $\int \tan(x - \theta) \tan(x + \theta) \tan 2x dx$

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

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566. Evaluate:  $\int \frac{\sin 2x}{\sin\left(x - \frac{\pi}{3}\right)\sin\left(x + \frac{\pi}{3}\right)} dx$

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567. Evaluate: (i)  $\int \frac{1}{\sqrt{1 - \cos 2x}} dx$  (ii)  $\int \frac{1}{\sqrt{1 + \cos x}} dx$

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568. Evaluate: (i)  $\int \sqrt{\frac{1 + \cos 2x}{1 - \cos 2x}} dx$  (ii)  $\int \sqrt{\frac{1 - \cos x}{1 + \cos x}} dx$

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569. Evaluate: (i)  $\int \frac{\sec x}{\sec 2x} dx$  (ii)  $\int \frac{\cos 2x}{(\cos x + \sin x)^2} dx$

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570. Evaluate: (i)  $\int \frac{1 + \tan x}{1 - \tan x} dx$  (ii)  $\int \frac{\cos x}{\cos(x - a)} dx$

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571. Evaluate: (i)  $\int \sqrt{\frac{1 - \sin 2x}{1 + \sin 2x}} dx$  (ii)  $\int \frac{e^{3x}}{e^{3x} + 1} dx$

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572. Evaluate: (i)  $\int \frac{\sec x \tan x}{3 \sec x + 5} dx$  (ii)  $\int \frac{1 - \cot x}{1 + \cot x} dx$

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573. Evaluate: (i)  $\int \frac{\sec x \operatorname{cosec} x}{\log(\tan x)} dx$  (ii)  $\int \frac{1}{x(3 + \log x)} dx$

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574. Evaluate: (i)  $\int \frac{e^x + 1}{e^x + x} dx$  (ii)  $\int \frac{1}{x \log x} dx$

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575. Evaluate: (i)  $\int \frac{\sin 2x}{a \cos^2 x + b \sin^2 x} dx$  (ii)  $\int \frac{\cos x}{2 + 3 \sin x} dx$

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576. Evaluate: (i)  $\int \frac{1 - \sin x}{x + \cos x} dx$

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577. Evaluate: (i)  $\int \frac{1}{e^x + 1} dx$  (ii)  $\int \frac{\cot x}{\log \sin x} dx$

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578. Evaluate: (i)  $\int \frac{e^{2x}}{e^{2x} - 2} dx$

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579. Evaluate: (i)  $\int \frac{\sin x + 2\cos x}{2\sin x + \cos x} dx$  (ii)  $\int \frac{\cos 4x - \cos 2x}{\sin 4x - \sin 2x} dx$

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580. Evaluate: (i)  $\int \frac{\sec x}{\log(\sec x + \tan x)} dx$  (ii)  $\int \frac{\operatorname{cosec} x}{\frac{\log \tan x}{2}} dx$

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581. Evaluate: (i)  $\int \frac{1}{x \log x \log(\log x)} dx$  (ii)  $\int \frac{\operatorname{cosec}^2 x}{1 + \cot x} dx$

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582. Evaluate: (i)  $\int \frac{x+1}{x(x+\log x)} dx$  (ii)  $\int \frac{1}{\sqrt{1-x^2}(2+3\sin^{-1}x)} dx$

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583. Evaluate: (i)  $\int \frac{\sec^2 x}{\tan x + 2} dx$  (ii)  $\int \frac{2\cos 2x + \sec^2 x}{\sin 2x + \tan x - 5} dx$

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584. Evaluate: (i)  $\int \frac{\sin 2x}{\sin 5x \sin 3x} dx$  (ii)  $\int \frac{1 + \cot x}{x + \log \sin x} dx$

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585. Evaluate: (i)  $\int \frac{1}{\sqrt{x}(\sqrt{x}+1)} dx$  (ii)  $\int \tan 2x \tan 3x \tan 5x dx$

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586. Evaluate: (i)  $\int \{1 + \tan x \tan(x + \theta)\} dx$  (ii)  $\int \frac{\sin 2x}{\sin\left(x - \frac{\pi}{6}\right)\sin\left(x + \frac{\pi}{6}\right)} dx$

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587. Evaluate:  $\int \frac{1}{\cos 3x - \cos x} dx$

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588. Evaluate: (i)  $\int \frac{3x + 1}{(3x^2 + 2x + 1)^3} dx$  (ii)  $\int \sin^3 x \cos x dx$

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589. Evaluate: (i)  $\int \tan^3 x \sec^2 x dx$  (ii)  $\int \frac{(\log x)^3}{x} dx$

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590. Evaluate: (i)  $\int \frac{(1 + \log x)^2}{x} dx$  (ii)  $\int \frac{\sec^2(2\tan^{-1}x)}{1 + x^2} dx$

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591. Evaluate: (i)  $\int \frac{\tan x \sec^2 x}{(a + b \tan^2 x)^2} dx$  (ii)  $\int \sec^3 x \tan x dx$

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592. Evaluate: (i)  $\int x^3 \sin x^4 dx$  (ii)  $\int e^{-x} \operatorname{cosec}^2(2e^{-x} + 5) dx$  (iii)  
 $\int x^2 \frac{\tan^{-1} x^3}{1 + x^6} dx$

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593. Evaluate:

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

(ii)  $\int \{f(ax + b)\}^n f'(ax + b) dx, n \neq -1$



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594. Evaluate:  $\int \frac{\sin 2x}{(a + b \cos x)^2}$



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595. Evaluate:  $\int \frac{1}{\sqrt{\sin^3 x \sin(x + \alpha)}} dx, \alpha \neq n\pi, n \in \mathbb{Z}$



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596. Evaluate:  $\int \frac{(x^4 - x)^{1/4}}{x^5} dx$



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597. Evaluate:  $\int \frac{\sec^4 x}{\sqrt{\tan x}} dx$



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598. Evaluate:  $\int \frac{\cos^9 x}{\sin x} dx$

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599. Evaluate:  $\int \frac{1}{\sqrt[4]{(x-1)^3(x+2)^5}} dx$ .

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600. Evaluate: (i)  $\int x^x(1 + \log x) dx$  (ii)  $\int x^{2x} (1 + \log x) dx$

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

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

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603. Evaluate: (i)  $\int \frac{\log x}{x} dx$  (ii)  $\int \frac{\log\left(1 + \frac{1}{x}\right)}{x(1+x)} dx$

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604. Evaluate:  $\int \sqrt{1 + e^x} e^x dx$

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

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606. Evaluate: (i)  $\int \cot^3 x \operatorname{cosec}^2 x \, dx$  (ii)  $\int \frac{\{e^{\sin^{-1}((-1)x)}\}^2}{\sqrt{1-x^2}} \, dx$

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607. Evaluate:  $\int \frac{1}{\sqrt{1-x^2}(\sin^{-1}x)^2} \, dx$

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608. Evaluate: (i)  $\int \frac{\cot x}{\sqrt{\sin x}} \, dx$  (ii)  $\int \frac{\tan x}{\sqrt{\cos x}} \, dx$

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609. Evaluate: (i)  $\int \frac{\cos^3 x}{\sqrt{\sin x}} \, dx$  (ii)  $\int \frac{\sin^3 x}{\sqrt{\cos x}} \, dx$

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610. Evaluate:  $\int \frac{1}{\sqrt{\tan^{-1}x(1+x^2)}} dx$

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611. Evaluate: (i)  $\int \frac{1}{x}(\log x)^2 dx$  (ii)  $\int \sin^5 x \cos x dx$

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612. Evaluate (i)  $\int \tan^{3/2} x \sec^2 x dx$  (ii)  $\int \frac{x^3}{(x^2 + 1)^3} dx$

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613. Evaluate: (i)  $\int (4x + 2)\sqrt{x^2 + x + 1} dx$  (ii)  $\int \frac{4x + 3}{\sqrt{2x^2 + 3x + 1}} dx$

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614. Evaluate: (i)  $\int \frac{1}{1 + \sqrt{x}} dx$  (ii)  $\int e^{\cos x} \sin 2x dx$

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615. Evaluate:  $\int \frac{\cos x - \sin x}{1 + \sin 2x} dx$

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616. Evaluate: (i)  $\int \frac{\sin 2x}{(a + b \cos 2x)^2} dx$  (ii)  $\int \frac{\log x^2}{x} dx$

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617. Evaluate: (i)  $\int \frac{\sin x}{(1 + \cos x)^2} dx$  (ii)  $\int \cot x \log \sin x dx$

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618. Evaluate: (i)  $\int \sec x \log(\sec x + \tan x) dx$  (ii)  $\int \operatorname{cosec} x \log(\operatorname{cosec} x - \cot x) dx$

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619. Evaluate: (i)  $\int x^3 \cos x^4 dx$  (ii)  $\int x^3 \sin x^4 dx$

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620. Evaluate: (i)  $\int \frac{x \sin^{-1} x^2}{\sqrt{1-x^4}} dx$  (ii)  $\int x^3 \sin(x^4 + 1) dx$

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

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622. Evaluate: (i)  $\int 2x \sec^3(x^2 + 3) \tan(x^2 + 3) dx$  (ii)  $\int \left(\frac{x+1}{x}\right) (x + \log x)^2 dx$

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623. Evaluate: (i)  $\int \tan x \sec^2 x \sqrt{1 - \tan^2 x} dx$  (ii)  $\int \log x \frac{\sin\{1 + (\log x)^2\}}{x} dx$

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624. Evaluate: (i)  $\int \frac{1}{x^2} \cos^2\left(\frac{1}{x}\right) dx$  (ii)  $\int \sec^4 x \tan x dx$

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625. Evaluate: (i)  $\int \frac{e^{\sqrt{x}} \cos(e^{\sqrt{x}})}{\sqrt{x}} dx$  (ii)  $\int \frac{\cos^5 x}{\sin x} dx$

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626. Evaluate: (i)  $\int \frac{\sin\sqrt{x}}{\sqrt{x}} dx$  (ii)  $\int \frac{(x+1)e^x}{\sin^2(xe^x)} dx$

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627. Evaluate: (i)  $\int 5^x + \tan^{(-1)x} \left( \frac{x^2+2}{x^2+1} \right) dx$  (ii)  $\int \frac{e^m \sin^{(-1)x}}{\sqrt{1-x^2}} dx$

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628. Evaluate: (i)  $\int \frac{\cos\sqrt{x}}{\sqrt{x}} dx$  (ii)  $\int \left( \frac{\sin(\tan^{-1}x)}{1+x^2} \right) dx$

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629. Evaluate: (i)  $\int \left( \frac{\sin(\log x)}{x} \right) dx$  (ii)  $\int \frac{e^m \tan^{(-1)x}}{1+x^2} dx$

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630. Evaluate: (i)  $\int \frac{x}{\sqrt{x^2 + a^2} + \sqrt{x^2 - a^2}} dx$  (ii)  $\int \frac{x \tan^{-1} x^2}{1 + x^4} dx$

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631. Evaluate: (i)  $\int \frac{(\sin^{-1} x)^3}{\sqrt{1 - x^2}} dx$  (ii)  $\int \left( \frac{\sin(2 + 3 \log x)}{x} \right) dx$

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632. Evaluate: (i)  $\int x e^{x^2} dx$  (ii)  $\int \frac{e^{2x}}{1 + e^x} dx$

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633. Evaluate: (i)  $\int \frac{\sec^2 \sqrt{x}}{\sqrt{x}} dx$  (ii)  $\int \tan^3 2x \sec 2x dx$

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634. Evaluate:  $\int e^{2x} + \tan x dx$



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635. Evaluate: (i)  $\int \frac{1}{x\sqrt{x^4 - 1}} dx$  (ii)  $\int \sqrt{e^x - 1} dx$



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636. Evaluate: (i)  $\int \frac{1}{(x+1)(x^2+2x+2)} dx$  (ii)  $\int \frac{x^5}{\sqrt{1+x^3}} dx$



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637. Evaluate: (i)  $\int 4x^3 \sqrt{5-x^2} dx$  (ii)  $\int \frac{1}{\sqrt{x+x}} dx$



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638. Evaluate: (i)  $\int \frac{1}{x^2(x^4 + 1)^{3/4}} dx$  (ii)  $\int \frac{\sin^5 x}{\cos^4 x} dx$

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639. Evaluate:  $\int \frac{x^2}{\sqrt{x+2}} dx$

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640. Evaluate:  $\int x^2 \sqrt{1+x} dx$

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641. Evaluate:  $\int x(1-x)^n dx$

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642. Evaluate:  $\int \frac{x^5}{x+1} dx$

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643. Evaluate:  $\int \frac{x^2}{(a+bx)^2} dx$

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644. Evaluate:  $\int \frac{1}{x^{1/2} + x^{1/3}} dx$

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

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646. Evaluate:  $\int \frac{\sqrt{x}}{\sqrt{x} - x^{\frac{1}{3}}} dx$

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647. Evaluate:  $\int \left( \frac{1}{(x+1)^{\frac{1}{3}} + \sqrt{x+1}} \right) dx$

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

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

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

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651.  $\int \frac{x^2}{\sqrt{1-x}} dx$  (ii)  $\int x(1-x)^{23} dx$

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652.  $\int (\sqrt{x} + x^4) dx$

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653. Evaluate: (i)  $\int \tan^n x \sec^2 x dx$  (ii)  $\int \tan^2 x \sec^4 x dx$  (iii)  $\int \sec^4 x dx$

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654. Evaluate: (i)  $\int \cot^2 x \operatorname{cosec}^4 x \, dx$  (ii)  $\int \operatorname{cosec}^4 x \, dx$

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655. Evaluate:  $\int \tan^3 x \sec^2 x \, dx$

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656. Evaluate:  $\int \sec^n x \tan x \, dx$

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657. Evaluate:  $\int \tan^3 x \, dx$

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658. Evaluate:  $\int \tan^4 x \, dx$



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659. Evaluate:  $\int \cot^3 x \, dx$



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660.  $\int \cot^4 x \, dx$



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661. Prove that:  $\int \tan^n x \, dx = \frac{1}{n-1} \tan^{n-1} x - \int \tan^{n-2} x \, dx$



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662. Evaluate: (i)  $\int \tan^3 x \sec^2 x \, dx$  (ii)  $\int \tan x \sec^4 x \, dx$



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663. Evaluate: (i)  $\int \tan^5 x \sec^4 x \, dx$  (ii)  $\int \sec^6 x \tan x \, dx$

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664. Evaluate:  $\int \tan^5 x \, dx$

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665. Evaluate: (i)  $\int \sec^4 2x \, dx$  (ii)  $\int \operatorname{cosec}^4 3x \, dx$

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666. Evaluate: (i)  $\int \cot^n x \operatorname{cosec}^2 x \, dx$ ,  $n \neq -1$  (ii)  $\int \cot^5 x \operatorname{cosec}^4 x \, dx$

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667. Evaluate: (i)  $\int \cot^5 x \, dx$  (ii)  $\int \cot^6 x \, dx$



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668. Evaluate:  $\int \sin^3 x \cos^4 x \, dx$



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669. Evaluate:  $\int \sin^2 x \cos^5 x \, dx$



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670. Evaluate:  $\int \sin^3 x \cos^5 x \, dx$



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671. Evaluate:  $\int \cos^3 x e^{\log \sin x} \, dx$ .



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672. Evaluate:  $\int \frac{\sin^4 x}{\cos^8 x} dx$

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673. Evaluate:  $\int \frac{1}{\sqrt{\sin^3 x \cos^5 x}} dx$

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674. Evaluate:  $\int \sec^{4/3} x \operatorname{cosec}^{8/3} x dx$

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675. Evaluate:  $\int \left( \frac{\sin^2 x}{\cos^{14} x} \right)^{\frac{1}{3}} dx$

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676. Evaluate: (i)  $\int \sin^4 x \cos^3 x \, dx$  (ii)  $\int \sin^5 x \, dx$



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677. Evaluate: (i)  $\int \cos^5 x \, dx$  (ii)  $\int \sin^5 x \cos x \, dx$



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678. Evaluate: (i)  $\int \sin^3 x \cos^6 x \, dx$  (ii)  $\int \cos^7 x \, dx$



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679. Evaluate: (i)  $\int x \cos^3 x^2 \sin x^2 \, dx$  (ii)  $\int \sin^7 x \, dx$



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680. Evaluate:  $\int \sin 3x \, dx$



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681. Evaluate: (i)  $\int \frac{1}{\sin^3 x \cos^5 x} dx$  (ii)  $\int \frac{1}{\sin^3 x \cos x} dx$

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682. Evaluate:  $\int \frac{1}{\sin x \cos^3 x} dx$

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683. Evaluate:  $\int \frac{1}{(a^2 - x^2)^{3/2}} dx$ .

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

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

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

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

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688. Evaluate:  $\int \frac{1}{x^4 + x^6} dx$

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

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690. Evaluate:  $\int \frac{1}{x \sqrt{x^4 - 1}} dx$

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691. Evaluate:  $\int \frac{x}{(1 - x^4)^{3/2}} dx$ .

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692. Evaluate:  $\int \frac{x^7}{(1 - x^2)^5} dx$ .

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

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

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

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

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697. Evaluate: (i)  $\int \frac{x^2}{(a^2 - x^2)^{3/2}} dx$  (ii)  $\int \frac{x^7}{(a^2 - x^2)^5} dx$

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698. Evaluate:  $\int \cos \left\{ 2 \cot^{-1} \sqrt{\frac{1+x}{1-x}} \right\} dx$

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

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700. Evaluate: (i)  $\int \frac{1}{4 + 9x^2} dx$  (ii)  $\int \frac{1}{9x^2 - 4} dx$  (iii)  $\int \frac{1}{16 - 9x^2} dx$

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701. Evaluate:  $\int \frac{1}{\sqrt{9 - 25x^2}} dx$

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

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

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704. Evaluate: (i)  $\int \frac{1}{a^2 - b^2 x^2} dx$  (ii)  $\int \frac{1}{a^2 x^2 - b^2} dx$

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705. Evaluate: (i)  $\int \frac{1}{a^2 x^2 - b^2} dx$  (ii)  $\int \frac{x^2 - 1}{x^2 + 4} dx$

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706. Evaluate: (i)  $\int \frac{1}{\sqrt{1 + 4x^2}} dx$  (ii)  $\int \frac{1}{\sqrt{a^2 + b^2 x^2}} dx$

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707. Evaluate: (i)  $\int \frac{1}{\sqrt{a^2 - b^2 x^2}} dx$  (ii)  $\int \frac{1}{\sqrt{(2-x)^2 + 1}} dx$

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708. Evaluate: (i)  $\int \frac{1}{\sqrt{(2-x)^2 - 1}} dx$  (ii)  $\int \frac{x^4 + 1}{x^2 + 1} dx$

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

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

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

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

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713. Evaluate: (i)  $\int \frac{1}{4x^2 + 4x + 5} dx$



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714. Evaluate: (i)  $\int \frac{1}{4x^2 + 12x + 5} dx$  (ii)  $\int \frac{1}{x^2 - 10x + 34} dx$



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715. Evaluate:  $\int (2x^2 - x - 1) dx$



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716. Evaluate: (i)  $\int \frac{1}{x^2 + 6x + 13} dx$



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717. Evaluate: (i)  $\int \frac{x}{x^4 + x^2 + 1} dx$  (ii)  $\int \frac{e^x}{e^{2x} + 6e^x + 5} dx$



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718. Evaluate: (i)  $\int \frac{\sin x}{1 + \cos^2 x} dx$  (ii)  $\int \frac{2x^3}{4 + x^8} dx$

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719. Evaluate:  $\int \frac{1}{(x)(6(\log x)^2 + 7\log x + 2)} dx$

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720. Evaluate:  $\int \frac{e^{-x}}{16 + 9e^{-2x}} dx$

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

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722. Evaluate:  $\int \frac{\sin x + \cos x}{9 + 16\sin 2x} dx$

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723. Evaluate:  $\int \frac{dx}{\sin x + \sec x}$

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724. Evaluate:  $\int \frac{\sec^2 x}{1 - \tan^2 x} dx$

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725. Evaluate:  $\int \frac{e^x}{1 + e^{2x}} dx$

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

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

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728. Evaluate:  $\int \frac{e^{3x}}{4e^{6x} - 9} dx$

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

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730. Evaluate:  $\int \frac{x}{x^4 + 2x^2 + 3} dx$

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731. Evaluate:  $\int \frac{3x^5}{1 + x^{12}} dx$

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732. Evaluate:  $\int \frac{x^2}{x^6 - a^6} dx$

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733. Evaluate:  $\int \frac{x^2}{x^6 - a^6} dx$

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734. Evaluate:  $\int \frac{1}{x\sqrt{x^6+1}} dx$

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

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736. Evaluate:  $\int \frac{x}{3x^4 - 18x^2 + 11} dx$

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

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738. Evaluate:  $\int \frac{1}{\cot x + \operatorname{cosec} x} dx$

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739. Evaluate:  $\int \frac{1}{\sqrt{9 + 8x - x^2}} dx$

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

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741. Evaluate:  $\int \frac{1}{\sqrt{(x - a)(x - b)}} dx$

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

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

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744. Evaluate:  $\int \frac{1}{\sqrt{8 + 3x - x^2}} dx$

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

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746. Evaluate:  $\int \frac{1}{\sqrt{3x^2 + 5x + 7}} dx$

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747. Evaluate:  $\int \frac{1}{(x - \alpha)(\beta - x)} dx, (\beta > \alpha)$

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748. Evaluate:  $\int \frac{1}{\sqrt{7 - 3x - 2x^2}} dx$

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749. Evaluate:  $\int \frac{1}{\sqrt{16 - 6x - x^2}} dx$

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750. Evaluate:  $\int \frac{1}{\sqrt{7 - 6x - x^2}} dx$

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

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752. Evaluate: (i)  $\int \frac{e^x}{\sqrt{4 - e^{2x}}} dx$  (ii)  $\int \frac{x^2}{\sqrt{1 - x^6}} dx$

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753. Evaluate: (i)  $\int \frac{\sec^2 x}{\sqrt{16 + \tan^2 x}} dx$  (ii)  $\int \frac{1}{x \sqrt{(\log x)^2 - 5}} dx$

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754. Evaluate: (i)  $\int \frac{a^x}{\sqrt{1 - a^{2x}}} dx$  (ii)  $\int \frac{2x}{\sqrt{1 - x^2 - x^4}} dx$

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

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756. Evaluate:  $\int \frac{\sqrt{x}}{a^3 - x^3} dx$

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757. Evaluate:  $\int \sqrt{\sec x - 1} dx$

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

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

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760. Evaluate:  $\int \frac{\sin x + \cos x}{\sqrt{1 - \sin 2x}} dx$

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761. Evaluate:  $\int \frac{x}{\sqrt{x^4 + a^4}} dx$

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762. Evaluate:  $\int \frac{\sec^2 x}{\sqrt{4 + \tan^2 x}} dx$

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763. Evaluate:  $\int \frac{e^x}{\sqrt{16 - e^{2x}}} dx$

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

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765. Evaluate:  $\int \frac{\sin x}{\sqrt{4\cos^2 x - 1}} dx$

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766. Evaluate:  $\int \frac{x}{\sqrt{4-x^4}} dx$

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767. Evaluate:  $\int \frac{1}{x \sqrt{4-9(\log x)^2}} dx$

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768. Evaluate:  $\int \frac{\sin 8x}{\sqrt{9+\sin^4 4x}} dx$

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769. Evaluate:  $\int \frac{\cos 2x}{\sqrt{\sin^2 2x + 8}} dx$

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

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

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772. Evaluate:  $\int \frac{\cos x}{\sqrt{4 - \sin^2 x}} dx$

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

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774. Evaluate:  $\int \frac{1}{\sqrt{1-x^2} \{9 + (\sin^{-1}x)^2\}} dx$

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

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776. Evaluate:  $\int \sqrt{\operatorname{cosec} x - 1} dx$

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777. Evaluate:  $\int \frac{\sin x + \cos x}{\sqrt{1 - \sin 2x}} dx$

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778. Evaluate:  $\int \frac{\sin x + \cos x}{\sqrt{1 - \sin 2x}} dx$

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

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

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781. Evaluate:  $\int \frac{2x + 3}{x^2 + 3x - 18} dx$

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782. Evaluate:  $\int (2\sin 2x) dx$



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783. Evaluate:  $\int \frac{x^3 + x}{x^4 - 9} dx$



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784. Evaluate:  $\int \frac{1}{2e^{2x} + 3e^x + 1} dx$



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785. Evaluate:  $\int \frac{x^3}{x^4 + 3x^2 + 2} dx$



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



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

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788. Evaluate:  $\int \frac{x - 3}{x^2 + 2x - 4} dx$

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789. Evaluate:  $\int \frac{2x - 3}{x^2 + 6x + 13} dx$

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

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791. Evaluate:  $\int \frac{2x}{2 + x - x^2} dx$

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

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

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794. Evaluate:  $\int \frac{ax^3 + bx}{x^4 + c^2} dx$

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795. Evaluate:  $\int \frac{(3\sin x - 2)\cos x}{5 - \cos^2 x - 4\sin x} dx$

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796. evaluate  $\int (x + 2)dx$

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797. Evaluate:  $\int \frac{5x - 2}{1 + 2x + 3x^2} dx$

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798. Evaluate:  $\int (x^4 + x^2 + 1) dx$

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799. Evaluate:  $\int \frac{x^3 - 3x}{x^4 + 2x^2 - 4} dx$

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800. Evaluate:  $\int \frac{x^3 + x + 1}{x^2 - 1}$

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801. Evaluate:  $\int \frac{x^2 + 5x + 3}{x^2 + 3x + 2} dx$

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

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803. Evaluate:  $\int \frac{x^2 + x - 1}{x^2 + x - 6} dx$

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

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805. Evaluate:  $\int \frac{x^2 + 1}{x^2 - 5x + 6} dx$

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806. Evaluate:  $\int (x^2 + 7x + 10) dx$

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

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

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809. Evaluate:  $\int (x^3 + x^2 + 2x + 1) dx$

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810. Evaluate:  $\int (x^2 + 4) dx$

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811. evaluate  $\int (x^2 + 6x + 12) dx$

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

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813. Evaluate :  $\int \frac{2x^3 + 5x^2 + 4}{\sqrt{x}} dx$

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

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815. Evaluate:  $\int \sqrt{\frac{a-x}{a+x}} dx$

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

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817. Evaluate:  $\int \frac{x}{\sqrt{x^2 + 6x + 10}} dx$

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

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

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820.  $\int \frac{6x-5}{\sqrt{3x^2-5x+1}} dx$

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821. Evaluate:  $\int \frac{3x+1}{\sqrt{5-2x-x^2}} dx$

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822. Evaluate:  $\int \frac{x}{\sqrt{8+x-x^2}} dx$

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

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

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

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

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

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

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829. Evaluate:  $\int (3x+1)dx$

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

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

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832. Evaluate:  $\int \frac{2x + 3}{\sqrt{x^2 + 4x + 5}} dx$

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833. Evaluate:  $\int (5x + 3) dx$

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

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835. Evaluate:  $\int \frac{1}{a^2 \sin^2 x + b^2 \cos^2 x} dx$

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836. Evaluate:  $\int \frac{1}{1 + 3\sin^2 x + 8\cos^2 x} dx$

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837. Evaluate:  $\int \frac{\sin x}{\sin 3x} dx$

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

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839. Evaluate:  $\int \frac{1}{3 + \sin 2x} dx$

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840. Evaluate:  $\int \frac{1}{2 - 3\cos 2x} dx$

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841. Evaluate:  $\int \frac{1}{4\cos^2 x + 9\sin^2 x} dx$

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842. Evaluate:  $\int \frac{1}{4\sin^2 x + 5\cos^2 x} dx$

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843. Evaluate:  $\int \frac{2}{2 + \sin 2x} dx$

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844. Evaluate:  $\int \frac{\cos x}{\cos 3x} dx$

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845. Evaluate:  $\int \frac{1}{1 + 3\sin^2 x} dx$

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846. Evaluate:  $\int \frac{1}{3 + 2\cos^2 x} dx$

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847. evaluate  $\int(\sin 2x - 2x)dx$

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

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

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

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851. Evaluate:  $\int \frac{1}{\cos 2x + 3\sin^2 x} dx$

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

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853. Evaluate:  $\int \frac{1}{2 + \cos x} dx$

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

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855. Evaluate:  $\int \frac{1}{1 - 2\sin x} dx$

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856. Evaluate:  $\int \frac{1}{5 + 4\cos x} dx$

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857. Evaluate:  $\int \frac{1}{5 - 4\sin x} dx$

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858. Evaluate:  $\int \frac{1}{1 - 2\sin x} dx$

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859. Evaluate:  $\int \frac{1}{4\cos x - 1} dx$

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

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861. Evaluate:  $\int \frac{1}{3 + 2\sin x + \cos x} dx$

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862. Evaluate:  $\int \frac{1}{13 + 3\cos x + 4\sin x} dx$

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863. Evaluate:  $\int \frac{1}{\cos x - \sin x} dx$

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864. Evaluate:  $\int \frac{1}{\sin x \cos x} dx$

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865. Evaluate:  $\int \frac{1}{5 - 4\cos x} dx$

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866. Evaluate:  $\int \frac{1}{3 + 2\sin x + \cos x} dx$

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867. Evaluate:  $\int \frac{1}{\sin x + \sqrt{3}\cos x} dx$

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868. Evaluate:  $\int \frac{1}{\sqrt{3}\sin x + \cos x} dx$

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869. Evaluate:  $\int \frac{1}{\sin x - \sqrt{3}\cos x} dx$

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870. Evaluate:  $\int \frac{1}{5 + 7\cos x + \sin x} dx$

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871. Evaluate:  $\int \frac{1}{\sqrt{3}\sin x + \cos x} dx$

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872. Evaluate:  $\int \frac{1}{\sin x + \sqrt{3}\cos x} dx$

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

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

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875. Evaluate:  $\int \frac{1}{1 + \cot x} dx$

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876. Evaluate:  $\int \frac{5\sin x + 6}{\sin x + 2\cos x + 3} dx$

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877. Evaluate:  $\int \frac{1}{1 - \cot x} dx$

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

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879. Evaluate:  $\int (3 + 2\cos x) dx$

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880. Evaluate:  $\int \frac{1}{p + q\tan x} dx$

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881. Evaluate:  $\int \frac{5\cos x + 6}{2\cos x + \sin x + 3} dx$

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

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883. Evaluate:  $\int \frac{1}{4 + 3 \cot x} dx$

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884. Evaluate:  $\int \frac{2 \tan x + 3}{3 \tan x + 4} dx$

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885. Evaluate:  $\int \frac{1}{4 + 3 \tan x} dx$

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886. Evaluate:  $\int \frac{8 \cot x + 1}{3 \cot x + 2} dx$

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

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888. Evaluate: (i)  $\int x \sin 3x dx$  (ii)  $\int x \sec^2 x dx$

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889. Evaluate:  $\int x \log x dx$

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890. Evaluate:  $\int x \sin^2 x dx$

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891. Evaluate:  $\int x^2 \sin x dx$



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892. Evaluate:  $\int x^2 e^2 dx$



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893. Evaluate:  $\int \log x dx$



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894. Evaluate:  $\int (\log x)^2 dx$



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895. Evaluate:  $\int \sin^{-1} x dx$



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896. Evaluate:  $\int \tan^{-1}x \, dx$

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897. Evaluate:  $\int \sec^{-1}x \, dx$

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898. Evaluate: (i)  $\int x \tan^{-1}x \, dx$

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899. Evaluate:  $\int \frac{\log x}{x^2} \, dx$

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900.  $\int \frac{x - \sin x}{1 - \cos x} \, dx$





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



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902. Evaluate:  $\int \sec^3 x dx$



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903. Evaluate:  $\int \sin \sqrt{x} dx$



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904. Evaluate:  $\int \frac{\sin^{-1} x}{(1 - x^2)^{3/2}} dx$



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905. Evaluate:  $\int (\sin^{-1}x)^2 dx$

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906. Evaluate:  $\int x \log(1+x) dx$

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

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908. Evaluate:  $\int x \cdot \sin x dx$

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909. Evaluate:  $\int x^2 \tan^{-1} x \, dx$

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910. Evaluate:  $\int x^3 \log 2x \, dx$

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911. Evaluate:  $\int x^2 e^x \, dx$

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912. Evaluate:  $\int \sin 2x \, dx$

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



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914. Evaluate:  $\int \left( 3x^2 \tan\left(\frac{1}{x}\right) - x \sec^2\left(\frac{1}{x}\right) \right) dx$



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



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916. Evaluate:  $\int \frac{\sin^{-1}\sqrt{x} - \cos^{-1}\sqrt{x}}{\sin^{-1}\sqrt{x} + \cos^{-1}\sqrt{x}} dx$



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917. Evaluate  $\int \sqrt{x^2 + 1} \frac{\log(x^2 + 1) - 2\log x}{x^4} dx$



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

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919. Find an anti-derivative of the function  $f(x) = \frac{1}{x}$

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920. Evaluate:  $\int \sin^{-1} \left( \frac{2x + 2}{\sqrt{4x^2 + 8x + 13}} \right) dx$

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921. Evaluate:  $\int x \cos x dx$

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922. Evaluate:  $\int \log(x + 1) dx$

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923. Evaluate:  $\int x^3 \log x dx$

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924. Evaluate:  $\int xe^x dx$

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925. Evaluate:  $\int xe^{2x} dx$

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926. Evaluate:  $\int x^2 e^{-x} dx$

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927. Evaluate:  $\int x^2 \cos x dx$

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928. Evaluate:  $\int x^2 \cos 2x dx$

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929. Evaluate:  $\int x \sin 2x dx$

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930. Evaluate:  $\int (x^3 + x^2) dx$



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931. Evaluate:  $\int x^2 + \cos x \, dx$



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932. Evaluate:  $\int x + \cos x \, dx$



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933. Evaluate:  $\int x \cos 2x \, dx$



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934. Evaluate:  $\int x^n \log x \, dx$



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935. Evaluate:  $\int x^n dx$

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936. Evaluate:  $\int \sin^2 x dx$

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

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938. Evaluate:  $\int x^3 + \cos x dx$

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939. Evaluate:  $\int x + \sin x + \cos x dx$



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940. Evaluate:  $\int \sin x^2 dx$



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941. Evaluate:  $\int \sin 3x + x dx$



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942. Evaluate:  $\int e^{\sqrt{x}} dx$



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



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944. Evaluate:  $\int (x + \sin x) dx$

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945. Evaluate:  $\int x^3 + \sec^2 x dx$

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946. Evaluate:  $\int \cos(x) + x^7 dx$

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

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

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949. Evaluate:  $\int \cos x + \operatorname{cosec} x dx$

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950. Evaluate:  $\int x^4 + e^{2x} dx$

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951. Evaluate:  $\int \sin(x) + x^5 + e^x dx$

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952. Evaluate:  $\int x + \tan^2 x dx$



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953. Evaluate:  $\int x^3 + \sin 2x \, dx$



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954. Evaluate:  $\int (x + 1) + e^x \, dx$



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955. Evaluate:  $\int (3x - 4x^3) \, dx$



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956. Evaluate:  $\int \frac{2x}{1+x^2} \, dx$



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957. Evaluate:  $\int \tan^{-1} \left( \frac{3x - x^3}{1 - 3x^2} \right) dx$



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958. Evaluate:  $\int x^2 \sin^{-1} x \, dx$



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



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960. Evaluate:  $\int \frac{x^2 \tan^{-1} x}{1 + x^2} \, dx$



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961. integrate  $\int \cos^{-1}(4x^3 - 3x) dx$



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



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



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964. Evaluate:  $\int (x + 1 + e^x) dx$



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965. Evaluate:  $\int x^2 + \tan x \, dx$

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966. Evaluate:  $\int (\sin x + \cos x) \, dx$

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967. Evaluate:  $\int x^{100} \, dx$

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968. Evaluate:  $\int \tan x \, dx$

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969. Evaluate:  $\int x^3 \tan^{-1} x \, dx$





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970. Evaluate:  $\int \sin x \cos 2x \, dx$

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971. Evaluate:  $\int (\tan^{-1} x^2) x \, dx$

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972. Evaluate:  $\int \frac{\sin^{-1} x}{\sqrt{1-x^2}} \, dx$

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973. Evaluate  $\int \sin 3x \, dx$

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974. Evaluate:  $\int x^3 + \sin 3x \, dx$

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975. Evaluate:  $\int \cos^3 \sqrt{x} \, dx$

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976. Evaluate:  $\int x^3 + \cos 3x \, dx$

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977. Evaluate:  $\int x^3 - x^7 + e^x \, dx$

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978.  $\int (\sin 2x + e^x + x^4) \, dx$



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979. Evaluate:  $\int \frac{x^3 \sin^{-1} x^2}{\sqrt{1-x^4}} dx$



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980. Evaluate:  $\int \frac{x^2 \sin^{-1} x}{(1-x^2)^{3/2}} dx$



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



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982. Evaluate:  $\int [\sin(\log x) + \cos(\log x)] dx$

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983. Evaluate:  $\int e^x (\tan x + \operatorname{logsec} x) dx$

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

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

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

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

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988. Evaluate:  $\int e^x \frac{x-3}{(x-1)^3} dx$

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

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990. Evaluate:  $\int \left\{ \frac{1}{\log x} - \frac{1}{(\log x)^2} \right\} dx$

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

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

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

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

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995. Evaluate:  $\int e^x (\cos x - \sin x) dx$

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996. Evaluate:  $\int e^x \left( \frac{1}{x^2} - \frac{2}{x^3} \right) dx$

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

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998. Evaluate:  $\int e^x (\cot x - \operatorname{cosec}^2 x) dx$

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

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1000. Evaluate:  $\int e^x \sec x (1 + \tan x) dx$

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1001. Evaluate:  $\int e^x (\tan x - \log \cos x) dx$

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1002. Evaluate:  $\int e^x [(\sec x + \log(\sec x + \tan x))] dx$

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1003. Evaluate:  $\int e^x(\cot x + \log \sin x) dx$



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1004. Evaluate:  $\int e^x \frac{x-1}{(x+1)^3} dx$



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1005. Evaluate:  $\int e^x \left( \frac{\sin 4x - 4}{1 - \cos 4x} \right) dx$



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1006. Evaluate:  $\int \frac{2-x}{(1-x)^2} e^x dx$



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1007. Evaluate:  $\int e^x \cdot x \, dx$



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1008. Evaluate:  $\int x \cdot \sin x \, dx$



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1009. Evaluate:  $\int \cos^2 x \, dx$



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1010. Evaluate:  $\int x \cdot \cos x \, dx$



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1011. Evaluate:  $\int \frac{e^x}{x} \left\{ x (\log x)^2 + 2 \log x \right\} dx$



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1012. Evaluate:  $\int e^x \frac{\sqrt{1-x^2} \sin^{-1} x + 1}{\sqrt{1-x^2}} dx$



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1013. Evaluate:  $\int (-\sin x + 2\cos x) dx$



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1014. Evaluate:  $\int e^{2x} + \sin 2x dx$



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1015. Evaluate the following integrals:

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



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1016. Evaluate:  $\int x^{1000} dx$



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1017. Evaluate:  $\int e^x + (x - 2)^3 dx$



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1018. Evaluate:  $\int e^{2x} + \sin 2x dx$



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1019. Evaluate:  $\int e^{2x} \sin 3x \, dx$

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1020. Evaluate:  $\int e^{-x} \cos x \, dx$

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1021. Evaluate:  $\int e^{ax} \cos(bx + c) \, dx$

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1022. Evaluate:  $\int \sin(\log x) \, dx$

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1023. Evaluate:  $\int e^x \cos^2 x \, dx$



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1024. Evaluate:  $\int \frac{1}{\sqrt{x^2 - 9}} dx$

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1025. Evaluate:  $\int \tan^{-1}\left(\frac{x}{a}\right) dx$ .

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1026. Evaluate:  $\int e^{ax} \cos bx dx$

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1027. Evaluate:  $\int e^{ax} \sin(bx + c) dx$

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1028. Evaluate:  $\int \cos(\log x) dx$

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1029. Evaluate:  $\int e^{2x} \cos(3x + 4) dx$

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1030. Evaluate:  $\int e^{2x} \sin x \cos x dx$

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1031. Evaluate:  $\int e^{2x} \sin x dx$

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1032. Evaluate:  $\int e^{2x} \sin(3x + 1) dx$



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1033. Evaluate:  $\int e^x \sin^2 x \, dx$



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1034. Evaluate:  $\int \frac{1}{x^3} \sin(\log x) \, dx$



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1035. Evaluate:  $\int e^{2x} \cos^2 x \, dx$



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1036. Evaluate:  $\int e^{-2x} \sin x \, dx$



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1037. Evaluate:  $\int x^2 e^{x^3} \cos x^3 dx$

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1038. Evaluate: (i)  $\int \sqrt{4x^2 + 9} dx$  (ii)  $\int \sqrt{x^2 + 2x + 5} dx$

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1039. Evaluate:  $\int \sqrt{7x - 10 - x^2} dx$

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1040. Evaluate:  $\int \sqrt{(x - 3)(5 - x)} dx$

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1041. Evaluate:  $\int \sqrt{\frac{1+x}{1-x}} dx$

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1042. Evaluate:  $\int \sqrt{3 - 2x - x^2} dx$

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1043. Evaluate:  $\int \sqrt{3 + 2x - x^2} dx$

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1044. Evaluate:  $\int \sqrt{x^2 + x + 1} dx$

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1045. Evaluate:  $\int x^2 \sqrt{x+2} \, dx$

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1046. Evaluate:  $\int \sqrt{1+x-2x^2} \, dx$

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1047. Evaluate:  $\int \cos x \sqrt{4 - \sin^2 x} \, dx$

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1048. Evaluate:  $\int \frac{1}{\sqrt{1-e^{2x}}} \, dx$

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1049. Evaluate:  $\int \sqrt{9 + x^2} dx$

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1050. Evaluate:  $\int \sqrt{16x^2 + 25} dx$

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1051. Evaluate:  $\int \sqrt{4x^2 - 5} dx$

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1052. Evaluate:  $\int \sqrt{2x^2 + 3x + 4} dx$

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1053. Evaluate:  $\int (3 - 2x - 2x^2) dx$



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1054. Evaluate:  $\int \frac{1}{x} \frac{1}{\sqrt{x^4 - 1}} dx$



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1055. Evaluate:  $\int x^2 \sqrt{a^6 - x^6} dx$



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1056. Evaluate:  $\int \frac{\sqrt{16 + (\log x)^2}}{x} dx$



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1057. Evaluate:  $\int \sqrt{2ax - x^2} dx$



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1058. Evaluate:  $\int \sqrt{3 - x^2} dx$

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1059. Evaluate:  $\int (x - 5) \sqrt{x^2 + x} dx$

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1060. Evaluate:  $\int (3x - 2) \sqrt{x^2 + x + 1} dx$

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1061. Evaluate:  $\int x \sqrt{1 + x - x^2} dx$

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1062. Evaluate:  $\int x \sqrt{1 + x - x^2} dx$

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1063. Evaluate:  $\int \frac{x}{x - \sqrt{x^2 - 1}} dx$

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1064. Evaluate:  $\int (x + 1) \sqrt{x^2 - x + 1} dx$

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1065. Evaluate:  $\int (x + 1) \sqrt{2x^2 + 3} dx$

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1066. Evaluate:  $\int (2x - 5)\sqrt{2 + 3x - x^2} dx$

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1067. Evaluate:  $\int (x + 2)\sqrt{x^2 + x + 1} dx$

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1068. Evaluate:  $\int (4x + 2)\sqrt{x^2 + x + 1} dx$

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1069. Evaluate:  $\int (x - 2)\sqrt{2x^2 - 6x + 5} dx$

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1070. Evaluate:  $\int (x + 1)\sqrt{x^2 + x + 1} dx$





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1071. Evaluate:  $\int (2x - 5) \sqrt{x^2 - 4x + 3} dx$



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1072. Evaluate:  $\int (2x - 5) \sqrt{x^2 - 4x + 3} dx$



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1073. Evaluate:  $\int x^2 \sqrt{x + 2} dx$



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1074. Evaluate:  $\int (x - 3) \sqrt{x^2 + 3x - 18} dx$



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1075. Evaluate  $\int (x + 3)\sqrt{3 - 4x - x^2} dx$

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1076. Evaluate:  $\int (3x + 1)\sqrt{4 - 3x - 2x^2} dx$

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1077. Evaluate:  $\int (2x + 5)\sqrt{10 - 4x - 3x^2} dx$

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1078. Evaluate  $\int (3x + 2) dx$

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1079. Evaluate  $\int (x^2 - 5x + 6) dx$



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1080. Resolve  $\frac{3x - 2}{(x - 1)^2(x + 1)(x + 2)}$  into partial fractions.



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1081. Resolve  $\frac{2x - 1}{(x + 1)(x^2 + 2)}$  into partial fractions.



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1082. How do you express  $\frac{2x - 1}{(x - 1)^3(x - 2)}$  in partial fractions?



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1083. Resolve  $\frac{2x}{x^3 - 1}$  into partial fractions.



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1084. Evaluate:  $\int \frac{x - 1}{(x + 1)(x - 2)} dx$

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1085. Evaluate:  $\int \frac{2x - 1}{(x - 1)(x + 2)(x - 3)} dx$

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1086. Evaluate:  $\int \frac{x^3}{(x - 1)(x - 2)} dx$

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1087. Evaluate:  $\int \frac{2x}{(x^2 + 1)(x^2 + 2)} dx$

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1088. Evaluate:  $\int (\cos\theta) \frac{d\theta}{(2 + \sin\theta)(3 + 4\sin\theta)}$

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1089. Evaluate:  $\int \frac{1}{\sin x - \sin 2x} dx$

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1090.  $\int \frac{1 - \cos x}{\cos x(1 + \cos x)} dx$

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1091. Evaluate:  $\int \frac{(x - 1)(x - 2)(x - 3)}{(x - 4)(x - 5)(x - 6)} dx$

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1092. Evaluate:  $\int \frac{3x + 1}{(x - 2)^2(x + 2)} dx$

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1093. Evaluate:  $\int \frac{x^2 + 1}{(x - 1)^2(x + 3)} dx$

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1094. Evaluate:  $\int \frac{x^2 + x + 1}{(x - 1)^3} dx$

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1095. Evaluate:  $\int (x^2) dx$

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1096. Evaluate:  $\int \frac{8}{(x+2)(x^2+4)} dx$

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1097. Evaluate:  $\int \frac{x}{(x-1)(x^2+4)} dx$

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1098. Evaluate:  $\int \frac{x^2}{(x^2+1)(x^2+4)} dx$

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1099. Evaluate  $\int \frac{x^2}{(x^2+2)(2x^2+1)} dx$

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1100. Evaluate:  $\int (x + 1) dx$

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1101. Evaluate:  $\int (x^5 + x^4 + e^x) dx$

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1102. Evaluate:  $\int \frac{\sin x}{\sin 4x} dx$

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1103. A particle just clears a wall of height  $b$  at distance  $a$  and strikes the ground at a distance  $c$  from the point of projection. The angle of projection is (1)  $\frac{\tan^{-1} b}{ac}$  (2)  $45^\circ$  (3)  $\frac{\tan^{-1}(bc)}{a(c-a)}$  (4)  $\frac{\tan^{-1}(bc)}{a}$

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1104. Evaluate:  $\int \frac{1}{\sin x (2\cos^2 x - 1)} dx$

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1105. Evaluate:  $\int \frac{2x + 1}{(x + 1)(x - 2)} dx$

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1106. Evaluate:  $\int \frac{1}{x(x - 2)(x - 4)} dx$

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1107. Evaluate:  $\int \frac{x^2 + x - 1}{x^2 + x - 6} dx$

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1108. Evaluate:  $\int \frac{3 - (4x) - x^2}{(x + 2)(x - 1)} dx$

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1109. Evaluate:  $\int \frac{x^2 + 1}{x^2 - 1} dx$

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1110. Evaluate:  $\int \frac{x^2}{(x - 1)(x - 2)(x - 3)} dx$

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1111. Evaluate:  $\int \frac{5x}{(x + 1)(x^2 - 4)} dx$

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1112. Evaluate:  $\int \frac{x^2 + 1}{x(x^2 - 1)} dx$

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1113. Evaluate:  $\int \frac{2x - 3}{(x - 1)^2(2x + 3)} dx$

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1114. Evaluate:  $\int \frac{x^3}{(x - 1)(x - 2)(x - 3)} dx$

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1115. Evaluate:  $\int \frac{\sin 2x}{(1 + \sin x)(2 + \sin x)} dx$

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1116. Evaluate:  $\int \frac{2x}{(x^2 + 1)(x^2 + 3)} dx$

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1117. Evaluate:  $\int \frac{1}{x \log x (2 + \log x)} dx$

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1118. Evaluate:  $\int \frac{x^2 + x + 1}{(x^2 + 1)(x + 2)} dx$

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1119. Evaluate:  $\int \frac{ax^2 + bx + c}{(x - a)(x - b)(x - c)} dx$ , where  $a, b, c$  are distinct.

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1120. Evaluate:  $\int \frac{x}{(x^2 + 1)(x - 1)} dx$

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1121. Evaluate:  $\int \frac{1}{(x - 1)(x + 1)(x + 2)} dx$

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1122. Evaluate:  $\int \frac{x^2}{(x^2 + 4)(x^2 + 9)} dx$

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1123. Evaluate:  $\int \frac{5x^2 - 1}{x(x - 1)(x + 1)} dx$

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1124. Evaluate:  $\int \frac{x^2 + 6x - 8}{x^3 - 4x} dx$

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1125. Evaluate:  $\int \frac{x^2 + 1}{(2x + 1)(x^2 - 1)} dx$

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1126. Evaluate:  $\int \frac{1}{x \{ 6 (\log x)^2 + 7 \log x + 2 \}} dx$

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1127. Evaluate:  $\int \frac{1}{x (x^n + 1)} dx$

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1128. Evaluate:  $\int \frac{x}{(x^2 - a^2)(x^2 - b^2)} dx$

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1129. Evaluate:  $\int \frac{x^2 + 1}{(x^2 + 4)(x^2 + 25)} dx$

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1130. Evaluate:  $\int \frac{x^3 + x + 1}{x^2 - 1} dx$

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1131. Evaluate:  $\int \frac{3x - 2}{(x + 1)^2(x + 3)} dx$

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1132. Evaluate:  $\int \frac{2x + 1}{(x + 2)(x - 3)^2} dx$

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1133. Evaluate:  $\int \frac{x^2 + 1}{(x - 2)^2(x + 3)} dx$

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1134. Evaluate:  $\int \frac{x}{(x - 1)^2(x + 2)} dx$

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1135. Evaluate:  $\int \frac{x^2}{(x - 1)(x + 1)^2} dx$

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1136. Evaluate:  $\int \frac{x^2 + x - 1}{(x + 1)^2(x + 2)} dx$





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1137. Evaluate:  $\int \frac{2x^2 + 7x - 3}{x^2(2x + 1)} dx$



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1138. Evaluate:  $\int \frac{5x^2 + 20x + 6}{x^3 + 2x^2 + x} dx$



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1139. Evaluate:  $\int \frac{18}{(x + 2)(x^2 + 4)} dx$



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1140. Evaluate:  $\int \frac{5}{(x^2 + 1)(x + 2)} dx$



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1141. Evaluate:  $\int \frac{x}{(x+1)(x^2+1)} dx$

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1142. Evaluate:  $\int \frac{dx}{x^3 + x^2 + x + 1}$

 [Watch Video Solution](#)

1143. Evaluate:  $\int \frac{1}{(x+1)^2(x^2+1)} dx$

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1144. Evaluate:  $\int \frac{2x}{x^3 - 1} dx$

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1145. Evaluate:  $\int \frac{1}{(x^2 + 1)(x^2 + 4)} dx$

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1146. Evaluate:  $\int \frac{x^2}{(x^2 + 1)(3x^2 + 4)} dx$

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1147.  $\int \frac{3x + 5}{x^3 - x^2 - x + 1} \cdot dx$

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1148. Evaluate:  $\int \frac{x^3 - 1}{x^3 + x} dx$

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1149. Evaluate:  $\int \frac{x^2 + x + 1}{(x + 1)^2(x + 2)} dx$

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1150. Evaluate:  $\int \frac{1}{x(x^4 + 1)} dx$

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1151. Evaluate:  $\int \frac{1}{x(x^3 + 8)} dx$

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1152. Evaluate:  $\int \frac{3}{(1 - x)(1 + x^2)} dx$

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1153. Evaluate:  $\int \frac{\cos x dx}{(1 + \sin x)(2 + \sin x)}$



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1154. Evaluate:  $\int \frac{2x^2 + 1}{x^2(x^2 + 4)} dx$



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1155. Evaluate:  $\int \frac{\cos x}{(1 - \sin x)(2 - \sin x)} dx$



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1156. Evaluate:  $\int \frac{2x + 1}{(x - 2)(x - 3)} dx$



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1157. Evaluate:  $\int \frac{1}{(x^2 + 1)(x^2 + 2)} dx$

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1158. Evaluate:  $\int \frac{1}{x(x^4 - 1)} dx$

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1159. Evaluate: (i)  $\int \frac{1}{1 + \sqrt{x}} dx$  (ii)  $\int e^{\cos x} \sin 2x dx$

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1160. Evaluate:  $\int \frac{x^2}{(x^2 + a^2)(x^2 + b^2)} dx$

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1161. Evaluate:  $\int \frac{1}{\cos x(5 - 4\sin x)} dx$

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1162. Evaluate:  $\int \frac{1}{\sin x(3 + 2\cos x)} dx$

 [Watch Video Solution](#)

1163. Evaluate:  $\int \frac{1}{\sin x + \sin 2x} dx$

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1164. Evaluate:  $\int \frac{x + 1}{x(1 + x e^x)} dx$

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1165. Evaluate  $\int \frac{(x^2 + 1)(x^2 + 2)}{(x^2 + 3)(x^2 + 4)} dx$

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1166. Evaluate:  $\int \frac{4x^4 + 3}{(x^2 + 2)(x^2 + 3)(x^2 + 4)} dx$

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1167. Evaluate:  $\int \frac{x^4 dx}{(x - 1)(x^2 + 1)}$

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1168. Evaluate:  $\int \frac{x^2}{x^4 - x^2 - 12} dx$

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1169. Evaluate:  $\int \frac{x^2}{1-x^4} dx$

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1170. Evaluate:  $\int \frac{x^2}{x^4 + x^2 - 2} dx$

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1171. Evaluate:  $\int \frac{(x^2 + 1)(x^2 + 4)}{(x^2 + 3)(x^2 - 5)} dx$

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1172. Evaluate:  $\int \frac{1+x^2}{1+x^4} dx$

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1173. Evaluate:  $\int \frac{x^2 - 1}{x^4 + x^2 + 1} dx$

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1174. Evaluate:  $\int \frac{x^2 + 4}{x^4 + 16} dx$

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1175. Evaluate:  $\int \frac{1}{x^4 + 1} dx$

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1176. Evaluate:  $\int \frac{x^2}{x^4 + 1} dx$

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1177. Evaluate:  $\int \sqrt{\tan \theta} d\theta$



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1178. Evaluate:  $\int \{ \sqrt{\tan \theta} + \sqrt{\cot \theta} \} d\theta$



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1179. Evaluate:  $\int \frac{1}{\sin^4 x + \cos^4 x} dx$



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1180. Evaluate:  $\int \frac{1}{\cos^6 x + \sin^6 x} dx$



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1181. Evaluate:  $\int \frac{x^4 + 1}{x^6 + 1} dx$

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1182. Evaluate:  $\int \frac{x^3}{x^{16} + 4} dx$

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1183. Evaluate:  $\int \frac{x^2}{\sqrt{4 - x^2}} dx$

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1184. Evaluate:  $\int \frac{x^2 + 1}{x^4 + x^2 + 1} dx$

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1185. Evaluate:  $\int \sqrt{\cot\theta} d\theta$

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1186. Evaluate:  $\int \frac{x^2 + 9}{x^4 + 81} dx$

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1187. Evaluate:  $\int \frac{1}{x^4 + x^2 + 1} dx$

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1188. Evaluate:  $\int \frac{x^2 - 3x + 1}{x^4 + x^2 + 1} dx$

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1189. Evaluate:  $\int \frac{x^2 + 1}{x^4 - x^2 + 1} dx$

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1190. Evaluate:  $\int \frac{x^2 - 1}{x^4 + 1} dx$

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1191.  $\int \frac{(x^2 + 1)}{x^4 + 7x^2 + 1} dx =$

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1192. Evaluate:  $\int \frac{(x^2 - 1)}{x^4 + x^2 + 1} dx$

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1193. Evaluate:  $\int \frac{1}{x^4 + 3x^2 + 1} dx$

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1194. Evaluate:  $\int \frac{1}{\sin^4 x + \sin^2 x \cos^2 x + \cos^4 x} dx$

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1195. Evaluate:  $\int \frac{1}{(x-3)\sqrt{x+1}} dx$

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1196. Evaluate:  $\int \frac{\sqrt{x}}{x+1} dx$

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1197. Evaluate:  $\int \frac{1}{(x^2 - 4)\sqrt{x + 1}} dx$

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1198. Evaluate  $\int \frac{x + 2}{(x^2 + 3x + 3)\sqrt{x + 1}} + C$

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1199. Evaluate:  $\int \frac{1}{(x + 1)\sqrt{x^2 - 1}} dx$

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1200. Evaluate:  $\int \frac{1}{(x - 1)\sqrt{x^2 + 4}} dx$

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1201. Evaluate:  $\int \frac{1}{x^2 \sqrt{1+x^2}} dx$

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1202. Evaluate:  $\int \frac{\sqrt{1+x^2}}{1-x^2} dx$

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1203. Evaluate:  $\int \frac{1}{x \sqrt{ax-x^2}} dx$

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1204. Evaluate:  $\int \frac{1}{(x-1)\sqrt{x+2}} dx$

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1205. Evaluate:  $\int \frac{1}{(x-1)\sqrt{2x+3}} dx$

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1206. Evaluate:  $\int \frac{x+1}{(x-1)\sqrt{x+2}} dx$

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1207. Evaluate:  $\int \frac{x^2}{(x-1)\sqrt{x+2}} dx$

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1208. Evaluate:  $\int \frac{x}{(x-3)\sqrt{x+1}} dx$

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1209. Evaluate:  $\int \frac{1}{(x+1)\sqrt{x}} dx$

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1210. Evaluate:  $\int \frac{\sqrt{x^2 - a^2}}{x} dx$

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1211. Evaluate:  $\int \frac{1}{(x-1)\sqrt{x+1}} dx$

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1212. Evaluate:  $\int \frac{1}{x^3\sqrt{x^2-1}} dx$

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1213. Evaluate:  $\int \frac{1}{(x^2 - 1)\sqrt{x^2 + 1}} dx$

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1214. Evaluate:  $\int \frac{x}{(x^2 + 4)\sqrt{x^2 + 1}} dx$

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1215. Evaluate:  $\int \frac{1}{(1 + x^2)\sqrt{1 - x^2}} dx$

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1216. Evaluate:  $\int \frac{1}{(2x^2 + 3)\sqrt{x^2 - 4}} dx$

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1217. Evaluate:  $\int \frac{x}{(x^2 + 4)\sqrt{x^2 + 9}} dx$

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1218. Write a value of  $\int \frac{1 + \cot x}{x + \log \sin x} dx$

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1219. Write a value of  $\int e^{3 \log x} x^4 dx$

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1220. Write a value of  $\int x^2 \sin x^3 dx$

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1221. Write a value of  $\int \tan^3 x \sec^2 x \, dx$

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1222.  $\int e^x(\sin x + \cos x)dx = ?$

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1223. Write a value of  $\int \tan^6 x \sec^2 x \, dx$

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1224. Write a value of  $\int \frac{\cos x}{3 + 2\sin x} \, dx$

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1225.  $\int e^x \sec x(1 + \tan x)dx$



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1226. Write a value of  $\int \frac{(\log x)^n}{x} dx$



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1227. Write a value of  $\int \frac{(\log x)^n}{x} dx$



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1228. Write a value of  $\int e^{\log \sin x} \cos x dx$



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1229. Write a value of  $\int \sin^3 x \cos x dx$



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1230. Write a value of  $\int \cos^4 x \sin x \, dx$



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1231. Write a value of  $\int \tan x \sec^3 x \, dx$



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1232. Write a value of  $\int \frac{1}{1 + e^x} \, dx$



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1233. Write a value of  $\int \frac{1}{1 + 2e^x} \, dx$



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1234. Write a value of  $\int \frac{(\tan^{-1}x)^3}{1+x^2} dx$

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1235. Write a value of  $\int \frac{\sec^2x}{(5+\tan x)^4} dx$

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1236. Write a value of  $\int \frac{\sin x + \cos x}{\sqrt{1 + \sin 2x}} dx$

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1237. Write a value of  $\int (\log)_e x dx$

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1238. Write a value of  $\int a^x e^x dx$

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1239. Write a value of  $\int e^{2x^2 + \ln x} dx$

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1240. Write a value of  $\int \left( e^{x(\log) e^a} + e^{a(\log) e^x} \right) dx$

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1241. Write a value of  $\int \frac{\cos x}{\sin x \log \sin x} dx$

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1242. Evaluate:  $\int \frac{\sin 2x}{a^2 \sin^2 x + b^2 \cos^2 x} dx$



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1243. Write a value of  $\int \frac{a^x}{3 + a^x} dx$



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1244. Write a value of  $\int \frac{1 + \log x}{3 + x \log x} dx$



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1245. Write a value of  $\int \frac{\sin x}{\cos^3 x} dx$



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1246. Write a value of  $\int \frac{\sin x - \cos x}{\sqrt{1 + \sin 2x}} dx$



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1247. Write a value of  $\int \frac{1}{x (\log x)^n} dx$

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1248. Write a value of  $\int e^{ax} \sin bx dx$

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1249. Write a value of  $\int e^{ax} \cos bx dx$

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1250. Write a value of  $\int e^x \left( \frac{1}{x} - \frac{1}{x^2} \right) dx$

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1251. Write a value of  $\int e^{ax} \{a f(x) + f'(x)\} dx$

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1252. Write a value of  $\int \sqrt{4 - x^2} dx$

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1253. Write a value of  $\int \sqrt{9 + x^2} dx$

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1254. Write a value of  $\int \sqrt{x^2 - 9} dx$

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1255. Evaluate:  $\int \frac{x^2}{1 + x^3} dx$

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1256. Evaluate:  $\int \frac{x^2 + 4x}{x^3 + 6x^2 + 5} dx$

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1257. Evaluate:  $\int \frac{\sec^2 \sqrt{x}}{\sqrt{x}} dx$

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1258. Evaluate:  $\int \frac{\sin \sqrt{x}}{\sqrt{x}} dx$

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1259. Evaluate:  $\int \frac{\cos \sqrt{x}}{\sqrt{x}} dx$

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[Watch Video Solution](#)

1260. Evaluate:  $\int \frac{(1 + \log x)^2}{x} dx$

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1261. Evaluate:  $\int \sec^2(7 - 4x) dx$

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1262. Evaluate:  $\int \frac{\log x}{x} dx$

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1263. Evaluate:  $\int 2^x dx$

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1264. Evaluate:  $\int \frac{1 - \sin x}{\cos^2 x} dx$

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1265. Evaluate:  $\int \frac{x^3 - 1}{x^2} dx$

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1266. Evaluate:  $\int \frac{x^3 - x^2 + x - 1}{x - 1} dx$

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1267. Evaluate:  $\int \frac{e^{\tan^{-1}(-1)(x)}}{1 + x^2} dx$

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1268. Evaluate:  $\int \frac{1}{\sqrt{1-x^2}} dx$

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1269. Evaluate:  $\int \sec x (\sec x + \tan x) dx$

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1270. Evaluate:  $\int \frac{1}{x^2 + 16} dx$

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1271. Evaluate:  $\int (1-x) \sqrt{x} dx$

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1272. Evaluate:  $\int \frac{x + \cos 6x}{3x^2 + \sin 6x} dx$

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1273. If  $\int \left( \frac{x-1}{x^2} \right) e^x dx = f(x) e^x + C$ , then write the value of  $f(x)$ .

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1274. If  $\int e^x (\tan x + 1) \sec x dx = e^x f(x) + C$ , then write the value of  $f(x)$ .

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1275. Evaluate:  $\int \frac{2}{1 - \cos 2x} dx$

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1276. Write the anti derivative of  $\left(3\sqrt{x} + \frac{1}{\sqrt{x}}\right)$ .

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1277. Evaluate:  $\int \cos^{-1}(\sin x) dx$

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1278. Evaluate:  $\int \frac{1}{\sin^2 x \cos^2 x} dx$

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1279.  $\int \frac{x}{4+x^4} dx$  is equal to  $\frac{1}{4} \tan^{-1} x^2$  (b)  $\frac{1}{4} \tan^{-1} \left(\frac{x^2}{2}\right)$  (c)  $\frac{1}{2} \tan^{-1} \left(\frac{x^2}{2}\right)$  (d)

none of these

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1280.  $\int \frac{1}{\cos x + \sqrt{3}\sin x} dx$  is equal to (a)  $\log \tan\left(\frac{\pi}{3} + \frac{x}{2}\right) + C$  (b)

$\log \tan\left(\frac{x}{2} - \frac{\pi}{3}\right) + C$  (c)  $\frac{1}{2} \log \tan\left(\frac{x}{2} + \frac{\pi}{3}\right) + C$  (d) none of these

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1281.  $\int x \sec x^2 dx$  is equal to  $\frac{1}{2} \log(\sec x^2 + \tan x^2) + C$  (b)

$\frac{x^2}{2} \log(\sec x^2 + \tan x^2) + C$  (c)  $2 \log(\sec x^2 + \tan x^2) + C$  (d) none of these

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1282. If  $\int \frac{1}{5 + 4\sin x} dx = A \tan^{-1}\left(B \frac{\tan x}{2} + \frac{4}{3}\right) + C$ , then  $A = \frac{2}{3}$ ,  $B = \frac{5}{3}$  (b)

$A = \frac{1}{3}$ ,  $B = \frac{2}{3}$  (c)  $A = -\frac{2}{3}$ ,  $B = \frac{5}{3}$  (d)  $A = \frac{1}{3}$ ,  $B = -\frac{5}{3}$

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1283.  $\int x^{\sin x} \left( \frac{\sin x}{x} + \cos x \log x \right) dx$  is equal to (A)  $x^{\sin x} + C$  (B)  $x^{\sin x} \cos x + C$  (C)

$\frac{(x^{\sin x})^2}{2} + C$  (D) none of these

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1284. Integration of  $\frac{1}{1 + ((\log)_e x)^2}$  with respect to  $(\log)_e x$  is

$\left( \frac{\tan^{-1}((\log)_e x)}{x} \right) + C$  (b)  $\tan^{-1}((\log)_e x) + C$  (c)  $\frac{\tan^{-1} x}{x} + C$  (d) none of

these

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1285.  $\int \frac{\cos 8x - 1}{\tan 2x - \cot 2x} dx$

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1286. If  $\int \frac{\sin^8 x - \cos^8 x}{1 - 2\sin^2 x \cos^2 x} dx = a \sin 2x + C$ , then  $a =$  -1/2 (b) 1/2 (c) -1 (d) 1

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1287.  $\int (x - 1) e^{-x} dx$  is equal to  $xe^x + C$  (b)  $xe^x + C$  (c)  $-xe^{-x} + C$  (d)  $xe^{-x} + C$

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1288. If  $\int \frac{2^{1/x}}{x^2} dx = k 2^{1/x} + C$ , then  $k$  is equal to  $-\frac{1}{(\log)_e 2}$  (b)  $(\log)_e 2$  (c) -1  
(d)  $\frac{1}{2}$

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1289.  $\int \frac{1}{1 + \tan x} dx =$  `

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1290.  $\int |x|^3 dx$  is equal to (a)  $\frac{-x^4}{4} + C$  (b)  $\frac{|x|^4}{4} + C$  (c)  $\frac{x^4}{4} + C$  (d) none of these

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1291. Evaluate:  $\int \frac{\cos\sqrt{x}}{\sqrt{x}} dx$

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1292.  $\int e^x(1 - \cot x + \cot^2 x) dx = e^x \cot x + C$  (b)  $e^x \cot x + C$  (c)  $e^x \operatorname{cosec} x + C$   
(d)  $e^x \operatorname{cosec} x + C$

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1293.  $\int \frac{\sin^6 x}{\cos^8 x} dx = \tan^7 x + C$  (b)  $\frac{\tan^7 x}{7} + C$  (c)  $\frac{\tan^7 x}{7} + C$  (d)  $\sec^7 x + C$

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$$1294. \int \frac{1}{7 + 5\cos x} dx = \frac{1}{\sqrt{6}} \tan^{-1} \left( \frac{1 + \tan x}{\sqrt{6}} \frac{1}{2} \right) + C \quad (\text{b}) \quad \frac{1}{\sqrt{3}} \tan^{-1} \left( \frac{1 + \tan x}{\sqrt{3}} \frac{1}{2} \right) + C$$

$$(\text{c}) \quad \frac{1}{4} \tan^{-1} \left( \frac{\tan x}{2} \right) + C \quad (\text{d}) \quad \frac{1}{7} \tan^{-1} \left( \frac{\tan x}{2} \right) + C$$

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$$1295. \int \frac{1}{1 - \cos x - \sin x} dx = \log \left| 1 + \frac{\cot x}{2} \right| + C \quad (\text{b}) \quad \log \left| 1 - \frac{\tan x}{2} \right| + C \quad (\text{c})$$

$$\log \left| 1 - \frac{\cot x}{2} \right| + C \quad (\text{d}) \quad \log \left| 1 + \frac{\tan x}{2} \right| + C$$

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$$1296. \int \frac{x+3}{(x+4)^2} e^x dx = \text{a. } \frac{e^x}{x+4} + C \quad (\text{b}) \quad \frac{e^x}{x+3} + C \quad (\text{c}) \quad \frac{1}{(x+4)^2} + C \quad (\text{d})$$

$$\frac{e^x}{(x+4)^2} + C$$

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1297.  $\int \frac{\sin x}{3 + 4\cos^2 x} dx$  a.  $\log(3 + 4\cos^2 x) + C$  (b)  $\frac{1}{2\sqrt{3}} \tan^{-1}\left(\frac{\cos x}{\sqrt{3}}\right) + C$  (c)  $-\frac{1}{2\sqrt{3}} \tan^{-1}\left(\frac{2\cos x}{\sqrt{3}}\right) + C$  (d)  $\frac{1}{2\sqrt{3}} \tan^{-1}\left(\frac{2\cos x}{\sqrt{3}}\right) + C$

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1298.  $\int e^x \left( \frac{1 - \sin x}{1 - \cos x} \right) dx =$  (A)  $e^x \tan\left(\frac{x}{2}\right) + C$  (B)  $e^x \cot\left(\frac{x}{2}\right) + C$  (C)  $-\frac{1}{2} e^x \tan\left(\frac{x}{2}\right) + C$  (D)  $-\frac{1}{2} e^x \cot\left(\frac{x}{2}\right) + C$

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1299.  $\int \frac{2}{(e^x + e^{-x})^2} dx$  (a)  $\frac{e^{-x}}{e^x + e^{-x}} + C$  (b)  $-\frac{1}{e^x + e^{-x}} + C$  (c)  $\frac{-1}{(e^x + 1)^2} + C$  (d)  $\frac{1}{e^x - e^{-x}} + C$

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1300.  $\int \frac{e^x(1+x)}{\cos^2(xe^x)} dx =$  (a)  $2(\log)_e \cos(xe^x) + C$  (b)  $\sec(xe^x) + C$  (c)

$\tan(xe^x) + C$  (d)  $\tan(x + e^x) + C$

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1301. Evaluate  $\int \frac{\sin^2 x}{\cos^4 x} dx =$

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

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

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

(d) none

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1302. The primitive of the function  $f(x) = \left(1 - \frac{1}{x^2}\right) a^{x + \frac{1}{x}}$ ,  $a > 0$  is

(a)  $\frac{a^{x + \frac{1}{x}}}{(\log)_e a}$

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

(b)  $(\log)_e aa$

(c)  $\frac{a^{x+\frac{1}{x}}}{x} (\log)_e a$

(d)  $x \frac{a^{x+\frac{1}{x}}}{(\log)_e a}$



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1303. The value of  $\int \frac{1}{x + x \log x} dx$  is

(a)  $1 + \log x$

(b)  $x + \log x$

(c)  $x \log(1 + \log x)$

(d)  $\log(1 + \log x)$



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1304.  $\int \sqrt{\frac{x}{1-x}} dx$  is equal to

(a)  $\sin^{-1} \sqrt{x} + C$

(b)  $\sin^{-1}\{\sqrt{x} - \sqrt{x(1-x)}\} + C$

(c)  $\sin^{-1}\{\sqrt{x(1-x)}\} + C$

(d)  $\sin^{-1}\sqrt{x} - \sqrt{x(1-x)} + C$



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1305. Evaluate:  $\int e^x (f(x) + f'(x)) dx = e^x f(x) + C$



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1306. The value of  $\int \frac{\sin x + \cos x}{\sqrt{1 - \sin 2x}} dx$  is equal to

(a)  $\sqrt{\sin 2x} + C$

(b)  $\sqrt{\cos 2x} + C$

(c)  $\pm(\sin x - \cos x) + C$

(d)  $\pm \log(\sin x - \cos x) + C$



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1307. If  $\int x \sin x \, dx = -x \cos x + \alpha$ , then  $\alpha$  is equal to

- (a)  $\sin x + C$
- (b)  $\cos x + C$
- (c)  $C$
- (d) none of these



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1308.  $\int \frac{\cos 2x - 1}{\cos 2x + 1} \, dx =$

- (a)  $\tan x - x + C$
- (b)  $x + \tan x + C$
- (c)  $x - \tan x + C$
- (d)  $x - \cot x + C$



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1309.  $\int \frac{\cos 2x - \cos 2\theta}{\cos x - \cos \theta} dx$  is equal to

(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)  $2 (\sin x - 2x \cos \theta) + C$

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1310.  $\int \frac{x^9 dx}{(4x^2 + 1)^6}$  is equal to  $\rightarrow$

(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)  $\frac{1}{10} (1 + 4x^2)^{-5} + c$

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

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1311.  $\int \frac{x^3}{\sqrt{1+x^2}} dx = a(1+x^2)^{3/2} + b\sqrt{1+x^2} + C$ , then

(a)  $a = \frac{1}{3}$ ,  $b = 1$

(b)  $a = -\frac{1}{3}$ ,  $b = 1$

(c)  $a = -\frac{1}{3}$ ,  $b = -1$

(d)  $a = \frac{1}{3}$ ,  $b = -1$

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1312.  $\int \frac{x^3}{x+1} dx$  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)  $x - \frac{x^2}{2} + \frac{x^3}{3} - \log|1+x| + C$

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1313. If  $\int \frac{dx}{(x+2)(x^2+1)} = a \ln(1+x^2) + b \tan^{-1}x + \frac{1}{5} \ln|x+2| + C$  Then

$a = \frac{1}{10}, b = -\frac{2}{5}$  (b)  $a = \frac{1}{10}, b = -\frac{2}{5}$  (c)  $a = -\frac{1}{10}, b = \frac{2}{5}$  (d)  $a = \frac{1}{10}, b = \frac{2}{5}$

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1314. Evaluate:  $\int \frac{1}{\sqrt{x} + \sqrt{x+1}} dx$

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1315. Evaluate:  $\int \frac{1-x^4}{1-x} dx$

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1316. Evaluate:  $\int \frac{x+2}{(x+1)^3} dx$

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1317. Evaluate  $\int \left( \frac{8x + 13}{\sqrt{4x + 7}} \right) dx$

(A)  $\frac{1}{3}(4x + 7)^{\frac{3}{2}} - \frac{1}{2}(4x + 7)^{\frac{1}{2}} + c$

(B)  $\frac{1}{6}(4x + 7)^{\frac{5}{2}} - \frac{2}{3}(4x + 7)^{\frac{3}{2}} + c$

(C)  $\frac{1}{3}(4x + 7)^{\frac{5}{2}} - \frac{1}{2}(4x + 7)^{\frac{3}{2}} + c$

(D)  $(4x + 7)^{\frac{3}{2}} - \frac{1}{2}(4x + 7)^{\frac{1}{2}} + c$

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1318. Evaluate:  $\int \frac{1 + x + x^2}{x^2(1 + x)} dx$

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1319. Evaluate:  $\int \frac{(2^x + 3^x)^2}{6^x} dx$

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1320. Evaluate:  $\int \frac{\sin x}{1 + \sin x} dx$

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1321. Evaluate:  $\int \frac{x^4 + x^2 - 1}{x^2 + 1} dx$

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1322. Evaluate  $\int \sec^2 x \cos^2(2x) dx$

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1323. Evaluate:  $\int \sec^2 x \cos^2 2x dx$

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1324. Evaluate:  $\int \sin^4 2x dx$



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1325. Evaluate:  $\int \cos^3 3x \, dx$



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1326. Evaluate:  $\int \frac{\sin 2x}{a^2 \sin^2 x + b^2 \cos^2 x} dx$



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1327. Evaluate:  $\int \frac{1}{\sqrt{1-x^2} (\sin^{-1} x)^2} dx$



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1328. Evaluate:  $\int \frac{(\sin^{-1} x)^3}{\sqrt{1-x^2}} dx$



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1329. Evaluate:  $\int \frac{1}{e^x + 1} dx$

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1330. Evaluate the following integrals:  $\int \frac{e^x - 1}{e^x + 1} dx$

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1331. Evaluate:  $\int \frac{1}{e^x + e^{-x}} dx$

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1332. Evaluate:  $\int \frac{\cos^7 x}{\sin x} dx$

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1333. Evaluate:  $\int \sin x \sin 2x \sin 3x dx$

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1334. Evaluate:  $\int \cos x \cos 2x \cos 3x dx$

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1335.  $\int \left( \frac{\sin x + \cos x}{\sqrt{\sin 2x}} dx \right)$

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1336. Evaluate:  $\int \frac{\sin x - \cos x}{\sqrt{\sin 2x}} dx$

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1337. Evaluate:  $\int \frac{1}{\sin(x - a)\sin(x - b)} dx$

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1338. Find the indefinite integral  $\int \frac{1}{\cos(x - a)\cos(x - b)} dx$ .

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1339.  $\int \frac{\sin x}{\sqrt{1 + \sin x}} dx$

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1340. Evaluate:  $\int \frac{\sin x}{\cos 2x} dx$

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1341. Evaluate:  $\int \tan^3 x dx$

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1342. Evaluate:  $\int \tan^4 x dx$

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1343. Evaluate: (i)  $\int \tan^5 x dx$  (ii)  $\int \sqrt{\tan x} \sec^4 x dx$

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1344.  $\int \cot^4 x dx$

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1345. Evaluate :  $\int \cot^5 x dx$



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1346. Evaluate:  $\int \frac{x^2}{(x-1)^3} dx$



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1347. Evaluate:  $\int x \sqrt{2x+3} dx$



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1348. Evaluate:  $\int \frac{x^3}{(x^2+1)^3} dx$



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1349. Evaluate:  $\int x \sin^5 x^2 \cos x^2 dx$



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1350.  $\int \sin^3 x \cos^5 x \, dx$

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1351. Find:  $\int \sin^5 x \, dx$

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1352.  $\int \cos^5 x \, dx$

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1353.  $\int \sqrt{\sin x} \cos^3 x \, dx$

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1354.  $\int \frac{\sin 2x}{\sin^4 x + \cos^4 x} dx$

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1355. Evaluate:  $\int \frac{1}{\sqrt{x^2 - a^2}} dx$

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1356. Evaluate:  $\int \frac{1}{\sqrt{x^2 + a^2}} dx$

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1357. Evaluate: (i)  $\int \frac{1}{4x^2 - 4x + 3} dx$  (ii)  $\int \frac{1}{x^2 + 4x + 8}$  (iii)  $\int \frac{1}{9x^2 + 6x + 10}$

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1358. Evaluate:  $\int \frac{1}{x^2 + 4x - 5} dx$

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1359. Evaluate:  $\int \frac{1}{1 - x - 4x^2} dx$

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1360.  $\int \frac{1}{3x^2 + 13x - 10} dx$

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1361. Evaluate:  $\int \frac{\sin x}{\sqrt{\cos^2 x - 2\cos x - 3}} dx$

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1362. Evaluate:  $\int \sqrt{\operatorname{cosec} x - 1} dx$

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1363. Evaluate:  $\int \frac{1}{\sqrt{3 - 2x - x^2}} dx$

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1364. Evaluate:  $\int \frac{x + 1}{x^2 + 4x + 5} dx$

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1365. Evaluate:  $\int \frac{5x + 7}{\sqrt{(x - 5)(x - 4)}} dx$

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1366. Evaluate:  $\int \left( \frac{1+x}{x} \right) dx$

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1367. Evaluate:  $\int \left( \frac{1-x}{x} \right) dx$

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1368. Evaluate:  $\int \frac{\sqrt{a} - \sqrt{x}}{1 - \sqrt{ax}} dx$

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1369.  $\int \frac{dx}{(\sin x - 2\cos x)(2\sin x + \cos x)}$

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1370. Evaluate:  $\int \frac{1}{4\sin^2x + 4\sin x \cos x + 5\cos^2x} dx$

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1371. Evaluate:  $\int 15 dx$

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1372. Evaluate:  $\int \sin 2x dx$

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1373. Evaluate:  $\int \frac{2\cos x - \sin x}{2\sin x + \cos x} dx$

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1374. Evaluate:  $\int \frac{x^3}{\sqrt{x^4 + 4}} dx$



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1375. Evaluate:  $\int \frac{1}{2 - 3\cos 2x} dx$



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1376. Evaluate:  $\int \frac{\cos x}{\frac{1}{4} - \cos^2 x} dx$



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1377. Evaluate:  $\int \frac{\sin x}{1 + 2\cos x} dx$



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1378. Evaluate:  $\int \frac{\cos x}{1 - 2\sin x} dx$



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1379. Evaluate:  $\int \frac{1}{\sin x(2 + 3\cos x)} dx$

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1380. Evaluate:  $\int \frac{1}{\sin x + \sin 2x} dx$

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1381. Evaluate:  $\int \frac{1}{\sin^4 x + \cos^4 x} dx$

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1382. Evaluate:  $\int \frac{1}{5 - 4\sin x} dx$

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1383. Evaluate:  $\int \sec^4 x \, dx$



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1384. Evaluate:  $\int \operatorname{cosec}^4 2x \, dx$



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1385.  $\int \frac{1 + \sin x}{\sin x(1 + \cos x)} \, dx$



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1386. Evaluate:  $\int \frac{1}{2 + \cos x} \, dx$



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1387. Evaluate:  $\int \sqrt{\frac{a+x}{x}} dx$

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1388. Evaluate:  $\int \frac{6x+5}{\sqrt{6+x-2x^2}} dx$

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1389. Evaluate:  $\int \frac{\sin^5 x}{\cos^4 x} dx$

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1390. Evaluate:  $\int \frac{\cos^5 x}{\sin x} dx$

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1391. Evaluate:  $\int \frac{\sin^6 x}{\cos x} dx$

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1392. Evaluate:  $\int \frac{\sin^2 x}{\cos^6 x} dx$

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1393. Evaluate:  $\int \sec^6 x dx$

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1394. Evaluate:  $\int \tan^5 x \sec^3 x dx$

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1395. Evaluate:  $\int \tan^3 x \sec^4 x \, dx$



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1396. Evaluate:  $\int \frac{1}{\sec x + \operatorname{cosec} x} \, dx$



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1397. Evaluate:  $\int \sqrt{a^2 + x^2} \, dx$



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1398. Evaluate:  $\int \sqrt{x^2 - a^2} \, dx$



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1399. Evaluate:  $\int \sqrt{a^2 - x^2} \, dx$



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1400. Evaluate:  $\int \sqrt{3x^2 + 4x + 1} dx$



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1401. Evaluate:  $\int \sqrt{1 + 2x - 3x^2} dx$



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1402. Evaluate:  $\int x \sqrt{1 + x - x^2} dx$



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1403. Evaluate:  $\int (2x + 3) \sqrt{4x^2 + 5x + 6} dx$



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1404. Evaluate:  $\int (1 + x^2) \cos 2x \, dx$

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1405. Evaluate:  $\int (\log)_{10} x \, dx$

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1406. Evaluate:  $\int \left( \frac{\log(\log x)}{x} \right) dx$

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1407. Evaluate:  $\int x \sec^2 2x \, dx$

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1408. Evaluate:  $\int x \sin x \, dx$

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1409. Evaluate:  $\int (x + 1)^2 e^x \, dx$

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1410.  $\int \log \left( x + \sqrt{a^2 + x^2} \right) dx$

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1411. Evaluate:  $\int \frac{\log x}{x^3} \, dx$

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1412. Evaluate:  $\int \frac{\log(1-x)}{1-x} dx$

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1413. Evaluate:  $\int x^3 (\log x)^2 dx$

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1414. Evaluate:  $\int \frac{1}{x \sqrt{1+x^n}} dx$

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1415. Evaluate:  $\int \frac{x^2}{\sqrt{1-x}} dx$

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1416. Evaluate:  $\int \frac{x^5}{\sqrt{1+x^3}} dx$

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1417. Evaluate:  $\int \frac{1+x^2}{\sqrt{1-x^2}} dx$

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1418. Evaluate:  $\int x \sqrt{\frac{1-x}{1+x}} dx$

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1419. Evaluate:  $\int \frac{1}{x\sqrt{1+x^3}} dx$

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1420.  $\int \frac{\sin x \cos x}{\sin^4 x + \cos^4 x} dx$

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1421. Evaluate:  $\int x^2 \tan^{-1} x dx$

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1422. Evaluate:  $\int \tan^{-1} \sqrt{x} dx$

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1423. Evaluate:  $\int \sin^{-1} \sqrt{x} dx$

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1424.  $\int \sec^{-1} \sqrt{x} dx$

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1425. Evaluate:  $\int \tan^{-1} \sqrt{\frac{1-x}{1+x}} dx$

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1426.  $\int \sin^{-1} \sqrt{\frac{x}{a+x}} dx$

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1427.  $\int (\sin^{-1}(3x - 4x^3)) dx$

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1428. Evaluate:  $\int (\sin^{-1} x)^3 dx$

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1429.  $\int \cos^{-1}(1 - 2x^2) dx$

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1430.  $\int \frac{\sin^{-1}x}{(1-x^2)^{\frac{1}{2}}} dx$

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1431. Evaluate:  $\int e^{2x} \left( \frac{1 + \sin 2x}{1 + \cos 2x} \right) dx$

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1432. Evaluate:  $\int \frac{1 + \sin x}{\sqrt{x - \cos x}} dx$

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1433. Evaluate:  $\int e^x \frac{(1-x)^2}{(1+x^2)^2} dx$

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1434. Evaluate:  $\int \frac{\tan^{-1} x dx}{(1+x^2)^{\frac{1}{2}}}$

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1435. Evaluate:  $\int \frac{x^2}{(x-1)^3(x+1)} dx$

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1436. Evaluate:  $\int \frac{x}{x^2-1} dx$

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1437. Evaluate:  $\int \frac{1}{1+x+x^2+x^3} dx$

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1438. Evaluate:  $\int \frac{1}{(x^2+2)(x^2+5)} dx$

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1439. Evaluate:  $\int \frac{x^2-2}{x^5-x} dx$

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1440. Evaluate:  $\int \sqrt{\frac{1-\sqrt{x}}{1+\sqrt{x}}} dx$

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1441. Evaluate:  $\int \frac{x^2 + x + 1}{(x + 1)^2(x + 2)} dx$

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1442. Evaluate:  $\int e^x \left( \frac{\sin 4x - 4}{1 - \cos 4x} \right) dx$

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1443.  $\int \frac{\cot x + \cot^3 x}{1 + \cot^3 x} dx$

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