11. Határozatlan integrál (primitív függvény)

Számítsa ki a következő határozatlan integrálokat!

1. $\int (x^2 + 4) \cdot e^{2x} \, dx$

2. $\int \lg x \, dx$

3. $\int (x^2 + x + 1) \cdot \log_3 x \, dx$

4. $\int \cos 3x \cdot \text{sh}\, x \, dx$

5. $\int \cos x^3 \cdot 3x^2 \, dx$

6. $\int \dfrac{e^x}{e^{2x} + 10} \, dx$

7. $\int \dfrac{1}{x \cdot \sqrt[3]{\ln x}} \, dx$

8. $\int \left(3 - \dfrac{x}{5}\right)^{10} \, dx$

9. $\int \dfrac{e^{\frac{x}{2}}}{3e^{\frac{x}{2}} + 10} \, dx$

10. $\int \arccos x \, dx$

11. $\int (x - 1)^2 \cdot \cos \dfrac{x}{3} \, dx$

12. $\int \dfrac{e^{2x} + 4e^x + 2}{e^{3x} - e^{2x}}$

13. $\int \dfrac{x^2}{\sqrt[5]{x^3 + 10}} \, dx$

14. $\int \left(8 - \dfrac{x}{3}\right)^6 \, dx$

15. $\int \dfrac{e^{\frac{x}{3}}}{3 + 5e^{\frac{x}{3}}} \, dx$

16. $\int \arcsin x \, dx$

17. $\int (x + 3)^2 \cdot \sin \dfrac{x}{5} \, dx$

18. $\int \dfrac{e^{2x} + 2e^x + 4}{e^x (e^{2x} - 2e^x)} \, dx$

19. $\int \dfrac{1}{\sqrt{(3 + 3x)(3 - 3x)}} \, dx$

20. $\int \dfrac{1}{1 + \text{ch}\, 4x} \, dx$

21. $\int \dfrac{\cos \sqrt{x}}{\sqrt{x}} \, dx$

22. $\int 10^x \cdot e^x \, dx$

23. $\int x \cdot e^{5 - 2x^2} \, dx$

24. $\int \dfrac{e^{5x}}{e^{5x} - 6} \, dx$

25. $\int \text{ch}^5 x \, dx$

26. $\int (x^3 + 2x^2) \cos 2x \, dx$

27. $\int \dfrac{1}{\sqrt{(2 + 2x)(2 - 2x)}} \, dx$

28. $\int \dfrac{1}{1 + \text{ch}\, 6x} \, dx$

29. $\int \dfrac{\sin \sqrt{x}}{\sqrt{x}} \, dx$

30. $\int \dfrac{e^x}{5^x} \, dx$

31. $\int x \cdot e^{8 - 3x^2} \, dx$

32. $\int \dfrac{\cos x}{\sqrt[4]{5 \sin x + 4}} \, dx$

33. $\int \left(2 - \dfrac{x}{9}\right)^7 dx$

34. $\int \dfrac{e^{\frac{x}{4}}}{2e^{\frac{x}{4}} + 5} \, dx$

35. $\int \text{arctg}\, x \, dx$

36. $\int (x - 2)^2 \cdot \cos \dfrac{x}{2} \, dx$

37. $\int \dfrac{e^{2x} - 2e^x + 6}{e^{3x} + 4e^{2x}} \, dx$

38. $\int \dfrac{2x^3 - x^2 + 4x + 4}{x^4 + 2x^3} \, dx$

39. $\int \sin^3(4x) \, dx$

40. $\int \dfrac{e^{3x}}{e^{3x} + 2} \, dx$

41. $\int \operatorname{sh}^5 x \, dx$

42. $\int \sqrt{\dfrac{2}{(5x + 4)^3}} \, dx$

43. $\int \dfrac{2x + 1}{(2x - 5)(x^2 + 7x + 12)} \, dx$

44. $\int x^4 \cdot 2^{x^5} \, dx$

45. $\int \dfrac{\sqrt[4]{2 - \ln x}}{x} \, dx$

46. $\int x \cdot \sin(3x - 1) \, dx$

47. $\int \operatorname{sh} \dfrac{x}{2} \cdot \operatorname{ch}^5 \dfrac{x}{2} \, dx$

48. $\int x^5 \cdot \operatorname{arctg} x \, dx$

49. $\int (x - 3)^2 \cdot \lg 2x \, dx$

50. $\int 3^x \cdot \cos 2x \, dx$

51. $\int \sqrt[3]{\dfrac{5}{(2x + 3)^2}} \, dx$

52. $\int \dfrac{4 - 3x^2}{(x - 1)(x^2 - 5x + 6)} \, dx$

53. $\int x^3 \cdot 3^{x^4} \, dx$

54. $\int x \cdot \operatorname{ch}^2\left(\dfrac{3x}{4}\right) dx$

55. $\int \sin^5 6x \cdot \cos^7 6x \, dx$

56. $\int \dfrac{1}{3x - \sqrt{5x}} \, dx$

57. $\int 2^x \cdot \sin 3x \, dx$

58. $\int \dfrac{4x^2}{\sin^2(x^3 + 10)} \, dx$

59. $\int \dfrac{1}{5x^2 + 10} \, dx$

60. $\int \dfrac{\ln(3x + 7)}{3} \, dx$

61. $\int \dfrac{-x^2}{\cos^2(x^3 - 8)} \, dx$

62. $\int \dfrac{1}{3x^2 + 6} \, dx$

63. $\int \dfrac{\ln(2x - 1)}{2} \, dx$

64. $\int \operatorname{ctg} x \, dx$

65. $\int e^{x-1} \cdot 3^{x+3} \, dx$

66. $\int \dfrac{\sqrt{2 - \ln x}}{x} \, dx$

67. $\int \dfrac{1}{\sqrt{x^2 + 6x + 10}} \, dx$

68. $\int (\operatorname{tg} x + \operatorname{ctg} x)^2 \, dx$

69. $\int \dfrac{(x^2 - 2x)^3}{x^4} \, dx$

70. $\int x^2 \cdot e^2 \, dx$

71. $\int \ln \dfrac{1}{x} \, dx$

72. $\int (1 - \operatorname{ctg}^2 x) \, dx$

73. $\int \dfrac{(x + 2)^3 + 2x^4}{x^4} \, dx$

74. $\int 4^{-x} \cdot 3^x \, dx$

75. $\int \dfrac{1}{\sin^2 x - 1} \, dx$

76. $\int (1 + \operatorname{tg}^2 x) \, dx$

77. $\int \dfrac{(1 - x)^3 + x^3}{x^2} \, dx$

78. $\int 2^{3x} \cdot 5^x \, dx$

79. $\int \dfrac{1}{\cos^2 x - 1} \, dx$

80. $\int \dfrac{2}{(1 - x)^3} \, dx$

81. $\int e^x \cdot \cos 3x \, dx$

82. $\int \dfrac{\sqrt{x+1}}{x+2} \, dx$

83. $\int \operatorname{sh}^7 x \, dx$

84. $\int \left(\dfrac{x-1}{x^2-2x+5} - \dfrac{x}{1-x^2} \right) dx$

85. $\int \operatorname{ch}^2 \dfrac{x}{3} \, dx$

86. $\int x\sqrt{x^2+1} \, dx$

87. $\int \dfrac{1}{(2-x)^4} \, dx$

88. $\int e^x \cdot \sin 3x \, dx$

89. $\int \dfrac{\sqrt{x+2}}{x+3} \, dx$

90. $\int \operatorname{ch}^7 x \, dx$

91. $\int \left(\dfrac{x+1}{x^2+2x-3} - \dfrac{x}{1+x^2} \right) dx$

92. $\int \operatorname{sh}^2 \dfrac{x}{5} \, dx$

93. $\int x\sqrt{x^2-1} \, dx$

94. $\int \dfrac{1}{(4-3x)^4} \, dx$

95. $\int \dfrac{x+\sqrt[3]{x}}{x^2} \, dx$

96. $\int x \cdot 2^x \, dx$

97. $\int e^{1-2x} \, dx$

98. $\int \dfrac{1}{x \cdot \log_4 x} \, dx$

99. $\int \dfrac{\sin 2x}{\sqrt{4-\sin^2 x}} \, dx$

100. $\int \dfrac{1}{(3-4x)^5} \, dx$

101. $\int \arccos x \, dx$

102. $\int e^{-x-1} \, dx$

103. $\int \dfrac{1}{x \cdot \log_3 x} \, dx$

104. $\int \dfrac{\sin 2x}{(1-\sin^2 x)^5} \, dx$

105. $\int \dfrac{x^2}{\sqrt[3]{4-6x^3}} \, dx$

106. $\int \dfrac{1}{(3x+5)^2 + 2(3x+5) + 1} \, dx$

107. $\int \dfrac{x^2}{\sqrt[4]{3-6x^3}} \, dx$

108. $\int \dfrac{1}{(3x-5)^2 - 2(3x-5) + 1} \, dx$

109. $\int \dfrac{\operatorname{sh}2x}{2} \cdot \left(1+\operatorname{ch}^2 x\right)^2 dx$

110. $\int \dfrac{\operatorname{sh}2x}{3} \cdot (1+\operatorname{ch}^2 x)^3 \, dx$

111. $\int \dfrac{2x^2-1}{x^3-x^2} \, dx$

112. $\int \dfrac{2x^2+2x+1}{x^3+x^2} \, dx$

113. $\int \dfrac{1}{\cos^2 x \cdot \operatorname{tg}^2 x} \, dx$

114. $\int \sqrt{\operatorname{ch}^2 x - 1} \, dx$

115. $\int \left(6x^2 - 2x + 1\right) dx$

116. $\int \left(\dfrac{1}{4x-3} \right)^5 dx$

117. $\int \dfrac{\sin 2x}{1+\sin^2 x} \, dx$

118. $\int x \cdot \sin x \, dx$

119. $\int \dfrac{2x+8}{x^2+4x+3} \, dx$

120. $\int \dfrac{2x^3 - x^2 + 4x + 4}{x^4 + 2x^3} \, dx$

121. $\int \sin^3 4x \, dx$

122. $\int \operatorname{tg} \dfrac{x}{2} \, dx$

123. $\int \dfrac{x-1}{x^3-3x^2+2x}\,dx$

124. $\int \operatorname{ctg}\dfrac{x}{3}\,dx$

125. $\int \dfrac{2-x}{x^3-3x^2+2x}\,dx$

126. $\int x^2 \cdot \cos 3x\,dx$

127. $\int \dfrac{x}{\sqrt[3]{1+2x^2}}\,dx$

128. $\int \cos^6 x \cdot \sin x\,dx$

129. $\int 4e^{\sqrt{\frac{x}{2}}}\,dx$

130. $\int 2e^{\sqrt{\frac{x}{3}}}\,dx$

131. $\int \dfrac{2x^3}{x^2+4}\,dx$

132. $\int \dfrac{e^{2x}+2e^x}{e^x+4}\,dx$

133. $\int \dfrac{\cos\dfrac{x}{2}}{\left(1-\sin\dfrac{x}{2}\right)^4}\,dx$

134. $\int \dfrac{\sin\dfrac{x}{3}}{\left(1+\cos\dfrac{x}{3}\right)^3}\,dx$

135. $\int \sqrt{1-\dfrac{x}{2}}\,dx$

136. $\int \sqrt{3-\dfrac{x}{4}}\,dx$

137. $\int \dfrac{e^{2x}-2e^x}{e^x+3}\,dx$

138. $\int \dfrac{3x^3}{x^2+5}\,dx$