

Analiza matematyczna; Zestaw 1

Proszę znaleźć następujące całki:

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| <p>Proste całki:</p> <ol style="list-style-type: none"> 1. $\int x^3 + x^2 dx$ 2. $\int 3x^5 dx$ 3. $\int 5x^2 + \frac{7}{x^2} dx$ 4. $\int 4x\sqrt{x} + 2x^3 dx$ 5. $\int 2x^2 + \frac{3\sqrt[3]{x}}{x^2} dx$ 6. $\int 7x^2\sqrt{x} - \frac{3x\sqrt[4]{x}}{x^2} dx$ 7. $\int \frac{2x + 5x^3}{x^2} dx$ 8. $\int \frac{3\sqrt{x} - 7x^5}{x^2} dx$ 9. $\int \frac{(x+2)^2}{x} dx$ 10. $\int \frac{(x-3)^2}{x^2} dx$ 11. $\int \frac{3}{x} + \frac{5}{x^2} dx$ 12. $\int 5 \sin x - 3 \cos x dx$ 13. $\int 4e^x - 5 \cdot 2^x dx$ 14. $\int 5 \cdot 2^{x+1} dx$ 15. $\int 3 \cdot 5^{2x-1} dx$ 16. $\int \frac{5}{x^2+1} dx$ 17. $\int \frac{x^2}{x^2+1} dx$ | <p>Całki przez podstawienie:</p> <ol style="list-style-type: none"> 18. $\int \frac{3x^2 - 2}{x^2 + 1} dx$ 19. $\int \sin(3x + 1) dx$ 20. $\int \frac{1}{2x - 5} dx$ 21. $\int \frac{1}{(5x + 1)^3} dx$ 22. $\int \cos(4x - 3) dx$ 23. $\int x \sin(x^2 + 1) dx$ 24. $\int x^2 \cos(x^3 - 2) dx$ 25. $\int x^2 \sqrt{2x^3 + 1} dx$ 26. $\int \sqrt{x^4 + x^2} dx$ 27. $\int \sin x \sin(\cos x) dx$ 28. $\int \sin x \cos x dx$ 29. $\int \sin^2 x \cos x dx$ 30. $\int \sin x \cos^2 x dx$ 31. $\int \operatorname{tg} x dx$ 32. $\int \frac{\ln^3 x}{x} dx$ 33. $\int \frac{\ln x^3}{x} dx$ 34. $\int x e^{-x^2} dx$ | <ol style="list-style-type: none"> 35. $\int \frac{x}{x^2 + 1} dx$ 36. $\int \frac{x}{x^4 + 1} dx$ 37. $\int \frac{x^2}{x^3 + 1} dx$ 38. $\int \frac{1}{x^2 + 2x + 2} dx$ 39. $\int \frac{1}{x^2 + 3} dx$ 40. $\int \frac{1}{x^2 + 2x + 3} dx$ 41. $\int \frac{x}{x^2 + 1} dx$ 42. $\int \frac{3x + 2}{x^2 + 1} dx$ 43. $\int \frac{1}{x(x-2)} dx$ 44. $\int \frac{1}{x^2 - 1} dx$ 45. $\int \frac{1}{(x-1)(x-2)} dx$ 46. $\int \frac{1}{x(x^2 + 1)} dx$ 47. $\int \frac{x + 1}{x(x-2)} dx$ 48. $\int \frac{x}{x^2 - 1} dx$ 49. $\int \frac{x}{(x-1)(x-2)} dx$ 50. $\int \frac{x^2 + 1}{x(x-2)} dx$ 51. $\int \frac{x^2}{x^2 - 1} dx$ |
| | | <ol style="list-style-type: none"> 52. $\int \frac{x^2}{(x-1)(x-2)} dx$ 53. $\int \frac{x^2 + 1}{x(x^2 + 1)} dx$ <p>Całki przez części:</p> <ol style="list-style-type: none"> 54. $\int x \sin x dx$ 55. $\int x e^x dx$ 56. $\int x^2 \cos x dx$ 57. $\int \ln x dx$ 58. $\int x \ln x dx$ 59. $\int \sin^2 x dx$ 60. $\int \sin x \cos x dx$ 61. $\int \sin x e^x dx$ <p>Całki różne:</p> <ol style="list-style-type: none"> 62. $\int \frac{\sin^3 x + \cos^3 x}{\sin^2 x \cos^2 x} dx$ 63. $\int \frac{\ln x}{x^2} dx$ 64. $\int \sin^3 x dx$ 65. $\int \sin^4 x dx$ 66. $\int x^3 e^{x^2} dx$ 67. $\int x^5 \sin x^3 dx$ 68. $\int x \sin^2 x dx$ |