

Integrály*

1. $\int x^{-3/4}(x^{1/4} + 1)dx$
 2. $\int (4 - \sqrt{x})^2 dx$
 3. $\int \sin(3x)dx$
 4. $\int (\sqrt{3} \sin x + \cos(2x))dx$
 5. $\int_{-1}^1 2x(x^2 + 1)dx$
 6. $\int_{-2}^1 \frac{x}{\sqrt{x^2 + 1}} dx$
 7. $\int_1^{\sqrt{2}} (x^2 - 1)^7 dx$
 8. $\int x \cos(\pi x^2) dx$
 9. $\int 3x^2(x^3 + 1)dx$
 10. $\int_0^1 3x^2(x^3 + 1)dx$
 11. $\int_{-1}^1 y(y + 1)^{12} dy$
 12. $\int \cos^4 x \sin x dx$
 13. $\int_0^{2\pi} \cos^2 x dx$
 14. $\int x^{-1/2} \cos(x^{1/2}) dx$
 15. $\int \frac{x^2}{1 + x^2} dx$
 16. $\int \frac{\sqrt{x} - 2\sqrt[3]{x^2} + 1}{\sqrt[4]{x}} dx$
 17. $\int (2^x + 3^x) dx$
 18. Pozor na spojitost primitivní funkce
 - (a) $\int \max\{3, 2x^4\} dx$
 - (b) $\int \min\{x^3, x\} dx$
 - (c) $\int \sqrt{1 - \sin^2 x} dx$
 19. $\int \coth^2 x dx$
 20. $\int \cot^2 x dx$
 21. $\int x(1 - x^2)^6 dx$
 22. $\int \sin^5 x \cos x dx$
 23. $\int x e^{-x^2} dx$
 24. $\int \frac{dx}{e^x + e^{-x}}$
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- *kontrola=derivace

$$25. \int \frac{dx}{x(\ln x + 3)}$$

$$26. \int \frac{\arctan x}{x^2 + 1} dx$$

$$27. \int \frac{2^x 3^x}{9^x + 4^x} dx^1$$

$$28. \int \frac{\sin x \cos x}{\sqrt{a^2 \sin^2 x - b^2 \cos^2 x}} dx^2$$

$$29. \int \cos^4 x dx^3$$

$$30. \int \cos^3 x dx^4$$

$$31. \int \sin^6 x dx$$

32. Per partes

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

$$(b) \int \sqrt{x} \ln x dx$$

$$(c) \int \arctan x dx$$

$$(d) \int x \arctan x dx$$

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

$$33. \int \frac{dx}{\sqrt{1-3x^2}}$$

$$34. \int \frac{dx}{\sqrt{7+x-x^2}}$$

$$35. \int \frac{5x+1}{\sqrt{3-x^2}} dx$$

$$36. \int_0^{\sqrt{3}} \frac{2x^2+1}{\sqrt{3-x^2}} dx$$

37. Per partes

$$(a) \int_{-1}^1 \sqrt{1-3x^2} dx$$

$$(b) \int \sqrt{5+x-x^2} dx$$

$$38. \int_1^2 \frac{6x^2-2}{x^3-x+1} dx$$

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

$$40. \int \tan x dx$$

$$41. \int \frac{\ln^2 x}{x^2} dx$$

$$42. \int \frac{\ln \sin x}{\sin^2 x} dx$$

$$43. \int \frac{x}{\sqrt{1-x^2}} dx$$

$$44. \int \cos^5 x \sqrt{\sin x} dx$$

$$45. \int_0^{\pi} \cos^4 x dx$$

$$46. \int_0^{2\pi} \sin^3 x \cos x dx$$

$$47. \int_0^{3/2\pi} \cos^2 x dx$$

$$48. \int_3^8 \frac{\ln x}{x} dx$$

$$49. \int_0^{\ln 2} e^x dx$$

¹Podélte čítateľ i jmenovateľ 4^x

² $a^2 \sin^2 x - b^2 \cos^2 x = \sin^2 x (a^2 - b^2) + b^2$

³ $\cos^4 x = \left(\frac{1+\cos(2x)}{2}\right)^2$

⁴ $\cos^3 x = \cos^2 x \sin x$

$$50. \int_0^1 e^x (e^x + 1)^{1/5} dx$$

$$51. \int_{\pi/4}^{3/4\pi} \cot x dx$$

$$52. \int_0^{\pi/8} \frac{1}{\cos(2x)} dx$$

$$53. \int \frac{\cos 3x}{2 + \sin 3x} dx$$