

1. Integralni račun

Riješite neodređene integrale:

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

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

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

$$4. \int \frac{2^x + 5^x}{10^x} \, dx$$

$$5. \int \frac{2^{x+1} - 5^{x-1}}{10^x} \, dx$$

$$6. \int \frac{1}{\sin^2 x \cos^2 x} \, dx$$

$$7. \int \tan^2 x \, dx$$

$$8. \int \sin 3x \, dx$$

$$9. \int \frac{dx}{x^2 + a^2}$$

$$10. \int \frac{dx}{\sqrt{a^2 - x^2}}$$

$$11. \int e^{3 \cos x} \sin x \, dx$$

$$12. \int \frac{(\ln x)^4}{x} \, dx$$

$$13. \int x \sqrt{1 + x^2} \, dx$$

14. $\int \frac{dx}{x-a}$
15. $\int \frac{dx}{1+e^x}$
16. $\int \frac{dx}{x\sqrt{2x-9}}$
17. $\int \frac{x^2}{\sqrt[3]{5+x^3}} dx$
18. $\int \frac{\sin \sqrt[3]{x}}{\sqrt[3]{x^2}} dx$
19. $\int \frac{\sqrt{x} + \ln x}{x} dx$
20. $\int \frac{e^{2x}}{1-3e^{2x}} dx$
21. $\int \frac{\cos x}{1+2\sin x} dx$
22. $\int \frac{\cos 2x}{\sin x \cos x} dx$
23. $\int \sin^2 x dx$
24. $\int \cos^2 x dx$
25. $\int \cos^5 x \sqrt{\sin x} dx$
26. $\int \frac{e^{\arctan x} + x \ln(1+x^2) + 1}{1+x^2} dx$
27. $\int x e^x dx$

$$28. \int x^2 e^x dx$$

$$29. \int (x^2 + 2x + 3)e^x dx$$

$$30. \int \ln x dx$$

$$31. \int \sqrt{x} \ln^2 x dx$$

$$32. \int \frac{\ln x}{x^3} dx$$

$$33. \int x \ln \frac{1+x}{1-x} dx$$

$$34. \int \frac{x^3}{\sqrt{1+x^2}} dx$$

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

$$36. \int x^2 \arccos x dx$$

$$37. \int e^x \sin x dx$$

$$38. \int \frac{dx}{(x^2 + a^2)^2}$$

$$39. \int \cos(\ln x) dx$$

$$40. \int \frac{\arcsin \sqrt{x}}{\sqrt{1-x}} dx$$

$$41. \int e^{2x} \sin(e^x) dx$$