

## ZADANIA Z CAŁEK NIEOZNACZONYCH

Oblicz całki:

$$1. \int \left( x^3 - \sqrt[3]{x^5} + \frac{1}{x} \right) dx,$$

$$2. \int \frac{x^3 + \sqrt{x} - \sqrt[3]{x^4}}{\sqrt[5]{x}} dx,$$

$$3. \int \frac{2t^3 - 3t\sqrt[3]{x} + 5t^5\sqrt{t^2}}{t\sqrt{t}} dt,$$

$$4. \int \frac{1}{\sqrt[5]{2kx}} dx,$$

$$5. \int \frac{\sqrt{x} - 2\sqrt[3]{x^2} + 4\sqrt[4]{5x^3}}{6\sqrt[3]{x}} dx,$$

$$6. \int \frac{(x^2 - 1)^2}{x} dx,$$

$$7. \int \frac{(x^2 - 1)^3}{x^2} dx,$$

$$8. \int (3 + 2\sqrt[4]{x})^3 dx,$$

$$9. \int \left( \sin x + \frac{1}{\cos^2 x} + \frac{4}{\sqrt{1-x^2}} - \frac{5}{x} \right) dx$$

$$10. \int \left( b^x \ln b - \frac{b \cdot a^x - a \cdot b^x}{a^x} \right) dx,$$

$$11. \int \operatorname{ctg}^2 x dx,$$

$$12. \int \frac{4-x}{2+\sqrt{x}} dx,$$

$$13. \int \frac{8-x^3}{2-x} dx,$$

$$14. \int \frac{x^3 + 27}{x+3} dx,$$

$$15. \int \frac{1-x^2}{1+x} dx,$$

$$16. \int \frac{(1+x)^2}{x(1+x^2)} dx,$$

$$17. \int \frac{\sin^3 x + \cos^3 x}{\sin^2 x - \sin x \cos x + \cos^2 x} dx$$

$$18. \int \frac{\cos 2x}{\sin^2 x \cos^2 x} dx,$$

$$19. \int \frac{\sin 2x}{\cos x} dx,$$

$$20. \int \frac{\cos 2x}{\sin x - \cos x} dx.$$

## CAŁKOWANIE PRZEZ PODSTAWIENIE

$$1. \int \frac{1}{\sin^2(7x+2)} dx,$$

$$2. \int \frac{1}{\sqrt[5]{2x+7}} dx,$$

$$3. \int \frac{1}{\sqrt{3x-8}} dx,$$

$$4. \int \frac{x}{\sqrt{3x-8}} dx,$$

$$5. \int (2x+8)^9 dx,$$

$$6. \int \frac{1}{\sqrt{1-9x^2}} dx,$$

$$7. \int \frac{1}{\sqrt{9-x^2}} dx,$$

$$8. \int \frac{x}{\sqrt{1-9x^2}} dx,$$

$$9. \int \frac{x}{\sqrt{9-x^2}} dx,$$

$$10. \int \frac{1}{1+4x^2} dx,$$

$$11. \int \frac{x}{1+4x^2} dx$$

$$12. \int \frac{5x}{1+x^4} dx,$$

$$13. \int x e^{x^2} dx,$$

$$14. \int x^3 (2x^4 + 8)^{19} dx,$$

$$15. \int x \sqrt{x^2 + 9} dx,$$

$$16. \int x^3 \sqrt{x^2 + 9} dx,$$

$$17. \int x^7 \sqrt[5]{x^4 - 5} dx,$$

$$18. \int e^{x^4} \sqrt{e^x + 2} dx,$$

$$19. \int \frac{\ln^3 x}{x} dx,$$

$$20. \int \frac{\arcsin^{11} x}{\sqrt{1-x^2}} dx,$$

$$21. \int \frac{1}{\operatorname{tg}^3 x \cos^2 x} dx,$$

$$22. \int \frac{\sqrt[4]{\operatorname{arctg} x}}{1+x^2} dx,$$

$$23. \int \frac{\cos x}{1+4 \sin^2 x} dx,$$

$$24. \int \frac{2^x}{1+4^x} dx,$$

$$25. \int \frac{e^x}{\sqrt{1-3e^{2x}}} dx,$$

$$26. \int x^2 e^{x^3} dx,$$

$$27. \int \frac{e^{\frac{1}{x}}}{x^2} dx,$$

$$28. \int \frac{\cos \sqrt{x}}{\sqrt{x}} dx,$$

$$29. \int \frac{e^x}{\sqrt[5]{e^x - 88}} dx,$$

$$30. \int \frac{\operatorname{tg} x}{(1+\operatorname{tg}^4 x) \cos^2 x} dx,$$

$$31. \int \frac{\cos x}{\sqrt{8 \sin x - 1}} dx,$$

$$32. \int \frac{x}{4+3x^2} dx,$$

$$33. \int \frac{2x+5}{x^2+5x-8} dx,$$

$$34. \int \frac{e^x}{4+3e^x} dx,$$

$$35. \int \frac{1}{x(3 \ln x + 5)} dx,$$

$$36. \int \operatorname{ctg} x dx,$$

$$37. \int \frac{\operatorname{ctg} x}{\ln(\sin x)} dx,$$

$$38. \int \frac{x}{\sqrt{x+1}} dx.$$

## CAŁKOWANIE PRZEZ CZĘŚCI

$$1. \int x \cos 5x dx,$$

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

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

$$4. \int x^2 5^x dx,$$

$$5. \int \ln x dx,$$

$$6. \int \arcsin 3x dx,$$

7.  $\int \arctg x dx,$
8.  $\int \sin(\ln x) dx,$
9.  $\int \cos(\ln x) dx,$
10.  $\int x \arctg x dx$
11.  $\int \frac{x}{\sin^2 x} dx,$
12.  $\int \frac{x}{\sinh^2 x} dx$
13.  $\int \frac{x \sin x}{\cos^3 x} dx,$
14.  $\int \frac{x \cos x}{\sin^3 x} dx,$
15.  $\int \ln^2 x dx,$
16.  $\int \frac{\ln^2 x}{x^2} dx,$
17.  $\int \frac{\ln^2 x}{\sqrt[4]{x}} dx,$
18.  $\int \frac{\ln(\arctg x)}{1+x^2} dx,$
19.  $\int \frac{\ln(\sin x)}{\sin^2 x} dx,$
20.  $\int \frac{\ln(\cos x)}{\cos^2 x} dx,$
21.  $\int \cos \sqrt{x} dx,$
22.  $\int \sin \sqrt{x} dx,$
23.  $\int \sin^2 x dx,$
24.  $\int x^3 e^{x^2} dx,$
25.  $\int x^3 e^{-x^2} dx,$
26.  $\int x \operatorname{tg}^2 x dx,$
27.  $\int \sqrt{a^2 - x^2} dx,$
28.  $\int \frac{x}{\sqrt{x+1}} dx,$
29.  $\int \frac{x}{\sqrt{3x-8}} dx.$

## CAŁKOWANIE FUNKCJI WYMIERNYCH

1.  $\int \frac{x}{(x+1)(x+2)(x-3)} dx,$
2.  $\int \frac{1}{1-x^2} dx,$
3.  $\int \frac{1}{(x-1)^3 x^2} dx,$
4.  $\int \frac{x^5+1}{x^3-1} dx,$
5.  $\int \frac{x^5+2}{x^3-1} dx,$
6.  $\int \frac{5x^2-3}{(x-2)(3x^2+2x-1)} dx,$
7.  $\int \frac{x^4}{(x^2-1)(x+2)} dx,$
8.  $\int \frac{x^2}{(x-2)^3(x+1)} dx,$
9.  $\int \frac{x^2-6x+5}{x^2+6x+5} dx,$
10.  $\int \frac{x+7}{x^2+1} dx,$
11.  $\int \frac{x+5}{4x^2+x+7} dx,$
12.  $\int \frac{x-1}{x^2-4} dx,$
13.  $\int \frac{x^3+1}{x^2-4} dx,$

$$14. \int \frac{x^3 + 1}{x^2 + 4} dx,$$

$$15. \int \frac{x+1}{x^2 + 9} dx,$$

$$16. \int \frac{4}{x^2 - 2x - 3} dx,$$

$$17. \int \frac{x^4 + 6x^3 + 10x^2 + x}{x^2 + 6x + 10} dx,$$

$$18. \int \frac{x+1}{(x^2+1)^3} dx.$$

## CAŁKOWANIE FUNKCJI TRYGONOMETRYCZNYCH

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

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

$$3. \int \frac{\cos^3 x}{\sin^2 x} dx,$$

$$4. \int \sin^9 x dx,$$

$$5. \int \cos^6 x dx,$$

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

$$7. \int \sin^3 x \cos^3 x dx,$$

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## CAŁKI RÓŻNE

$$1. \int x \sin^2 x dx,$$

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

$$3. \int \sqrt{e^x + 1} dx,$$

$$4. \int e^{-\sqrt{x}} dx,$$

$$5. \int x e^{\sqrt[3]{x}} dx,$$

$$6. \int x^2 \arctg x dx,$$

$$7. \int \ln(x^2 + 1) dx,$$

$$8. \int \frac{x \arcsin x}{\sqrt{1 - x^2}} dx,$$

$$9. \int \frac{\sin^3 x}{\sqrt[5]{\cos^3 x}} dx,$$

$$10. \int \frac{e^{2x}}{\sqrt[4]{e^x + 1}} dx,$$

$$11. \int \frac{\sqrt{1+x}}{x} dx,$$

$$12. \int \frac{\ln(x+1)}{\sqrt{1+x}} dx,$$

$$13. \int \frac{1 + \sqrt{x}}{1 - \sqrt{x}} dx,$$

$$14. \int \frac{e^x - 1}{e^x + 1} dx,$$

$$15. \int \frac{x \ln(1 + \sqrt{1 + x^2})}{\sqrt{1 + x^2}} dx,$$

$$16. \int \frac{\ln(x+1)}{x^2} dx.$$