

ТЕМА НЕВИЗНАЧЕНИЙ ІНТЕГРАЛ

ІЗ – 2.24

Знайти невизначені інтеграли

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| <p>1. $\int \sqrt[3]{5-2x} dx$</p> <p>$\int \frac{dx}{3x-2}$</p> <p>$\int \sin(3-2x) dx$</p> <p>$\int \frac{dx}{5x^2-3}$</p> | <p>7. $\int \sqrt[4]{1+3x} dx$</p> <p>$\int \frac{dx}{3x-4}$</p> <p>$\int \sin(4-2x) dx$</p> <p>$\int \frac{dx}{\sqrt{3-5x^2}}$</p> | <p>13. $\int \sqrt[3]{4-2x} dx$</p> <p>$\int \frac{dx}{2x+3}$</p> <p>$\int \sin(5-3x) dx$</p> <p>$\int \frac{dx}{\sqrt{4x^2-3}}$</p> | <p>19. $\int \sqrt[4]{(3+5x)^3} dx$</p> <p>$\int \frac{dx}{2x+9}$</p> <p>$\int \cos(3+2x) dx$</p> <p>$\int \frac{dx}{3x^2-2}$</p> | <p>25. $\int \sqrt[3]{(2-x)^2} dx$</p> <p>$\int \frac{dx}{7x-3}$</p> <p>$\int \cos(3x+5) dx$</p> <p>$\int \frac{dx}{2x^2+7}$</p> |
| <p>2. $\int \sqrt{5-7x} dx$</p> <p>$\int \frac{dx}{2x+7}$</p> <p>$\int \cos(4x+3) dx$</p> <p>$\int \frac{xdx}{\sqrt{3x^2+1}}$</p> | <p>8. $\int \sqrt[3]{(1+x)^2} dx$</p> <p>$\int \frac{dx}{6x+1}$</p> <p>$\int \cos(3-4x) dx$</p> <p>$\int \frac{xdx}{\sqrt{9-8x^2}}$</p> | <p>14. $\int \sqrt[5]{(6-5x)^2} dx$</p> <p>$\int \frac{dx}{5+4x}$</p> <p>$\int \cos(5-2x) dx$</p> <p>$\int \frac{xdx}{4x^2-3}$</p> | <p>20. $\int \sqrt{3-4x} dx$</p> <p>$\int \frac{dx}{6-3x}$</p> <p>$\int \sin(2-3x) dx$</p> <p>$\int \frac{dx}{\sqrt{3-4x^2}}$</p> | <p>26. $\int \sqrt[5]{3+2x} dx$</p> <p>$\int \frac{dx}{2-5x}$</p> <p>$\int \sin(8x-3) dx$</p> <p>$\int \frac{xdx}{9x^2+3}$</p> |
| <p>3. $\int \sqrt[4]{2-5x} dx$</p> <p>$\int \frac{dx}{2+3x}$</p> <p>$\int \cos(3x-7) dx$</p> <p>$\int \frac{dx}{\sqrt{5x^2+3}}$</p> | <p>9. $\int \frac{dx}{(2+x)^3}$</p> <p>$\int \frac{dx}{3-2x}$</p> <p>$\int \sin(5x-3) dx$</p> <p>$\int \frac{dx}{\sqrt{3-9x^2}}$</p> | <p>15. $\int \frac{dx}{5+3x}$</p> <p>$\int \frac{dx}{\sqrt{(2-x)^5}}$</p> <p>$\int \sin(3+4x) dx$</p> <p>$\int \frac{dx}{\sqrt{4-7x^2}}$</p> | <p>21. $\int \frac{dx}{\sqrt[3]{2+x}}$</p> <p>$\int \frac{dx}{5-2x}$</p> <p>$\int \cos(2+5x) dx$</p> <p>$\int \frac{\sqrt{3} dx}{9x^2-3}$</p> | <p>27. $\int \frac{dx}{\sqrt[3]{3+x}}$</p> <p>$\int \frac{dx}{4-3x}$</p> <p>$\int \sin(3x+6) dx$</p> <p>$\int \frac{dx}{4x^2+3}$</p> |
| <p>4. $\int (1-4x)^7 dx$</p> <p>$\int \frac{dx}{1-4x}$</p> <p>$\int \sin(7x+1) dx$</p> <p>$\int \frac{\sqrt{5} dx}{\sqrt{3-4x^2}}$</p> | <p>10. $\int \sqrt[3]{1+3x} dx$</p> <p>$\int \frac{dx}{5x-3}$</p> <p>$\int \cos(5x-8) dx$</p> <p>$\int \frac{dx}{\sqrt{2x^2-9}}$</p> | <p>16. $\int \sqrt[3]{3-2x} dx$</p> <p>$\int \frac{dx}{4-7x}$</p> <p>$\int \cos(7x+3) dx$</p> <p>$\int \frac{xdx}{\sqrt{9x^2+3}}$</p> | <p>22. $\int \sqrt[3]{1+x} dx$</p> <p>$\int \frac{dx}{7-3x}$</p> <p>$\int \sin(7-4x) dx$</p> <p>$\int \frac{9 dx}{\sqrt{9x^2-3}}$</p> | <p>28. $\int (1+4x)^5 dx$</p> <p>$\int \frac{dx}{2+7x}$</p> <p>$\int \sin(5-3x) dx$</p> <p>$\int \frac{dx}{\sqrt{4x^2+3}}$</p> |
| <p>5. $\int \frac{dx}{\sqrt{(1+x)^3}}$</p> | <p>11. $\int \sqrt{3+x} dx$</p> | <p>17. $\int \frac{dx}{\sqrt[3]{(1-4x)^5}}$</p> | <p>23. $\int \frac{dx}{\sqrt[3]{5+3x}}$</p> | <p>29. $\int \frac{dx}{\sqrt{1+x}}$</p> |

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| $\int \frac{dx}{3-x}$ $\int \sin(9x-1)dx$ $\int \frac{dx}{4+3x^2}$ | $\int \frac{dx}{5-3x}$ $\int \cos(10x-3)dx$ $\int \frac{\sqrt{14}dx}{2x^2-7}$ | $\int \frac{dx}{3x+4}$ $\int \sin(9x+7)dx$ $\int \frac{dx}{\sqrt{7x^2-4}}$ | $\int \frac{dx}{1+6x}$ $\int \cos(8x-4)dx$ $\int \frac{dx}{7x^2-4}$ | $\int \frac{dx}{6+5x}$ $\int \sin(8x-5)dx$ $\int \frac{dx}{8x^2-9}$ |
| 6. $\int \sqrt{5-4x} dx$ $\int \frac{dx}{3x+9}$ $\int \cos(5x-6)dx$ $\int \frac{dx}{5x^2+3}$ | 12. $\int (1-3x)^4 dx$ $\int \frac{dx}{2-3x}$ $\int \sin(3-4x)dx$ $\int \frac{\sqrt{2}dx}{\sqrt{7-2x^2}}$ | 18. $\int \frac{dx}{\sqrt[3]{2-5x}}$ $\int \frac{dx}{3-5x}$ $\int \cos(3x-7)dx$ $\int \frac{dx}{4x^2+7}$ | 24. $\int \frac{dx}{\sqrt[3]{(3-4x)^2}}$ $\int \frac{dx}{4x-2}$ $\int \cos(2+3x)dx$ $\int \frac{xdx}{3x^2+2}$ | 30. $\int \sqrt{1+3x} dx$ $\int \frac{dx}{1-7x}$ $\int \cos(7x+3)dx$ $\int \frac{dx}{8x^2+9}$ |

I3 – 2.25

Знайти невизначені інтеграли

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| 1. $\int \frac{\sqrt[5]{\operatorname{ctg}^2 x}}{\sin^2 x} dx$ $\int \frac{\sin 4x}{\sqrt[3]{\cos^2 4x}} dx$ $\int \frac{3x+2}{\sqrt{2x^2-1}} dx$ $\int \frac{4x-5}{2x^2-5x+17} dx$ | 7. $\int \frac{\sqrt[5]{\operatorname{tg}^2 3x}}{\cos^2 3x} dx$ $\int \sqrt[4]{\cos 2x} \cdot \sin 2x dx$ $\int \frac{5x+2}{\sqrt{x^2+9}} dx$ $\int \frac{x^2}{7+3x^3} dx$ | 13. $\int \frac{dx}{\cos^2 4x \cdot \sqrt{\operatorname{tg} 4x}}$ $\int \frac{\operatorname{arctg}^3 2x}{1+4x^2} dx$ $\int \frac{2x-4}{x^2+16} dx$ $\int \frac{3x+3}{x^2+2x} dx$ | 19. $\int \frac{\operatorname{ctg}^5 4x}{\sin^2 4x} dx$ $\int \frac{dx}{\sqrt{1-x^2} \operatorname{arcsin}^4 x}$ $\int \frac{x-5}{\sqrt{4-9x^2}} dx$ $\int \frac{e^{2x}}{\sqrt{3+e^{2x}}} dx$ |
| 2. $\int \frac{\cos 5x}{\sqrt{\sin^3 5x}} dx$ $\int \frac{\sqrt[3]{\operatorname{arccos}^2 x}}{\sqrt{1-x^2}} dx$ $\int \frac{3-2x}{x^2-8} dx$ $\int \frac{x^5}{3x^6-7} dx$ | 8. $\int \sqrt{\cos^3 2x} \cdot \sin 2x dx$ $\int \frac{\operatorname{arcsin}^5 2x}{\sqrt{1-4x^2}} dx$ $\int \frac{3x-3}{\sqrt{1-x^2}} dx$ $\int \frac{\sin 4x}{\sqrt{\cos 4x+3}} dx$ | 14. $\int \sin^3 4x \cdot \cos 4x dx$ $\int e^{1-4x^2} x dx$ $\int \frac{x-5}{8-4x^2} dx$ $\int \frac{3x^2-2}{\sqrt{2x^3-4x}} dx$ | 20. $\int \frac{\sqrt[3]{\operatorname{tg}^5 4x}}{\cos^2 4x} dx$ $\int \frac{dx}{(1+x^2) \operatorname{arctg}^3 x}$ $\int \frac{x+4}{7x^2+3} dx$ $\int \frac{\cos 7x}{\sqrt{5-\sin 7x}} dx$ |
| 3. $\int \frac{dx}{(x+1) \cdot \sqrt[3]{\ln(x+1)}}$ $\int e^{3\cos x+2} \sin x dx$ | 9. $\int \frac{\cos x}{\sqrt{(\sin x-4)^3}} dx$ $\int e^{4-3x^2} x dx$ | 15. $\int \frac{\sin 3x}{\cos^2 3x} dx$ $\int \frac{e^{\operatorname{tg} x}}{\cos^2 x} dx$ | 21. $\int \frac{\cos 4x}{\sin^3 4x} dx$ $\int e^{-x^3+1} x^2 dx$ |

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| $\int \frac{5x-2}{x^2+9} dx$ $\int \frac{\sin 2x}{3\sin^2 x+4} dx$ | $\int \frac{2x-3}{\sqrt{4-x^2}} dx$ $\int \frac{e^x}{4-3e^x} dx$ | $\int \frac{3x-1}{4-x^2} dx$ $\int \frac{\sin 2x}{\cos^2 x-4} dx$ | $\int \frac{2x+5}{\sqrt{5x^2+1}} dx$ $\int \frac{x^2}{7-5x^3} dx$ |
| 4. $\int \sin^3 5x \cdot \cos 5x dx$ $\int e^{5x^2-3} x dx$ $\int \frac{3x+4}{5-2x^2} dx$ $\int \frac{7x^3}{2x^4-5} dx$ | 10. $\int \frac{\sqrt[3]{\ln(1-x)} dx}{x-1}$ $\int e^{5-2x^2} x dx$ $\int \frac{2x-1}{\sqrt{5-3x^2}} dx$ $\int \frac{4x^3}{7+2x^4} dx$ | 16. $\int \frac{\operatorname{tg}^7 3x}{\cos^2 3x} dx$ $\int e^{4-x^2} x dx$ $\int \frac{x-3}{1-4x^2} dx$ $\int \frac{\sin 3x}{3-\cos 3x} dx$ | 22. $\int \frac{\sqrt[3]{\arcsin x}}{\sqrt{1-x^2}} dx$ $\int \frac{\arccos^2 3x}{\sqrt{1-9x^2}} dx$ $\int \frac{1-2x}{\sqrt{3x^2+2}} dx$ $\int \frac{e^{2x}}{5+e^{2x}} dx$ |
| 5. $\int \frac{dx}{(x+1) \cdot \ln^2(x+1)}$ $\int e^{1-6x^2} x dx$ $\int \frac{x-1}{5-x^2} dx$ $\int \frac{3x^2+1}{x^3+x-10} dx$ | 11. $\int \frac{\ln^3(1-x) dx}{x-1}$ $\int \frac{x dx}{e^{x^2-3}}$ $\int \frac{2x+3}{5x^2+2} dx$ $\int \frac{x^4}{\sqrt{x^5+3}} dx$ | 17. $\int \frac{\sqrt[3]{\ln(3x+1)} dx}{3x+1}$ $\int e^{3x^2-2} x dx$ $\int \frac{2x+3}{1-3x^2} dx$ $\int \frac{\sin x}{1+3\cos x} dx$ | 23. $\int \frac{\sqrt[5]{\ln^2(1+x)} dx}{x+1}$ $\int \frac{x^4 dx}{e^{x^5+1}}$ $\int \frac{x-3}{4x^2+2} dx$ $\int \frac{\sin 2x}{\sqrt{1+\cos^2 x}} dx$ |
| 6. $\int \frac{dx}{\sin^2 x \cdot \sqrt[5]{\operatorname{ctg}^4 x}}$ $\int \frac{\sqrt[3]{\operatorname{arctg}^2 x}}{1+x^2} dx$ $\int \frac{5+x}{3x^2+1} dx$ $\int \frac{12x^2+5x^4}{4x^3+x^5} dx$ | 12. $\int \frac{\operatorname{tg}^6 2x}{\cos^2 2x} dx$ $\int \frac{\arccos^2 3x}{\sqrt{1-9x^2}} dx$ $\int \frac{2x-5}{\sqrt{7x^2+3}} dx$ $\int \frac{7x}{\sqrt{5x^2-4}} dx$ | 18. $\int \frac{\operatorname{tg} 6x}{\cos^2 6x} dx$ $\int \frac{\arccos^2 3x}{\sqrt{1-9x^2}} dx$ $\int \frac{2x-3}{\sqrt{x^2+9}} dx$ $\int \frac{\sin 2x}{\sqrt{6-\cos^2 x}} dx$ | 24. $\int \frac{\sin 5x}{\sqrt{\cos 5x}} dx$ $\int e^{3x^2+4} x dx$ $\int \frac{3x-2}{3x^2+1} dx$ $\int \frac{4e^{2x}}{\sqrt{1-e^{2x}}} dx$ |
| 25. $\int \frac{dx}{(1-x) \cdot \sqrt[2]{\ln^3(1-x)}}$ | 26. $\int \frac{dx}{(2x+1) \cdot \sqrt[3]{\ln^2(2x+1)}}$ $\int e^{4-5x^2} x dx$ | 27. $\int \frac{\sqrt{\operatorname{ctg} 4x}}{\sin^2 4x} dx$ $\int e^{\sin x+1} \cos x dx$ | |

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| $\int \frac{xdx}{e^{2x^2+1}}$ $\int \frac{x-1}{7x^2+4} dx$ $\int \frac{\cos 3x}{\sqrt{\sin 3x-2}} dx$ | $\int \frac{3x-2}{2x^2+7} dx$ $\int \frac{\sin 2x}{4-\sin^2 x} dx$ | $\int \frac{5-x}{3x^2+1} dx$ $\int \frac{e^{3x}}{e^{3x}-5} dx$ |
| 28. $\int \frac{dx}{(1-x) \cdot \sqrt[3]{\ln^2(1-x)}}$ $\int e^{5x^2-3} x dx$ $\int \frac{x+1}{5x^2+1} dx$ $\int \frac{\sin 2x}{1+3\cos 2x} dx$ | 29. $\int \frac{\sqrt[2]{\ln(2x-1)} dx}{2x-1}$ $\int \frac{e^{\arctg x} dx}{1+x^2}$ $\int \frac{x+3}{\sqrt{x^2+4}} dx$ $\int \frac{e^x}{2e^x+3} dx$ | 30. $\int \frac{\sqrt{\arctg^6 3x}}{1+9x^2} dx$ $\int e^{4\sin x-1} \cos x dx$ $\int \frac{1-2x}{5x^2-1} dx$ $\int \frac{3x^3}{1-x^4} dx$ |

ІЗ – 2.26

Знайти невизначені інтеграли

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| 1. $\int \frac{\ln(\cos x)}{\cos^2 x} dx$ $\int (x-4) \cdot \sin 2x dx$ $\int (x+1) \cdot e^{2x} dx$ $\int \operatorname{arccotg} 4x dx$ | 2. $\int \frac{\ln(\ln x)}{x} dx$ $\int x \cdot \operatorname{arctg} 3x dx$ $\int (x-9) \cdot \sin \frac{x}{2} dx$ $\int \operatorname{arcsin} 5x dx$ | 3. $\int \ln(x+2) dx$ $\int (x^2-1) \cdot \sin x dx$ $\int (x-4) \cdot \cos \frac{x}{3} dx$ $\int \operatorname{arctg} 2x dx$ | 4. $\int \frac{\ln x \cdot \ln(\ln x)}{x} dx$ $\int \frac{x}{\cos^2 x} dx$ $\int (x-3) \cdot \cos x dx$ $\int (x+1) e^{-4x} dx$ |
| 5. $\int \frac{\ln x}{\sqrt{x}} dx$ $\int (x^2-1) \cdot e^x dx$ $\int (x-8) \cdot \sin x dx$ $\int \ln(x-5) dx$ | 6. $\int \frac{\ln(\cos x)}{\sin^2 x} dx$ $\int (x^2+x) \cdot \sin x dx$ $\int (x+3) \cdot \sin \frac{x}{4} dx$ $\int x \cdot \operatorname{arctg} x dx$ | 7. $\int \frac{\ln x}{x^2} dx$ $\int (x^2+x) \cdot \cos x dx$ $\int x \cdot \sin \frac{x}{2} dx$ $\int x^2 e^{2x} dx$ | 8. $\int \frac{\arccos x}{\sqrt{1+x}} dx$ $\int (x+4) \cdot \sin 2x dx$ $\int x^2 \cdot \cos 2x dx$ $\int x^2 e^{-x} dx$ |
| 9. $\int \ln^2 x dx$ $\int (x^2+3) \cdot \sin x dx$ $\int x^2 \cdot e^{3x} dx$ | 10. $\int x^2 \cdot \sin 2x dx$ $\int x^2 \cdot \cos^2 x dx$ $\int (x+1) e^{-x} dx$ | 11. $\int x \cdot \ln \frac{1-x}{1+x} dx$ $\int (x^2+1) \cdot e^{-x} dx$ | 12. $\int \operatorname{arccotg} 3x dx$ $\int (x^2+1) \cdot e^x dx$ |

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| $\int x \cdot \cos(x+3) dx$ | $\int x \cdot \arcsin(x+7) dx$ | $\int (x-1) \cdot \cos 5x dx$ $\int x \cdot \arccos(x-4) dx$ | $\int (x-2) \cdot \cos 4x dx$ $\int x \cdot e^{-7x} dx$ |
| 13. $\int \frac{\ln(\sin x)}{\sin^2 x} dx$ $\int x \cdot \sin^2 x dx$ $\int (x+7) \cdot \sin 2x dx$ $\int x^2 \cdot e^{\frac{x}{2}} dx$ | 14. $\int \frac{x \cdot \arcsin 2x}{\sqrt{1-4x^2}} dx$ $\int x^2 \cdot \cos 2x dx$ $\int (x+2) \cdot \cos 3x dx$ $\int x \cdot e^{3+x} dx$ | 15. $\int \ln(x+4) dx$ $\int (x^2-x+1) \cdot e^{-x} dx$ $\int (x-7) \cdot \cos 2x dx$ $\int x \cdot e^{-4x} dx$ | 16. $\int \operatorname{arctg}(1-x) dx$ $\int x \cdot \sin^2 x dx$ $\int (x+5) \cdot \sin x dx$ $\int \arccos x dx$ |
| 17. $\int x^2 \cdot \cos \frac{x}{3} dx$ $\int (x^2+2) \cdot e^x dx$ $\int (x-5) \cdot \cos x dx$ $\int \arcsin 2x dx$ | 18. $\int \frac{x \cdot \ln(1+\sqrt{1+x^2})}{\sqrt{1+x^2}} dx$ $\int x \cdot \operatorname{arctg} 3x dx$ $\int (x+3) \cdot \sin 5x dx$ $\int x \cdot \cos(x+7) dx$ | 19. $\int \cos(\ln x) dx$ $\int \frac{x}{\cos^2 x} dx$ $\int (x-2) \cdot e^x dx$ $\int \operatorname{arctg} 3x dx$ | 20. $\int \arcsin 4x dx$ $\int x^2 \cdot e^{-x} dx$ $\int (x+4) \cdot \sin 3x dx$ $\int x \cdot e^{2+x} dx$ |
| 21. $\int x \cdot \sin x \cdot \cos x dx$ $\int x^2 \cdot (\sin 2x-3) dx$ $\int (x+6) \cdot \cos 4x dx$ $\int x \cdot e^{-6x} dx$ | 22. $\int x^2 \cdot (\sin x+1) dx$ $\int (x^2+x) \cdot e^{-x} dx$ $\int (x-6) \cdot \sin \frac{x}{2} dx$ $\int \operatorname{arctg} 8x dx$ | 23. $\int (x^2-x+1) \cdot e^x dx$ $\int x \cdot \operatorname{ctg}^2 x dx$ $\int (x+2) \cdot \cos \frac{x}{4} dx$ $\int \arcsin 7x dx$ | 24. $(x^2+4) \cdot e^{2x} dx$ $\int x^2 \cdot (\cos 2x+3) dx$ $\int (x+6) \cdot \cos 4x dx$ $\int \operatorname{arctg} 2x dx$ |
| 25. $\int \ln(x+\sqrt{1+x^2}) dx$ $\int (x^2-1) \cdot e^{-x} dx$ $\int (x+9) \cdot \sin x dx$ $\int \arccos 7x dx$ | 26. $\int x \cdot \operatorname{arctg}^2 x dx$ $\int (x^2-3) \cdot \cos x dx$ $\int (x+2) \cdot \sin \frac{x}{3} dx$ $\int \arccos 3x dx$ | 27. $\int \frac{\arccos x}{\sqrt{1-x}} dx$ $\int x \cdot \operatorname{tg}^2 x dx$ $\int (x+1) \cdot \cos 7x dx$ $\int \arcsin 4x dx$ | 28. $\int \frac{x \cdot \operatorname{arctg} x}{\sqrt{1+x^2}} dx$ $\int (x^2+2) \cdot e^{-x} dx$ $\int (x-4) \cdot \cos 2x dx$ $\int x \cdot \operatorname{arctg} 3x dx$ |
| 29. $\int x^2 \cdot \operatorname{arctg} 3x dx$ $\int \frac{x}{\sin^2 x} dx$ $\int (x+6) \cdot \sin 3x dx$ $\int (x+3) e^{-x} dx$ | | | 30. $\int x^2 \ln(x+1) dx$ $\int (x^2+x) \cdot e^x dx$ $\int (x-1) \cdot \sin \frac{x}{3} dx$ $\int (x^2-3) e^x dx$ |