

FIȘA DE LUCRU – INTEGRALA NEDEFINITĂ

Să se calculeze următoarele integrale nedefinite folosind metoda integrării directe

1. $\int (x^6 + \cos x) dx$

2. $\int (4x^3 - \cos x) dx$

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

4. $\int (4 \cos x - x^2) dx$

5. $\int (6x^5 + \cos x) dx$

6. $\int (2x^6 - \cos x) dx$

7. $\int \left(\frac{2}{x} + e^x \right) dx$

8. $\int \left(\frac{3}{x} - e^x \right) dx$

9. $\int \left(e^x - \frac{3}{x} \right) dx$

10. $\int \left(e^x + \frac{3}{x} \right) dx$

11. $\int \left(\frac{5}{x} + e^x \right) dx$

12. $\int \left(\frac{2}{x} - e^x \right) dx$

13. $\int \frac{1}{25 + x^2} dx$

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

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

16. $\int \frac{1}{x^2 - 25} dx$

17. $\int \frac{1}{x^2 - 36} dx$

18. $\int \frac{1}{9 - x^2} dx$

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

20. $\int \frac{1}{\sqrt{4 - x^2}} dx$

21. $\int \frac{1}{\sqrt{x^2 + 14}} dx$

22. $\int \frac{1}{\sqrt{x^2 - 4}} dx$

23. $\int \frac{1}{\sqrt{25 + x^2}} dx$

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

25. $\int \frac{1}{\sqrt{8 + x^2}} dx$

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

27. $\int \frac{1}{\sqrt{x^2 - 4}} dx$

28. $\int \frac{1}{\cos^2 x \cdot \sin^2 x} dx$

Să se calculeze următoarele integrale nedefinite folosind metoda integrării prin părți

1. $\int (3x^2 \ln x) dx$

2. $\int (x^2 \ln x) dx$

3. $\int (x^2 \sin x) dx$

4. $\int (x^2 \cos x) dx$

5. $\int (e^x \sin x) dx$

6. $\int (e^x \cos x) dx$

7. $\int \sin x \cos x dx$

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

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

10. $\int \sqrt{x^2 - 4} dx$

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

12. $\int \sqrt{4 + x^2} dx$

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

Să se calculeze următoarele integrale nedefinite folosind metoda schimbării de variabilă

1. $\int e^{x^2 - 5x + 2019} (2x - 5) dx$

2. $\int \left(3x^2 + \frac{1}{x}\right) e^{x^3 + \ln x} dx$

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

4. $\int e^x \cos e^x dx$

5. $\int \sin x \operatorname{tg}(\cos x) dx$

6. $\int 4(e^x + \cos x)^3 (e^x - \sin x) dx$

7. $\int \sin x \cos(\cos x) dx$

8. $\int \frac{3x^2}{2\sqrt{x^3 - 9}} dx$

9. $\int \frac{5x^4 - 6x}{2\sqrt{x^5 - 3x^2 + 1}} dx$

10. $\int \frac{12x^2 + 2x - 5}{2\sqrt{4x^3 + x^2 - 5x + 2018}} dx$

11. $\int \frac{2x + 9}{2\sqrt{x^2 + 9x - 3}} dx$

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

13. $\int \frac{x - 2}{\sqrt{x^2 - 4x + 5}} dx$

Să se calculeze următoarele integrale nedefinite raționale

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

2. $\int \frac{3x^2 - 7}{x^3 - 7x + 2019} dx$

3. $\int \frac{12x - 3}{6x^2 - 3x + 5} dx$

4. $\int \frac{4x^3 - 15x^2 + 21}{x^3 - 5x^2 + 21x - 72} dx$

5. $\int \frac{1}{x^2 - 8x + 5} dx$

6. $\int \frac{1}{x^2 - 10x + 16} dx$

7. $\int \frac{3}{9x^2 - 12x + 13} dx$

8. $\int \frac{2x}{x^4 + 6x^2 - 7} dx$

9. $\int \frac{x^2 - 5}{x^2 - 16} dx$

10. $\int \frac{x^2 + 2x - 5}{x^2 + 16} dx$

11. $\int \frac{x - 5}{x^2 + 9} dx$