

Integrale nedefinita

1. Sa se calculeze:

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

1.2. $\int (x^5 + x^4 + x^{-2} + x^{-3} + 1) dx.$

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

1.4. $\int \frac{3 - x - x^2}{x^3} dx.$

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

1.6. $\int \frac{(x^2 + 1)^3}{x^4} dx.$

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

1.8. $\int (\sqrt{x} + \sqrt[3]{x}) dx.$

1.9. $\int \left(\sqrt[3]{x^2} - \frac{1}{\sqrt{x}} - \frac{1}{\sqrt[3]{x^2}} + \sqrt[4]{x^5} \right) dx.$

1.10. $\int \left(\sqrt{x} + \frac{1}{\sqrt{x}} \right)^3 dx.$

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

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

1.13. $\int \frac{1 - \cos^3 x}{\cos^2 x} dx.$

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

1.15. $\int \frac{2\operatorname{tg}^2 x + 3}{\sin^2 x} dx.$

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

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

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

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

1.20. $\int \cos^2 \frac{x}{2} dx.$

1.21. $\int \left(\cos \frac{x}{2} - \sin \frac{x}{2} \right)^2 dx.$

1.22. $\int \left(\cos^4 \frac{x}{2} - \sin^4 \frac{x}{2} \right) dx.$

1.23. $\int \operatorname{tg}^2 x dx.$

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

1.25. $\int \left(3^{\frac{x}{2}} + 3^{-\frac{x}{2}} \right)^2 dx.$

1.26. $\int e^x \left(1 + \frac{e^{-x}}{\sin^2 x} \right) dx.$

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

1.28. $\int 3^x \left(2 + \frac{3^{-x}}{\sqrt{1 - x^2}} \right) dx.$

1.29. $\int \frac{3^x + 4^x}{12^x} dx.$

1.30. $\int \left(\frac{2}{\sqrt{1 - x^2}} - \frac{3}{1 + x^2} \right) dx.$

2. Sa se calculeze:

$$2.1. \int (2x + 5)^3 dx.$$

$$2.2. \int (3x - 7)^5 dx.$$

$$2.3. \int (4 - x)^{10} dx.$$

$$2.4. \int \sqrt[3]{(2x - 7)^5} dx.$$

$$2.5. \int \sqrt[4]{\left(1 - \frac{x}{2}\right)^3} dx.$$

$$2.6. \int \sqrt{3x - 7} dx.$$

$$2.7. \int \sin 5x dx.$$

$$2.8. \int \sin (3x - 2) dx.$$

$$2.9. \int \cos 4x dx.$$

$$2.10. \int \cos \left(3 - \frac{x}{2}\right) dx.$$

$$2.11. \int \frac{dx}{\cos^2 7x}.$$

$$2.12. \int \frac{dx}{\cos^2 \left(\frac{x}{2} - 3\right)}.$$

$$2.13. \int \frac{dx}{\sin^2 \frac{x}{3}}.$$

$$2.14. \int \frac{dx}{\sin^2 (3 - 2x)}.$$

$$2.15. \int \frac{dx}{\sqrt{1 - 4x^2}}.$$

$$2.16. \int \frac{dx}{\sqrt{4 - x^2}}.$$

$$2.17. \int \frac{dx}{1 + 9x^2}.$$

$$2.18. \int \frac{dx}{1 + \frac{x^2}{4}}.$$

$$2.19. \int \frac{dx}{x + 1}.$$

$$2.20. \int \frac{dx}{3x - 1}$$

$$2.21. \int e^{-x} dx.$$

$$2.22. \int e^{3x-1} dx.$$

$$2.23. \int 2^{3x+1} dx.$$

$$2.24. \int 5^{1-2x} dx.$$

3. Sa se calculeze:

$$3.1. \int (x^2 + 3x + 1)^{10} (2x + 3) dx. \quad 3.2. \int \sqrt{3 - 2x + x^2} (x - 1) dx.$$

$$3.3. \int \sqrt[3]{x^3 - 8} x^2 dx. \quad 3.4. \int \sqrt{x^4 + 1} x^3 dx.$$

$$3.5. \int \frac{2x - 3}{x^2 - 3x + 7} dx. \quad 3.6. \int \frac{6x - 7}{3x^2 - 7x + 10} dx.$$

$$3.7. \int \frac{e^{\sqrt{x+1}}}{\sqrt{x+1}} dx. \quad 3.8. \int e^{\sin x} \cos x dx.$$

$$3.9. \int \frac{e^{\arcsin x}}{\sqrt{1-x^2}} dx.$$

$$3.10. \int \frac{e^{\operatorname{arctg} x} + 1}{1+x^2} dx.$$

$$3.11. \int e^{x^3} x^2 dx.$$

$$3.12. \int \sin^3 x \cos x dx.$$

$$3.13. \int \cos^5 x \sin x dx.$$

$$3.14. \int \sin^7 x \cos x dx.$$

$$3.15. \int \frac{\sin x}{\cos^5 x} dx.$$

$$3.16. \int \frac{\cos x}{1+2\sin x} dx.$$

$$3.17. \int \frac{dx}{x \ln x}.$$

$$3.18. \int \frac{dx}{x(\ln x + 2)}.$$

$$3.19. \int \frac{\sqrt[3]{(1+\ln x)^2}}{x} dx.$$

$$3.20. \int \frac{(\ln x + 4)^2}{x} dx.$$

$$3.21. \int \frac{\operatorname{arctg}^2 x}{1+x^2} dx.$$

$$3.22. \int \frac{\operatorname{arctg} 2x + x}{1+4x^2} dx.$$

$$3.23. \int \frac{\arcsin^2 x - 1}{\sqrt{1-x^2}} dx.$$

$$3.24. \int \sqrt{\frac{\arccos x}{x^2 - 1}} dx.$$

$$3.25. \int \frac{dx}{\sin x}.$$

$$3.26. \int \frac{dx}{\cos x}.$$

$$3.27. \int \frac{2^x}{\sqrt{1-4^x}} dx.$$

$$3.28. \int \frac{6x-7}{3x^2-7x+10} dx.$$

$$3.29. \int 3^{2x^2+x-1} (4x+1) dx.$$

$$3.30. \int x e^{-x^2} dx.$$

4. Sa se calculeze:

$$4.1. \int \frac{1}{x^2} \sin \frac{1}{x} dx.$$

$$4.2. \int \frac{dx}{\sqrt{x} + \sqrt[4]{x}}.$$

$$4.3. \int \frac{dx}{\sin^2 x + 4 \cos^2 x}.$$

$$4.4. \int \frac{dx}{1 + \sin^2 x}.$$

$$4.5. \int \frac{6 \operatorname{tg} x}{3 \sin 2x + 5 \cos^2 x} dx.$$

$$4.6. \int \frac{8 + \operatorname{tg} x}{18 \sin^2 x + 2 \cos^2 x} dx.$$

$$4.7. \int \frac{\ln \arcsin x}{\sqrt{1-x^2} \arcsin x} dx.$$

$$4.8. \int \ln \frac{1+x}{1-x} \cdot \frac{1}{x^2-1} dx.$$

$$4.9. \int \frac{e^{\operatorname{ctg} 2x} + \operatorname{tg} 2x}{\sin^2 2x} dx.$$

$$4.10. \int \frac{\operatorname{arctg} \sqrt{x}}{(1+x)\sqrt{x}} dx.$$

$$4.11. \int \frac{\cos^3 x}{\sqrt{\sin x}} dx.$$

$$4.12. \int \frac{dx}{x^2 \sqrt{1+x^2}}.$$

4.13. $\int \frac{dx}{\sqrt{-8-6x-x^2}} .$

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

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

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

4.17. $\int \sqrt{\frac{1+x}{1-x}} \cdot \frac{1}{1-x} dx.$

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

4.19. $\int \frac{7x+3}{x^2+4} dx.$

4.20. $\int \frac{dx}{\sqrt{x}+\sqrt[3]{x}}.$

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

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

5. Sa se calculeze:

5.1. $\int x \sin x dx.$

5.2. $\int x \cos x dx.$

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

5.4. $\int (x^2-x+1) \cos x dx.$

5.5. $\int x e^x dx.$

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

5.7. $\int x e^{3x} dx.$

5.8. $\int (x^2+x-1) e^x dx.$

5.9. $\int x \ln x dx.$

5.10. $\int x^2 \ln x dx.$

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

5.12. $\int \ln x dx.$

5.13. $\int x^n \ln x dx, n \in \mathbb{N}.$

5.14. $\int \ln^2 x dx.$

5.15. $\int x \operatorname{arctg} x dx.$

5.16. $\int \operatorname{arctg} x dx.$

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

5.18. $\int \arcsin^2 x dx.$

5.19. $\int x^2 3^x dx.$

5.20. $\int x 2^x dx.$

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

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

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

5.24. $\int \sin(\ln x) dx.$

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

5.26. $\int \frac{x}{\cos^2 x} dx.$

5.27. $\int \frac{\operatorname{arctg} x}{x^2} dx.$

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

6. Sa se calculeze:

6.1. $\int \frac{x-5}{(x-3)(x-4)} dx.$

6.2. $\int \frac{2x+5}{(x-1)(x+6)} dx.$

6.3. $\int \frac{dx}{(x+2)(x-1)}.$

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

6.5. $\int \frac{dx}{(x-3)(x-2)(x+1)}.$

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

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

6.8. $\int \frac{2x^4-5x^2-8x-8}{x(x-2)(x+2)} dx.$

6.9. $\int \frac{dx}{(x-2)(x+1)(x+2)}.$

6.10. $\int \frac{x^2-x-9}{x^2-x-6} dx.$

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

6.12. $\int \frac{x^2+2x-11}{(x-1)(x+3)(x-5)} dx.$

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

6.14. $\int \frac{x^2+4x+6}{(x+2)^2x} dx.$

6.15. $\int \frac{x^5-2x^2+3}{(x-2)^2} dx.$

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

6.17. $\int \frac{x^2-2x+3}{x^2(x-2)} dx.$

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

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

6.20. $\int \frac{dx}{x^2(x+5)^2}.$

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

6.22. $\int \frac{x}{(x+1)^2(x+2)^2(x-1)} dx.$

7. Sa se calculeze:

7.1. $\int \frac{dx}{x^3+8}.$

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

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

7.4. $\int \frac{x-2}{x(x^2+4)} dx.$

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

7.6. $\int \frac{dx}{(x-2)(x-4)(x^2+2x+2)}.$

7.7. $\int \frac{x^4}{x^4-1} dx.$

7.8. $\int \frac{x-1}{x(x^2+1)} dx.$

$$7.9. \int \frac{x^3 + 4x^2 + 3x + 2}{(x+1)^2(x^2+1)} dx.$$

$$7.10. \int \frac{x(x^2 + 2x + 10)}{(x+1)^2(x^2 - x + 1)} dx.$$

$$7.11. \int \frac{dx}{x^2(x^2 - 2x + 2)}.$$

$$7.12. \int \frac{3x^2 - 6x + 1}{(x+1)^2(3x^2 - 8x + 9)} dx.$$

$$7.13. \int \frac{x-1}{(x^2+1)^2} dx.$$

$$7.14. \int \frac{x^4 + 2x^2 + 4}{(x^2+1)^3} dx.$$

$$7.15. \int \frac{x^2 + 2x + 7}{(x-2)(x^2+1)^2} dx.$$

$$7.16. \int \frac{3x+1}{x(1+x^2)^2} dx.$$

$$7.17. \int \frac{5x+8}{(x^2+4)^2} dx.$$

$$7.18. \int \frac{3x+5}{(x^2+2x+2)^2} dx.$$

$$7.19. \int \frac{x^2}{(x+1)^2(x^2-x+1)} dx.$$

$$7.20. \int \frac{2x^4 + 5x^2 - 2}{2x^3 - x - 1} dx.$$

8. Sa se calculeze:

$$8.1. \int \frac{dx}{3 \sin x + 4 \cos x}.$$

$$8.2. \int \frac{dx}{\sin 2x + \cos^2 x}.$$

$$8.3. \int \frac{dx}{\sin x - \cos x}.$$

$$8.4. \int \frac{dx}{3 \sin x + 4 \cos x + 5}.$$

$$8.5. \int \frac{3 \sin x + 2 \cos x}{\sin^2 x \cos x + 4 \cos^3 x} dx.$$

$$8.6. \int \frac{\sin x + 3 \cos x}{\sin^2 x \cos x + \cos^3 x} dx.$$

$$8.7. \int \frac{\sin x(1 + \sin^2 x)}{\cos 2x} dx.$$

$$8.8. \int \frac{\cos^3 x(1 + \cos^2 x)}{\sin^2 x(1 + \sin^2 x)} dx.$$

$$8.9. \int \cos 2x \cos 4x dx.$$

$$8.10. \int \cos 3x \cos x \cos 5x dx.$$

$$8.11. \int \sin x \sin 3x dx.$$

$$8.12. \int \sin 2x \sin 4x \sin 6x dx.$$

$$8.13. \int \sin x \cos 3x dx.$$

$$8.14. \int \sin 2x \cos 4x \cos 6x dx.$$

$$8.15. \int \sin^2 2x \cos^2 2x dx.$$

$$8.16. \int \sin^4 x \cos^4 x dx.$$

$$8.17. \int \sin^2 x \cos^4 x dx.$$

$$8.18. \int \sin^4 x \cos^2 x dx.$$

$$8.19. \int \sin^2 x \cos^3 x dx.$$

$$8.20. \int \sin^3 x \cos^2 x dx.$$

$$8.21. \int \cos^5 x dx.$$

$$8.22. \int \sin^3 x \cos^3 x dx.$$