Домашнее задание 1
Определенный и неопределенный интеграл.

Задача 1

1.1. $\int \frac{(2-\sqrt{x})^3}{\sqrt[3]{x}}dx;$

1.2. $\int \frac{x^6-4\sqrt{x}+3x-5}{x}dx;$

1.3. $\int \frac{x-\sqrt{x^9}+3\sqrt[5]{x^3}+1}{x^2}dx;$

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

1.5. $\int \frac{x^3-5x+2\sqrt[3]{x}+1}{\sqrt[3]{x^4}}dx;$

1.6. $\int \frac{x^7-5x\sqrt{x}-4x+1}{x^2}dx;$

1.7. $\int \frac{x^8-3x^3+5\sqrt{x}+2}{x^4}dx;$

1.8. $\int \frac{3x^7-\sqrt{x}+5x-1}{\sqrt{x^3}}dx;$

1.9. $\int \frac{10x^8-x^6+3\sqrt{x}+5}{x^7}dx;$

1.10. $\int \frac{5x-7x^2+8\sqrt[3]{x}+x^{11}}{x^3}dx;$

1.11. $\int \frac{x^{10}-5x^6+7x-2\sqrt{x}}{x^2}dx;$

1.12. $\int \frac{x^{13}-13x+x^2+\sqrt{x}}{x}dx;$

1.13. $\int \frac{5x^7-8x+3\sqrt[3]{x}+2}{x^2}dx;$

1.14. $\int \frac{3x-x\sqrt{x}+15x^7}{x^2\sqrt{x}}dx;$

1.15. $\int \frac{16-x\sqrt[3]{x}+x-7x^3}{x^2}dx;$

1.16. $\int \frac{3-5\sqrt{x^3}+\sqrt[5]{x}+12x^9}{x}dx;$

1.17. $\int \frac{7-3x+2\sqrt[4]{x}+x^9}{\sqrt[3]{x}}dx;$

1.18. $\int \frac{(\sqrt[7]{x}-2x)^2}{x}dx;$

1.19. $\int \frac{5x^4-7x+\sqrt{x}+3}{x^2}dx;$

1.20. $\int \frac{2\sqrt[3]{x}+x\sqrt[7]{x}-5+x^6}{x}dx;$

1.21. $\int \frac{(3-\sqrt{x})^3}{\sqrt[3]{x}}dx;$

1.22. $\int \frac{(x\sqrt{x}-2)^2}{\sqrt[4]{x}}dx;$

1.23. $\int \frac{(2\sqrt{x}+\sqrt[3]{x})^3}{x}dx;$

1.24. $\int \frac{(5\sqrt[5]{x}-3x^2)^2}{x}dx;$

1.25. $\int \frac{(x^4-5\sqrt[3]{x})^2}{\sqrt{x}}dx;$

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

1.27. $\int \frac{3x^{12}-5x\sqrt[3]{x}+2-\sqrt[6]{x}}{x}dx;$

1.28. $\int \frac{x^4-5x\sqrt[4]{x}+7x+2}{x^2}dx;$

1.29. $\int \frac{(5\sqrt{x}-\sqrt[3]{x})^2}{\sqrt[5]{x}}dx;$

1.30. $\int \frac{x^3+6\sqrt[4]{x}-2x+9}{\sqrt[3]{x^2}}dx.$

Задача 2.

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

2.2. $\int \frac{1-\sin^3 x}{\sin^2 x}dx$

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

2.4. $\int \frac{2\cdot e^x+7}{e^{2x}}dx$

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

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

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

2.8. $\int \frac{13^x + 2^{-x}}{2^x}\,dx$

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

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

2.11. $\int \frac{(e^{2x}+3)dx}{e^{3x}}$

2.12. $\int \frac{3\cdot 2^x + 10^x}{20^x}\,dx$

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

2.14. $\int \frac{dx}{(x-3)^2+9}$

2.15. $\int \frac{6\sin x + 5\sin^4 x}{\sin^3 x}\,dx$

2.16. $\int \frac{dx}{\sqrt{13-(x-4)^2}}$

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

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

2.19. $\int \frac{2^x + 3^x}{5^x}\,dx$

2.20. $\int \frac{\cos 6x}{\cos 3x - \sin 3x}\,dx$

2.21. $\int \frac{2\cdot e^x + 7}{e^{2x}}\,dx$

2.22. $\int \frac{(2-e^x)dx}{2^x}$

2.23. $\int \frac{6\cdot 5^x + 5\cdot 6^x}{30^x}\,dx$

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

2.25. $\int \frac{3\cos x - 5\cos^4 x}{\cos^3 x}\,dx$

2.26. $\int \frac{6\cdot 4^x - 4\cdot 6^x}{24^x}\,dx$

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

2.28. $\int \frac{4-5e^{5x}}{e^{3x}}\,dx$

2.29. $\int \frac{3^x - 7^x}{21^x}\,dx$

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

Задача 3.

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

3.2. $\int \frac{dx}{\cos^2(x/2)}$

3.3. $\int \sqrt[5]{(8-3x)^6}\,dx$

3.4. $\int (4+3x)^7\,dx$

3.5. $\int \frac{dx}{(3-4x)\sqrt[3]{3-4x}}$

3.6. $\int \frac{dx}{3-5x}$

3.7. $\int \cos(\pi - 2\pi x)\,dx$

3.8. $\int \sqrt[3]{5x-2}dx$

3.9. $\int \sqrt{1-\frac{x}{5}}dx$;

3.10. $\int \frac{dx}{\sqrt{(3-2x)^3}}$;

3.11. $\int 5^{1-2x}\,dx$;

3.12. $\int \frac{dx}{\sin^2 \frac{x}{4}}$;

3.13. $\int (5x+1)^2 \sqrt[3]{5x+1}dx$

3.14. $\int 10^{3x-1}dx$;

3.15. $\int \frac{dx}{\sqrt[3]{(8x-1)^5}}$;

3.16. $\int \mathrm{ch}(7-2x)\,dx$;

3.17. $\int \frac{dx}{3x+13}$;

3.18. $\int \frac{dx}{e^{4x+3}}$;

3.19. $\int \frac{dx}{(x+2)\sqrt[5]{x+2}}$;

3.20. $\int \sin(\pi - 5x)\,dx$;

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

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

3.23. $\int \frac{dx}{(7x-5)^4}$;

3.24. $\int \frac{dx}{7^{3x-2}}$;

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

3.26. $\int \frac{dx}{\sqrt[7]{(8-3x)^3}}$;

3.27. $\int \mathrm{sh}(7-2x)\,dx$;

3.28. $\int \mathrm{ch}(7x+5)\,dx$;

3.29. $\int \frac{dx}{(7-3x)^9}$;

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

Задача 4.

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

4.2. $\int \frac{dx}{x\sqrt{5-2\ln x}}$

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

4.4. $\int \cos^3 x \cdot \sin x dx$;

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

4.6. $\int \frac{\sqrt{\ln x}}{x}dx$;

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

4.8. $\int \frac{\sqrt[3]{\ln^2 x}}{x}\,dx$;

4.9. $\int \frac{e^x dx}{\sqrt{2e^x+5}}$

4.10. $\int \frac{x^3 dx}{x^8+1}$;

4.11. $\int \frac{(2\ln x-3)^2 dx}{x}$;

4.12. $\int \frac{x^5 dx}{x^{12}+4}$;

4.13. $\int \frac{e^x}{(4+e^x)^3}\,dx$;

4.14. $\int x(2-x^2)^5 dx$

4.15. $\int \frac{x^3}{x^4-7}\,dx$;

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

4.17. $\int \frac{dx}{x\sqrt[3]{\ln x}}$;

4.18. $\int xe^{-(x^2-4)}dx$;

4.19. $\int \frac{\sin x}{\sqrt{2+\cos x}}dx$;

4.20. $\int \frac{\ln^2 x dx}{x}$;

4.21. $\int x^4\sin(x^5+2)dx$;

4.22. $\int x(x^2-5)^7\,dx$;

4.23. $\int (5e^x-2)^6\cdot e^x dx$;

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

4.25. $\int \frac{x\ dx}{x^4+2}$;

4.26. $\int \frac{\sin x}{\cos^9 x}\,dx.$;

4.27. $\int \frac{e^x dx}{e^{2x}+1}$;

4.28. $\int \sqrt[3]{e^x+4}\cdot e^x dx$;

4.29. $\int x\sqrt[4]{3x^2+1}dx$;

4.30. $\int x^3\sqrt{1-4x^4}\,dx$.

Задача 5.

5.1. $\int \frac{\sqrt{1-\ln x}}{x}dx$

5.2. $\int \frac{\cos x\ \ dx}{\sin^2 x+9}$;

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

5.4. $\int \frac{e^x dx}{\sqrt{e^{2x}+5}}$

5.5. $\int \frac{\sqrt[3]{\operatorname{arctg} x}}{1+x^2}dx$

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

5.7. $\int \frac{\sin(1/x)}{x^2}dx$;

5.8. $\int \frac{xdx}{\sin^2 x^2}$

5.9. $\int \frac{dx}{x\cdot\sqrt[5]{3\ln x-7}}$

5.10. $\int \frac{\sqrt{1+\operatorname{tg} x}}{\cos^2 x}dx$;

5.11. $\int \frac{xdx}{\cos^2 x^2}$;

5.12. $\int \frac{e^{\sqrt[3]{x}}dx}{\sqrt[3]{x^2}}$;

5.13. $\int \frac{\sin xdx}{2\cos x+3}$;

5.14. $\int e^{\sin x}\cos x dx$

5.15. $\int \frac{e^{\sqrt{x}}dx}{\sqrt{x}}$

5.16. $\int \frac{e^{3x}dx}{e^{6x}+1}$

5.17. $\int x5^{1-x^2}\,dx$

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

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

5.20. $\int \frac{2^x dx}{4^x+9}$

5.21. $\int \frac{dx}{x\sqrt{1+2\ln x}}$

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

5.23. $\int \frac{\sin xdx}{\cos^2 x}$;

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

5.25. $\int \frac{dx}{x\left(\ln^2 x+12\right)}$;

5.26. $\int \frac{\sqrt[7]{1+3\ln x}dx}{x}$;

5.27. $\int \cos x\left(3-5\sin x\right)^4 dx$

5.28. $\int \frac{dx}{x\left(8+3\ln x\right)}$;

5.29. $\int \frac{3^x dx}{\sqrt{4-9^x}}$

5.30. $\int \frac{e^{-2x}dx}{\sqrt{8-e^{-4x}}}$.

Задача 6.

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

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

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

6.4. $\int \frac{x^2+\ln x^2}{x}dx$.

6.5. $\int \frac{xdx}{\sqrt{x^4+x^2+1}}$.

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

6.7. $\int \operatorname{tg} x \ln\cos x dx$.

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

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

6.10. $\int \frac{1-\cos x}{(x-\sin x)^3}dx$.

6.11. $\int \frac{\sin x-\cos x}{(\cos x+\sin x)^5}dx$.

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

6.13. $\int \frac{x^3+x}{x^4+1}dx$.

6.14. $\int \frac{xdx}{\sqrt{x^4-x^2-1}}$.

6.15. $\int \frac{xdx}{\sqrt[3]{x-1}}$.

6.16. $\int \frac{1+\ln(x-1)}{x-1}dx$.

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

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

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

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

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

6.22. $\int \frac{8x-\operatorname{arctg} 2x}{1+4x^2}dx$.

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

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

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

6.26. $\int \frac{x-1/x}{\sqrt{x^2+1}}dx$.

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

6.28. $\int \frac{x - (\operatorname{arctg} x)^4}{1+x^2} dx.$

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

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

Задача 7.

7.1. $\int (\cos 2x + 1)^3 \sin 2x dx$

7.2. $\int x^4 e^{5-3x^5} dx$

7.3. $\int \frac{\sin 2x}{e^{3\cos^2 x}} dx;$

7.4. $\int \frac{(\arccos 3x - 1)^5 dx}{\sqrt{1-9x^2}}$

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

7.6. $\int \sqrt{1-5\sin 3x} \cos 3x \, dx;$

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

7.8. $\int \frac{dx}{x\sqrt[9]{\ln 9x + 5}};$

7.9. $\int \frac{\sqrt{\operatorname{tg} 3x} dx}{\sin^2 3x};$

7.10. $\int \frac{dx}{\sqrt[3]{x} \cos^2 \sqrt[3]{x^2}}$

7.11. $\int e^{1-2\arccos x} \frac{dx}{\sqrt{1-x^2}};$

7.12. $\int \frac{\cos 3x}{e^{\sin 3x}} dx;$

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

7.14. $\int \frac{dx}{x^3 \sin^2 (1/x^2)};$

7.15. $\int \frac{\sin 5x}{\cos^7 5x} dx$

7.16. $\int \sin\left(x\sqrt{x}\right)\sqrt{x} dx;$

7.17. $\int \frac{\sqrt[3]{1-3\arccos x}}{\sqrt{1-x^2}} dx;$

7.18. $\int \sqrt{2e^{-3x} - 5} \, e^{-3x} dx;$

7.19. $\int \frac{3\cos(2\sqrt[3]{x}) + \sin\sqrt[3]{x}}{\sqrt[3]{x^2}} dx$

7.20. $\int \left(\cos^2 3x + \operatorname{tg} 5x\right) dx$

7.21. $\int \frac{\sqrt{\operatorname{arcctg} 4x - 7}}{1+16x^2} dx;$

7.22. $\int \sqrt[3]{2 + \sin 3x} \cos 3x dx$

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

7.24. $\int \frac{2 - 3\operatorname{ctg}^2 x}{\sin^2 x} dx;$

7.25. $\int \frac{(3 - 5\arccos(x/2))^4 dx}{\sqrt{4-x^2}}$

7.26. $\int \frac{8\operatorname{ctg} 2x - 7}{\cos^2 2x};$

7.27. $\int \operatorname{tg}\left(\frac{\pi}{3} - 3x\right) dx;$

7.28. $\int \left(\cos\frac{3x}{2} + \sin\frac{3x}{2}\right)^2 dx;$

7.29. $\int \frac{\operatorname{arctg}^3(x/3)}{9+x^2} dx;$

7.30. $\int \frac{2 - 3\operatorname{tg}^2 x}{\sin^2 x} dx.$

Задача 8.

8.1. $\int \frac{dx}{\sqrt{1-4x^2}\, 3^{\arcsin 2x}}$

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

8.3. $\int \frac{dx}{\sqrt{9-x^2} \arccos(x/3)}$

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

8.5. $\int (\cos x + 5\sin x)^2\, dx$

8.6. $\int \left(\frac{1}{x}+8\right)^{10} \frac{1}{x^2}\, dx$;

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

8.8. $\int \frac{dx}{x^2 \cos(\pi/x)}$;

8.9. $\int \frac{x\sqrt{x}dx}{3+\sqrt{x^5}}$

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

8.11. $\int \frac{\sin 2x}{e^{3\cos^2 x}}dx$;

8.12. $\int \frac{\sin^2(\operatorname{arctg} x)\,dx}{1+x^2}$;

8.13. $\int (\cos 5x - 3\sin 5x)^2\, dx$;

8.14. $\int e^{4-3\sin^2 x} \sin 2x dx$

8.15. $\int \frac{dx}{\sqrt{9-4x^2}\, e^{\arcsin\frac{2x}{3}}}$;

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

8.17. $\int \left(3\sin\frac{x}{7} + \cos\frac{x}{7}\right)^2 dx$;

8.18. $\int \frac{\arcsin^2 x - 2}{\operatorname{acsin} x} \frac{dx}{\sqrt{1-x^2}}$;

8.19. $\int \frac{12^x}{\cos^2 12^x}dx$;

8.20. $\int \frac{\ln x}{x\sqrt{\ln^4 x + 9}}dx$;

8.21. $\int \left(\frac{1}{\cos 3x} + \sin 3x\right)^2 dx$;

8.22. $\int (x+2)\sqrt{x-2}\quad dx$;

8.23. $\int e^{-3x} \operatorname{tg} e^{-3x} dx$;

8.24. $\int \frac{\ln x dx}{x(\ln^4 x - 16)}$;

8.25. $\int \frac{dx}{e^{2x}+4}$;

8.26. $\int \frac{\sin 2x dx}{\sqrt{4-\sin^4 x}}$;

8.27. $\int \frac{\sin^3 x dx}{\cos^4 x}$;

8.28. $\int x(5x-1)^{10} dx$;

8.29. $\int \left(\sin 2x - \frac{1}{\cos 2x}\right)^2 dx$;

8.30. $\int \frac{x}{\sqrt[3]{x-1}}\, dx$.

Задача 9.

9.1. $\int \frac{(x^7+3x^3)dx}{\sqrt{4-9x^8}}$;

9.2. $\int \frac{(x^3-2x)dx}{\sqrt{4+x^4}}$;

9.3. $\int \frac{(2x^3-3x^7)dx}{4-x^8}$;

9.4. $\int \frac{1+x}{\sqrt{9-4x^2}}\, dx$

9.5. $\int \frac{(x^2-2x^5)dx}{\sqrt{x^6-9}}$;

9.6. $\int \frac{(x-3x^3)dx}{\sqrt{x^4-25}}$;

9.7. $\int \frac{(e^x-e^{2x})dx}{9+e^{2x}}$

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

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

9.10. $\int \frac{2x+e^{\operatorname{arctg}(x/3)}}{9+x^2}\, dx$;

9.11. $\int \frac{(x^7-5x^3)dx}{\sqrt{4+9x^8}}$;

9.12. $\int \frac{(x^3+5x)dx}{\sqrt{3-x^4}}$;

9.13. $\int \frac{(x^3+2x^7)dx}{x^8+81}$;

9.14. $\int \frac{2x-5}{x^2+16}\, dx$;

9.15. $\int \frac{(x^2+3x^5)dx}{\sqrt{x^6+12}}$

9.16. $\int \frac{(x^3-5x)dx}{\sqrt{x^4-2}}$

9.17. $\int \frac{(e^{-2x}+3e^{-4x})dx}{e^{-4x}-25}$

9.18. $\int \frac{5x^3+7x}{\sqrt{49-x^4}}dx$;

9.19. $\int \frac{x^3-x}{9x^4+16}\, dx$;

9.20. $\int \frac{x-\sqrt{\arcsin 2x}}{\sqrt{1-4x^2}}\, dx$;

9.21. $\int \frac{(x^7 - x^3)dx}{\sqrt{64 - x^8}}$;

9.22. $\int \frac{(3x^3 + 5x)dx}{\sqrt{7 + x^4}}$;

9.23. $\int \frac{(x^3 - 5x^7)dx}{81 + x^8}$;

9.24. $\int \frac{x^2 - 7x^5}{\sqrt{1 - 4x^6}}dx$;

9.25. $\int \frac{\arccos 5x - x}{\sqrt{1 - 25x^2}}dx$;

9.26. $\int \frac{x^3 - 7x}{x^4 + 16}dx$;

9.27. $\int \frac{x^7 + 8x^3}{\sqrt{100 - x^8}}dx$;

9.28. $\int \frac{(e^{3x} + 5e^{6x})dx}{9 - e^{6x}}$;

9.29. $\int \frac{(6x + x^3)dx}{\sqrt{x^4 - 3}}$;

9.30. $\int \frac{(2x^2 + 3x^5)dx}{\sqrt{x^6 - 7}}$.

Задача 10.

10.1. $\int (x-1)\cos 2x\,dx$

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

10.3. $\int (2x+1)e^{-3x}\,dx$

10.4. $\int \arccos x\,dx$

10.5. $\int (3x+2)\sin\frac{x}{3}dx$

10.6. $\int x\,\mathrm{arctg}\,x\,dx$

10.7. $\int x2^{-x}\,dx$

10.8. $\int (x^2 - x)\log_3 x\,dx$

10.9. $\int (\pi - 5x)\cos \pi x\,dx$

10.10. $\int (x^2 - 2x + 4)\ln x\,dx$

10.11. $\int (2-3x)e^{-x/2}\,dx$

10.12. $\int \arcsin x\,dx$

10.13. $\int (3-x)\sin \pi x\,dx$

10.14. $\int \mathrm{arcctg}\,x\,dx$

10.15. $\int (1-2x)\sqrt{5^{-x}}\,dx$

10.16 $\int (x^2 + x - 4)\log_4 x\,dx$

10.17. $\int (x+5)\cos 7x\,dx$

10.18. $\int (x+2)\ln x\,dx$

10.19. $\int (2x+7)e^{-4x}\,dx$

10.20. $\int (1-x)\,\mathrm{arcctg}\,x\,dx$

10.21. $\int (\pi/2 - 2x)\sin 3x dx$

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

10.23. $\int (5x+1)7^x\,dx$

10.24. $\int (x^3 + x)\log_2 x\,dx$

10.25. $\int (2x - \pi)\cos\frac{\pi x}{3}dx$

10.26. $\int x^4 \ln x\ \ dx$

10.27. $\int (2-3x)e^{-6x}\,dx$

10.28. $\int (x+2)\,\mathrm{arctg}\,2x\,dx$

10.29. $\int (2-9x)\sin\frac{3x}{2}dx$

10.30. $\int \arccos 5x\,dx$

Задача 11.

11.1. $\int (4-3x)e^{-3x}dx.$

11.2. $\int \operatorname{arctg}\sqrt{4x-1}dx.$

11.3. $\int (3x+4)e^{3x}dx.$

11.4. $\int (4x-2)\cos 2xdx.$

11.5. $\int (4-16x)\sin 4xdx.$

11.6. $\int (5x-2)e^{3x}dx.$

11.7. $\int (1-6x)e^{2x}dx.$

11.8. $\int \ln\left(x^2+4\right)dx.$

11.9. $\int \ln\left(4x^2+1\right)dx.$

11.10. $\int (2-4x)\sin 2xdx.$

11.11. $\int \operatorname{arctg}\sqrt{6x-1}dx.$

11.12. $\int e^{-2x}(4x-3)dx.$

11.13. $\int e^{-3x}(2-9x)dx.$

11.14. $\int \operatorname{arctg}\sqrt{2x-1}dx.$

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

11.16. $\int \operatorname{arctg}\sqrt{5x-1}dx.$

11.17. $\int (5x+6)\cos 2xdx.$

11.18. $\int (3x-2)\cos 5xdx.$

11.19. $\int \left(x\sqrt{2}-3\right)\cos 2xdx.$

11.20. $\int (4x+7)\cos 3xdx.$

11.21. $\int (2x-5)\cos 4xdx.$

11.22. $\int (8-3x)\cos 5xdx.$

11.23. $\int (x+5)\sin 3xdx.$

11.24. $\int (2-3x)\sin 2xdx.$

11.25. $\int (4x+3)\sin 5xdx.$

11.26. $\int (7x-10)\sin 4xdx.$

11.27. $\int \left(\sqrt{2}-8x\right)\sin 3xdx.$

11.28. $\int \frac{xdx}{\cos^2 x}.$

11.29. $\int \frac{xdx}{\sin^2 x}.$

11.30. $\int x\sin^2 xdx.$

Задача 12.

12.1. $\int \frac{\ln^2 x}{x^3}dx;$

12.2. $\int x^3 e^{-x^2}dx;$

12.3. $\int x\operatorname{arcctg}^2\frac{x}{2}dx;$

12.4. $\int (x^2-2x)\cos \pi x\,dx;$

12.5. $\int \frac{\ln^2 x}{\sqrt{x}}dx;$

12.6. $\int x^5 \sin x^3 dx;$

12.7. $\int (x^2+2x-5)\sin 2x dx$

12.8. $\int x^2 e^{-5x} dx$;

12.9. $\int \ln^2 2x\, dx$;

12.10. $\int x^2 \cos^2 x\, dx$;

12.11. $\int \frac{\lg^2 x}{x^2} dx$;

12.12. $\int (1-x^2)e^{2x}\, dx$;

12.13. $\int x \operatorname{arctg}^2 x\, dx$;

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

12.15. $\int (x^3-x)\cos x dx$;

12.16. $\int (x+2-x^2)e^{-3x}\, dx$

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

12.18. $\int (x^2-2x)\sin^2 x\, dx$

12.19. $\int (4+x^2)5^x\, dx$;

12.20. $\int \ln(x^2+9)\, dx$;

12.21. $\int \frac{\ln^2 x}{\sqrt{x^5}} dx$;

12.22. $\int x^2 \sin x \cos x\, dx$;

12.23. $\int \sqrt{x-2}\ln^2(x-2)\, dx$

12.24. $\int \arcsin^2 x\, dx$;

12.25. $\int \ln^2(x+4) dx$;

12.26. $\int (x^2-x)\sin 3x\, dx$;

12.27. $\int x \operatorname{arcctg}^2 x dx$;

12.28. $\int (x^2+3x^3)e^x\, dx$;

12.29. $\int x \arccos^2 x\, dx$;

12.30. $\int x^3 \sin x\, dx$.

Задача 13.

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

13.2. $\int \frac{\operatorname{arctg}\sqrt{x} dx}{\sqrt{x}}$;

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

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

13.5. $\int \frac{3^{\frac{1}{x}} dx}{x^3}$;

13.6. $\int e^{2x}\cos x\, dx$;

13.7. $\int \frac{x\arcsin x}{\sqrt{(1-x^2)^3}} dx$

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

13.9. $\int \frac{x\operatorname{arctg} x}{\sqrt{1+x^2}} dx$;

13.10. $\int \frac{\operatorname{arctg} x}{x^2(x^2+1)} dx$;

13.11. $\int \frac{x\operatorname{arctg} x}{(1+x^2)^2} dx$;

13.12. $\int \frac{xe^x}{\sqrt{1+e^x}} dx$;

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

13.14. $\int e^{-3x}\sin 2x\, dx$;

13.15. $\int \operatorname{arctg}\sqrt{2x-1} dx$;

13.16. $\int \frac{x\sin x}{\cos^3 x} dx$;

13.17. $\int \frac{x\ln x dx}{\sqrt{(x^2-1)^3}}$;

13.18. $\int \frac{\operatorname{arctg} x}{(1+x)^3} dx$;

13.19. $\int \frac{\arcsin x}{x^2} dx$;

13.20. $\int \cos\ln x\, dx$;

13.21. $\int \frac{\operatorname{arctg} x}{x^4} dx$;

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

13.23. $\int \operatorname{arctg}(1+\sqrt{x}) dx$;

13.24. $\int \sin\sqrt{x}\, dx$;

13.25. $\int \operatorname{arctg}\frac{1}{x} dx$;

13.26. $\int \frac{\arcsin(x/2)}{\sqrt{2-x}} dx$;

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

13.28. $\int \frac{x\cos x}{\sin^3 x} dx$;

13.29. $\int \frac{x^2}{\left(4+x^2\right)^3} dx$;

13.30. $\int \frac{x\ln x dx}{(x^2+9)^2}$.

Задача 14.

14.1 $\int \frac{x^2}{x^2+2x+2} dx$

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

14.3. $\int \frac{x dx}{\sqrt{x^2-2x+2}}$

14.4. $\int \frac{(\ln x-1)dx}{x\sqrt{2\ln x-\ln^2 x+8}}$

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

14.6. $\int \frac{\cos x dx}{\sin^2 x-5\sin x+2}$

14.7. $\int \frac{xdx}{\sqrt{x^4+x^2+1}}$

14.8. $\int \frac{xdx}{\sqrt{1-4x-x^2}}$

14.9. $\int \frac{dx}{x\sqrt{\ln^2 x+4\ln x+7}}$

14.10. $\int \frac{(2x-5)dx}{3x^2+3x-15}$

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

14.12. $\int \frac{(2x+5)dx}{\sqrt{9x^2+6x+2}}$

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

14.14. $\int \frac{\sin x}{\sqrt{8\cos x-\cos^2 x}}dx$

14.15. $\int \frac{(2-x)dx}{\sqrt{x^2+6x+5}}$

14.16. $\int \frac{xdx}{\sqrt{3-2x-x^2}}$

14.17. $\int \frac{(x+2)dx}{\sqrt{3-6x+x^2}}$

14.18. $\int \frac{x^2-2x}{4+4x-x^2}dx$

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

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

14.21. $\int \frac{x^2+8}{x^2-6x+5}dx$

14.22. $\int \frac{(4-3x)dx}{\sqrt{4+6x-x^2}}$

14.23. $\int \frac{e^x dx}{\sqrt{8-e^{2x}-4e^x}}$

14.24. $\int \frac{4-x^2}{x^2-2x+3}dx$

14.25 $\int \frac{\ln x\,dx}{x(\ln^2 x+12\ln x+40)}$

14.26. $\int \frac{xdx}{\sqrt{4x-3-x^2}}$

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

14.28 $\int \frac{\sin x}{\sqrt{\cos^2 x-4\cos x+3}}dx$

14.29. $\int \frac{2^x dx}{4^x+2^{x+1}+5}$

14.30. $\int \frac{5x-3}{\sqrt{6x-x^2}}dx$

Задача 15.

15.1. $\int \frac{x^4-4x^3+6x^2+2}{x^3-3x^2+2x}dx$

15.2. $\int \frac{x^5-8}{x^3-4x}dx$

15.3. $\int \frac{x^5+2x^4-14x^3+13x^2+7x+3}{x^3+2x^2-13x+10}dx$

15.4. $\int \frac{x^4+2x^3+6x^2+8x-9}{x^3+2x^2-3x}dx$

15.5. $\int \frac{x^5-x^4-6x^3+13x+6}{x^3-x^2-6x}dx$

15.6. $\int \frac{3x^4-8x^3-27x^2+33x+26}{x^3-3x^2-6x+8}dx$

15.7. $\int \frac{x^4-5x^3+5x^2+4x-8}{x^3-3x^2+2x}dx$

15.8. $\int \frac{x^5+5x^4+5x^3+9x^2+7x+8}{x^3-3x^2+2x}dx$

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

15.10. $\int \frac{2x^4-22x^2-27x+27}{x^3-9x}dx$

15.11. $\int \frac{2x^4+3x^3-11x^2-7x+6}{x^3+x^2-6x}dx$

15.12. $\int \frac{9-3x^4-11x^3+13x}{x^3+4x^2+3x}dx$

15.13. $\int \frac{x^5-3x^4-13x^3+15x^2+19x-15}{x^3-2x^2-15x}dx$

15.14. $\int \frac{x^4-2x^3-3x^2-11x+9}{x^3-4x^2-x+4}dx$

15.15. $\int \frac{x^4-4x^3-10x^2+27x+24}{x^3-x^2-12x}dx$

15.16. $\int \frac{2x^4-8x^3-4x^2-14x+16}{x^3-5x^2-x+5}dx$

15.17. $\int \frac{x^4-7x^3+5x^2+46x-80}{x^3-3x^2-4x+12}dx$

15.18. $\int \frac{x^4+3x^3-12x^2-18x-12}{x^3-2x^2-3x}dx$

15.19. $\int \frac{x^4+4x^3-8x^2-15x+18}{x^3-9x}dx$

15.20. $\int \frac{3x^4-x^3-45x^2+16x-16}{x^3-16x}dx$

15.21. $\int \frac{2x^4+3x^3-47x^2-50x-100}{x^3-25x}dx$

15.22. $\int \frac{-x^4+10x^3-37x^2+51x-17}{x^3-6x^2+11x-6}dx$

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

15.24. $\int \frac{x^5+x^4-14x^3-15x^2+34x+30}{x^3+5x^2+6x}dx$

15.25. $\int \frac{x^6+4x^5-21x^4-x^3-x^2-4x-42}{x^3+4x^2-21x}dx$

15.26. $\int \frac{x^4-3x^3-8x^2+43x-64}{x^3-x^2-14x+24}dx$

15.27. $\int \frac{x^5-41x^3+114x+108}{x^3-36x}dx$

15.28. $\int \frac{3x^4+2x^3-34x^2-73x+24}{x^3-x^2-12x}dx$

15.29. $\int \frac{x^4+x^3+3x^2+2}{x^3-3x^2+2x}dx$

15.30. $\int \frac{x^4-4x^3-6x^2+10x+23}{x^3-5x^2-x+5}dx$

Задача 16.

16.1. $\int \frac{x^4}{x^4-2x^2+1}dx;$

16.2. $\int \frac{2x^4+8x^3+x^2+x-20}{x^3(x+5)}dx;$

16.3. $\int \frac{3x^2-19}{(x+7)(x^2-2x+1)}dx;$

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

16.5. $\int \frac{2x^2-3x+3}{x^3-2x^2+x}dx;$

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

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

16.8. $\int \frac{x^4}{(x^2-4)^2}dx;$

16.9. $\int \frac{11x+16}{(x-1)(x+2)^2}dx;$

16.10. $\int \frac{4+4x-4x^2}{x^4-4x^3+4x^2}dx;$

16.11. $\int \frac{2x^3-4x^2+6x+5}{x^4+5x^3}dx;$

16.12. $\int \frac{3x^3+5x^2+7x+3}{x^4+x^3}dx;$

16.13. $\int \frac{x^3+6x^2-10x+52}{(x-2)(x+2)^3}dx;$

16.14. $\int \frac{2x^4-13x^3+16x^2+27x-54}{(x-3)^3x^2}dx;$

16.15. $\int \frac{5x^2-6x+5}{(x-3)^2(x+1)^2}dx;$

16.16. $\int \frac{5x-8}{x^3-4x^2+4x}dx;$

16.17. $\int \frac{2x^3-6x^2+7x-4}{(x-2)(x-1)^3}dx;$

16.18. $\int \frac{x^4-12x^2+24x+27}{(x^2-9)^2}dx;$

16.19. $\int \frac{2x^3+16x^2+37x+32}{x(x+2)^3}dx;$

16.20. $\int \frac{5x^4-6x^3+3x^2+4x-2}{x^3(x-1)^2}dx;$

16.21. $\int \frac{9x^2+4x+12}{x^4(x+3)}dx;$

16.22. $\int \frac{16x+16-x^4-2x^3+x^2}{x^2(x+2)^3}dx;$

16.23. $\int \frac{14x^3-2x^4-8x^2+5x+50}{x^3(x-5)^2}dx;$

16.24. $\int \frac{27x-x^3-2x^2-27}{(x-3)^3x^2}dx;$

16.25. $\int \frac{x^4+6x^3+18x-9}{(x-1)^2(x+3)^2}dx;$

16.26. $\int \frac{5x^4-3x^3+7x^2-8x+4}{x^3(x-1)^2}dx;$

16.27. $\int \frac{2x^3+24x-8}{(x-1)^2(x+2)^2}dx;$

16.28. $\int \frac{2x^3+6x^2+7x+1}{(x-1)(x+1)^3}dx;$

16.29. $\int \frac{x^3+4x^2+7x+5}{(x+1)(x+2)^3}dx$;

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

Задача 17.

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

17.2. $\int \frac{dx}{x^2(x^2+9)}$;

17.3. $\int \frac{7x^2-x^3-4x+22}{(x^2+1)(x^2+4)}dx$;

17.4. $\int \frac{x^3+6x^2+8x+8}{(x^2+4)(x+2)^2}dx$;

17.5. $\int \frac{dx}{x^2(x^2+4)}$;

17.6. $\int \frac{3x^2+x+46}{(x^2+9)(x-1)^2}dx$;

17.7. $\int \frac{3x^3+6x^2+5x-1}{(x+1)^2(x^2+2)}dx$

17.8. $\int \frac{6x^2+2x+12}{(x^2+9)(x-1)^2}dx$;

17.9. $\int \frac{24+33x+4x^2-x^3}{(x^2+3)(x+3)^2}dx$;

17.10 $\int \frac{3x^3-8x^2-13x+17}{(x^2+4)(x-3)^2}dx$;

17.11. $\int \frac{x^3-5x^2-5x-10}{(x^2+5)x^2}dx$;

17.12. $\int \frac{8x^2-3x^3-12x+37}{(x^2+9)(x^2+4)}dx$;

17.13. $\int \frac{4x^2-14x-8}{(x^2+9)(x+1)^2}dx$;

17.14. $\int \frac{5x^3-4x^2+15x-11}{(x^2+4)(x^2-2x+1)}dx$;

17.15. $\int \frac{2x^3+3x^2+4x+28}{(x^2+4)(x^2+4x+4)}dx$;

17.16. $\int \frac{2x^3-4x^2+8x-18}{(x^2+6)(x^2+4)}dx$;

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

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

17.19. $\int \frac{3x^3-6x^2+14x-29}{(x^2+4)(x^2+5)}dx$;

17.20. $\int \frac{3x^3+6x^2+5x-1}{(x+1)^2(x^2+2)}dx$;

17.21. $\int \frac{x^3+2x^2-35x+27}{(x^2+2)(x-3)^2}dx$;

17.22. $\int \frac{4-x^3-3x^2+8x}{x^2(x^2+4)}dx$

17.23. $\int \frac{2x^3-4x^2+6x-5}{(x^2+1)(x^2+2)}dx$;

17.24. $\int \frac{3x^3+9x^2+13x-27}{(x^2+16)(x+1)^2}dx$;

17.25. $\int \frac{-x^3+7x^2+43x-23}{(x-1)^2(x^2+25)}dx$;

17.26. $\int \frac{4x^2+8x+6}{(x^2+3)(x^2+1)}dx$;

17.27. $\int \frac{x^3-4x^2-27x+3}{(x+5)^2(x^2+4)}dx$;

17.28. $\int \frac{49-4x^2+147x}{x^2(x^2+49)}dx$;

17.29. $\int \frac{x^3+8x^2-x+12}{(x^2+9)(x+1)^2}dx$;

17.30. $\int \frac{3x^3+2x^2+9x-4}{(x^2+1)(x^2+7)}dx$.

Задача 18.

18.1. $\int \frac{3x^2-x+28}{(x+4)(x^2+2x+8)}dx$;

18.2. $\int \frac{2x^2-8x+13}{(x-1)(x^2+2x+4)}dx$;

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

18.4. $\int \frac{x^3+x^2-5}{x^3-8}dx$;

18.5. $\int \frac{3x^2+11x+8}{(x+2)\left(x^2+2x+2\right)}dx$;

18.6. $\int \frac{3x^2+29}{(x-3)(x^2+4x+7)}dx$;

18.7. $\int \frac{7x+20}{(x+2)(x^2+6x+14)}dx$;

18.8. $\int \frac{2x^2+7x+9}{(x^2+4x+9)(x+3)}dx$;

18.9. $\int \frac{2x-x^2-15}{(x-3)(x^2+2x+3)}dx$;

18.10. $\int \frac{dx}{x^3+27}$;

18.11. $\int \frac{3x^2+4x+9}{(x+1)(x^2+2x+5)}dx$;

18.12. $\int \frac{2x^3-4x^2-16x-12}{(x-1)^2(x^2+4x+5)}dx$;

18.13. $\int \frac{(2x^2+10x+3)dx}{(x+7)(x^2+4x+10)}$;

18.14. $\int \frac{x^3-x+1}{x^3+8}dx$;

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

18.16. $\int \frac{(2x+3)\,dx}{x^2(x^2+2x+2)}$;

18.17. $\int \frac{3x^2+11x+16}{(x+2)\left(x^2+3x+4\right)}dx$;

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

18.19. $\int \frac{3x^2+13x+34}{(x+2)(x^2+4x+8)}dx$;;

18.20. $\int \frac{3x^2+33}{(x-5)\left(x^2+4x+9\right)}dx$;

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

18.22. $\int \frac{4x^2+47}{(x-4)(x^2+3x+9)}dx$;

18.23. $\int \frac{x^5+2x^3+4x+4}{x^4+2x^3+2x^2}dx$;

18.24. $\int \frac{(2x+5)dx}{x^3-125}$;

18.25. $\int \frac{x^2-28x+15}{(x+5)(x^2-5x+10)}dx$;

18.26. $\int \frac{x^3+4x^2-6x+13}{x^4-6x^3+13x^2}dx$;

18.27. $\int \frac{x^2-21x+80}{(x+1)(x^2-8x+25)}dx$;

18.28. $\int \frac{22x+36}{(x-3)(x^2+4x+13)}dx$;

18.29. $\int \frac{x^2-19x+134}{(x-1)(x^2-6x+34)}dx$;

18.30. $\int \frac{4x^3+24x^2+20x-28}{(x+3)^2(x^2+2x+2)}dx$

Задача 19.

19.1. $\int \frac{x^3+6x^2+13x+9}{(x+1)(x+2)^3}dx.$

19.2. $\int \frac{x^3+6x^2+13x+8}{x(x+2)^3}dx.$

19.3. $\int \frac{x^3-6x^2+13x-6}{(x+2)(x-2)^3}dx.$

19.4. $\int \frac{x^3+6x^2+14x+10}{(x+1)(x+2)^3}dx.$

19.5. $\int \frac{x^3-6x^2+11x-10}{(x+2)(x-2)^3}dx.$

19.6. $\int \frac{x^3+6x^2+11x+7}{(x+1)(x+2)^3}dx.$

19.7. $\int \frac{2x^3+6x^2+7x+1}{(x-1)(x+1)^3}dx.$

19.8. $\int \frac{x^3+6x^2+10x+10}{(x-1)(x+2)^3}dx.$

19.9. $\int \frac{2x^3+6x^2+7x+2}{x(x+1)^3}dx.$

19.10. $\int \frac{x^3-6x^2+13x-8}{x(x-2)^3}dx.$

19.11. $\int \frac{x^3-6x^2+13x-7}{(x+1)(x-2)^3}dx.$

19.12. $\int \frac{x^3-6x^2+14x-6}{(x+1)(x-2)^3}dx.$

19.13. $\int \frac{x^3-6x^2+10x-10}{(x+1)(x-2)^3}dx.$

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

19.15. $\int \frac{3x^3+9x^2+10x+2}{(x-1)(x+1)^3}dx.$

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

19.17. $\int \frac{2x^3+6x^2+7x+4}{(x+2)(x+1)^3}dx.$

19.18. $\int \frac{2x^3+6x^2+5x}{(x+2)(x+1)^3}dx.$

19.19. $\int \frac{2x^3+6x^2+7x}{(x-2)(x+1)^3}dx.$

19.20. $\int \frac{2x^3+6x^2+5x+4}{(x-2)(x+1)^3}dx.$

19.21. $\int \frac{x^3+6x^2+4x+24}{(x-2)(x+2)^3}dx.$

19.22. $\int \frac{x^3+6x^2+14x+4}{(x-2)(x+2)^3}dx.$

19.23. $\int \frac{x^3+6x^2+18x-4}{(x-2)(x+2)^3}dx.$

19.24. $\int \frac{x^3+6x^2+10x+12}{(x-2)(x+2)^3}dx.$

19.25. $\int \frac{x^3-6x^2+14x-4}{(x+2)(x-2)^3}dx.$

19.26. $\int \frac{x^3+6x^2+15x+2}{(x-2)(x+2)^3}dx.$

19.27. $\int \frac{2x^3-6x^2+7x-4}{(x-2)(x-1)^3}dx.$

19.28. $\int \frac{2x^3-6x^2+7x}{(x+2)(x-1)^3}dx.$

19.29. $\int \frac{x^3+6x^2-10x+52}{(x-2)(x+2)^3}dx.$

19.30. $\int \frac{x^3-6x^2+13x-6}{(x+2)(x-2)^3}dx.$

Задача 20.

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

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

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

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

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

20.6. $\int \frac{2x^3+11x^2+16x+10}{(x+2)^2(x^2+2x+3)}dx.$

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

20.8. $\int \frac{x^3+9x^2+21x+21}{(x+3)^2(x^2+3)}dx.$

20.9. $\int \frac{x^3+6x^2+8x+8}{(x+2)^2(x^2+4)}dx.$

20.10. $\int \frac{x^3+5x^2+12x+4}{(x+2)^2(x^2+4)}dx.$

20.11. $\int \frac{2x^3-4x^2-16x-12}{(x-1)^2(x^2+4x+5)}dx.$

20.12. $\int \frac{-3x^3+13x^2-13x+1}{(x-2)^2(x^2-x+1)}dx.$

20.13. $\int \frac{x^3+2x^2+10x}{(x+1)^2(x^2-x+1)}dx.$

20.14. $\int \frac{3x^3+x+46}{(x-1)^2(x^2+9)}dx.$

20.15. $\int \frac{4x^3+24x^2+20x-28}{(x+3)^2(x^2+2x+2)}dx.$

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

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

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

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

20.20. $\int \frac{2x^3+7x^2+7x+9}{(x^2+x+1)(x^2+x+2)}dx.$

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

20.22. $\int \frac{3x^3+4x^2+6x}{(x^2+2)(x^2+2x+2)}dx.$

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

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

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

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

20.27. $\int \frac{x^3+2x^2+x+1}{(x^2+x+1)(x^2+1)}dx.$ **20.28.** $\int \frac{x+4}{(x^2+x+2)(x^2+2)}dx.$

20.29. $\int \frac{2x^3+2x^2+2x+1}{(x^2+x+1)(x^2+1)}dx.$ **20.30.** $\int \frac{3x^3+7x^2+12x+6}{(x^2+x+3)(x^2+2x+3)}dx.$

Задача 21.

21.1. $\int \cos^4 x\,dx;$

21.2. $\int \sin^5 x\cos^2 x\,dx;$

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

21.4. $\int \frac{dx}{\cos^3 x};$

21.5. $\int \mathrm{tg}^4 x dx;$

21.6. $\int \sin^2 x\cos^2 x\,dx;$

21.7. $\int \sin^4 x\cos^3 x\,dx;$

21.8. $\int \frac{dx}{\cos^3 x\sin^3 x};$

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

21.10. $\int \mathrm{tg}^5 x dx;$

21.11. $\int \cos^6 x\,dx;$

21.12. $\int \sin^7 x\,dx$

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

21.14. $\int \frac{\cos^2 x dx}{\sin^5 x};$

21.15. $\int \frac{dx}{\mathrm{tg}^3 x}$

21.16. $\int \cos^4 x\sin^2 x\,dx;$

21.17. $\int \sqrt[3]{\sin^2 x}\cos^3 x\,dx;$

21.18. $\int \frac{dx}{\cos x\sin^7 x};$

21.19. $\int \frac{\sin^2 x dx}{\cos^5 x};$

21.20. $\int \mathrm{tg}^6 x dx;$

21.21. $\int \cos^2 x\sin^4 x\,dx;$

21.22. $\int \cos^5 x\,dx;$

21.23. $\int \frac{dx}{\cos^4 x\sin^4 x};$

21.24. $\int \frac{dx}{\sin\frac{x}{2}\sqrt{\cos^3\frac{x}{2}}};$

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

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

21.27. $\int \cos^5 x\sin^3 x\,dx;$

21.28. $\int \frac{dx}{\sqrt{\cos^5 x\sin^3 x}};$

21.29. $\int \frac{\sin^3 x}{\cos^4 x}dx;$

21.30. $\int \mathrm{ctg}^6 x dx$

Задача 22.

22.1. $\int \frac{dx}{5-4\sin x+3\cos x};$

22.2. $\int \frac{8+\mathrm{tg}\,x}{9\sin^2 x+\cos^2 x}dx;$

22.3. $\int \frac{dx}{3\sin x+5\cos x};$

22.4. $\int \frac{\sin^2 x}{\cos^2 x+1}dx;$

22.5. $\int \frac{dx}{5-3\cos x};$

22.6. $\int \frac{dx}{\sin^2 x-\sin x\cos x+5\cos^2 x};$

22.7. $\int \frac{dx}{8-4\sin x+7\cos x}$;

22.8. $\int \frac{dx}{2\sin^2 x+7\cos^2 x}$;

22.9. $\int \frac{dx}{5+4\sin x}$;

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

22.11 $\int \frac{\cos x}{2\sin x+\cos x+2}dx$.;

22.12. $\int \frac{\sin^2 x}{3\sin^2 x-\cos^2 x}dx$;

22.13. $\int \frac{(1+\sin x)dx}{\sin x(1+\cos x)}$;

22.14. $\int \frac{dx}{5\sin^2 x-3\cos^2 x}$;

22.15. $\int \frac{dx}{2\sin x-3\cos x}$;

22.16. $\int \frac{dx}{\sin^2 x+\mathrm{tg}^2 x}$;

22.17. $\int \frac{dx}{4\sin x+3\cos x+1}$;

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

22.19. $\int \frac{dx}{3\cos x-\sin x}$;

22.20. $\int \frac{\sin^2 xdx}{1+\cos^2 x}$;

22.21. $\int \frac{\cos xdx}{\cos x-\sin x-1}$;

22.22. $\int \frac{dx}{(6-\mathrm{tg}\,x)\sin 2x}$;

22.23. $\int \frac{dx}{5\sin 2x+4}$;

22.24. $\int \frac{(4+\mathrm{tg}\,x)dx}{2\sin^2 x+18\cos^2 x}$;

22.25. $\int \frac{\sin xdx}{2+\sin x}$;

22.26. $\int \frac{2+\mathrm{tg}\,x}{\sin^2 x+2\cos^2 x-3}dx$;

22.27. $\int \frac{dx}{\cos x+\cos^2 x}$;

22.28. $\int \frac{4\,\mathrm{tg}\,x-5}{1-\sin 2x+4\cos^2 x}dx$;

22.29. $\int \frac{1+\cos x}{1+\cos x+\sin x}dx$;

22.30. $\int \frac{11-3\operatorname{tg} x}{\operatorname{tg} x+3}dx$.

Задача 23.

23.1. $\int \frac{dx}{\sqrt{x}(1+\sqrt[3]{x})}$;

23.2. $\int \sqrt{\frac{x}{4-x}}dx$;

23.3. $\int \frac{\sqrt{x-1}+1}{\sqrt[3]{x-1}}dx$;

23.4. $\int \frac{dx}{\sqrt{2x-1}-\sqrt[4]{2x-1}}$;

23.5. $\int \frac{\sqrt{x}-1}{1+\sqrt[3]{x}}dx$;

23.6. $\int \sqrt{\frac{2-\sqrt{x}}{2+\sqrt{x}}}dx$;

23.7. $\int \frac{dx}{x(\sqrt{x}+\sqrt[5]{x^2})}$;

23.8. $\int \frac{xdx}{\sqrt{x+1}+\sqrt[3]{x+1}}$;

23.9. $\int \frac{dx}{\sqrt{x}+\sqrt[3]{x}+2\sqrt[4]{x}}$;

23.10. $\int \frac{x^2+\sqrt{x+1}}{\sqrt[3]{x+1}}dx$;

23.11. $\int \frac{\sqrt{x}}{\sqrt[4]{x^3}+1}dx$;

23.12. $\int \sqrt{\frac{x-1}{x+1}}\frac{dx}{x^2}$;

23.13. $\int \frac{\sqrt{x}}{\sqrt{x}-\sqrt[3]{x}}dx$;

23.14. $\int \sqrt{\frac{6-x}{x-14}}dx$;

23.15. $\int \frac{(2+\sqrt[3]{x})dx}{(\sqrt{x}+2\sqrt[3]{x}+\sqrt[6]{x})\sqrt{x}}$

23.16 $\int \frac{x+\sqrt{3x-2}-10}{\sqrt{3x-2}+7}dx$

23.17. $\int \frac{1-\sqrt{x}+2\sqrt[3]{x}}{x+2\sqrt{x^3}+\sqrt[3]{x^4}}dx$

23.18. $\int \sqrt{\frac{1-\sqrt{x}}{1+\sqrt{x}}}dx$;

23.19. $\int \frac{6-\sqrt{x}+\sqrt[4]{x}}{\sqrt{x^3}-7x-6\sqrt[4]{x^3}}dx$

23.20. $\int \frac{1-\sqrt{x-1}}{\sqrt{x-1}+\sqrt[3]{x-1}}dx;$

23.21. $\int \sqrt{\frac{1-x}{x+1}}\frac{dx}{x};$

23.22. $\int \frac{5+\sqrt{x+2}}{3\sqrt{x+2}+6\sqrt[3]{x+2}}dx$

23.23. $\int \frac{\sqrt{x+3}-2}{6\sqrt[3]{x+3}+24}dx;$

23.24. $\int \frac{5+\sqrt{x+7}}{6\sqrt{x+7}+12\sqrt[3]{x+7}}dx$

23.25. $\int \frac{xdx}{\sqrt{x-2}+\sqrt[3]{x-2}};$

23.26. $\int \frac{2+\sqrt{x+4}}{2\sqrt{x+4}+\sqrt[3]{x+4}}dx$

23.27. $\int \sqrt{\frac{2+x}{3-2x}}dx;$

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

23.29. $\int \frac{\sqrt{x+6}}{\sqrt[4]{(x+6)^3}+8}dx;$

23.30 $\int \frac{dx}{\sqrt[6]{(x-1)^5}-3\sqrt[4]{(x-1)^3}+2\sqrt[3]{(x-1)^2}}$

Задача 24.

24.1. $\int_0^{\ln 5} \frac{e^x dx}{\sqrt{4e^x+5}};$

24.2. $\int_{-7}^{0} \frac{x}{\sqrt[3]{x-1}}dx;$

24.3. $\int_{\sqrt{2}}^{2} \frac{dx}{x\sqrt{x^2-1}};$

24.4. $\int_{\ln 2}^{\ln 10} \frac{dx}{\sqrt{e^x-1}};$

24.5. $\int_0^1 x(2-x^2)^5 dx;$

24.6. $\int_0^1 \frac{e^x dx}{e^{2x}+1};$

24.7. $\int_0^5 \frac{dx}{2x+\sqrt{3x+1}};$

24.8. $\int_0^{\ln 2} \frac{e^x dx}{\sqrt{e^{2x}+5}};$

24.9. $\int_{\pi/4}^{\pi/3} \frac{\cos x}{\sin^3 x}dx;$

24.10. $\int_1^e \frac{\sqrt[3]{\ln^2 x}}{x}dx;$

24.11. $\int_2^3 (x+2)\sqrt{x-2}\,dx;$

24.12. $\int_0^3 \frac{2x+e^{\operatorname{arctg}(x/3)}}{9+x^2}dx;$

24.13. $\int_1^e \frac{\ln x dx}{x\sqrt{\ln^2 x+6\ln x+10}}$

24.14. $\int_0^{\ln 2} e^x \cos e^x dx;$

24.15. $\int_0^2 \frac{x^3 dx}{x^4+1};$

24.16. $\int_0^{\pi/3} \frac{\sin x}{\sqrt{\cos x}}dx;$

24.17. $\int_{-1}^1 \frac{xdx}{\sqrt{5-4x}};$

24.18. $\int_0^{\ln 5} \sqrt{e^x-1}\,dx;$

24.19. $\int_{\pi/6}^{\pi/4} \frac{\cos x}{\sin^5 x}dx;$

24.20. $\int_{e^{-2}}^{e^5} \frac{dx}{x\sqrt[3]{\ln x+3}};$

24.21. $\int_0^1 \frac{x^5 dx}{x^{12}+1};$

24.22. $\int_0^{\pi/4} \frac{dx}{\cos^4 x}$;

24.23. $\int_1^e \frac{\ln x\,dx}{x\sqrt[3]{\ln^2 x+8}}$;

24.24. $\int_0^{\ln\sqrt{2}} e^{2x}(2-e^{2x})^5\,dx$;

24.25. $\int_{\pi/2}^{\pi} \frac{\sin x dx}{\sqrt{2+\cos x}}$;

24.26. $\int_0^{\pi/2} \frac{\sin x dx}{\sqrt[3]{4-3\cos x}}$;

24.27. $\int_1^{e^3} \frac{\sqrt{4-\ln x}}{x}dx$;

24.28. $\int_1^2 \frac{\sqrt{x}}{4+x}\,dx$;

24.29. $\int_{\sqrt[6]{3}}^{\sqrt[6]{6}} x^5\sqrt{7-x^6}\,dx$;

24.30. $\int_0^1 \frac{x^3+2x}{3x^4+2}\,dx$.

Задача 25.

25.1. $\int_1^e \frac{\ln x dx}{\sqrt{x}}$;

25.2. $\int_0^{\pi} (x-2)\cos x\ dx$;

25.3. $\int_0^{\pi/4} \frac{x\,dx}{\cos^4 x}$;

25.4. $\int_0^1 (x-1)e^x dx$;

25.5. $\int_1^e (x^2+1)\cdot\ln x dx$;

25.6. $\int_0^{\pi} (x+3)\sin\frac{x}{2}\ dx$;

25.7. $\int_0^1 \operatorname{arctg} x\,dx$;

25.8. $\int_0^1 (x+3)e^x\ dx$;

25.9. $\int_1^4 e^{\sqrt{x}}dx$;

25.10. $\int_0^{\pi/6} (\pi+2x)\cos 3x\ dx$

25.11. $\int_{-1}^{1/2} \operatorname{arctg}\sqrt{1-2x}dx$;

25.12. $\int_0^{\pi/2} (2x+1)\sin 2x dx$;

25.13. $\int_0^1 \frac{x\operatorname{arcg} x dx}{\sqrt{1+x^2}}$;

25.14. $\int_0^{\pi/2} (x+6)\cos 2x dx$;

25.15. $\int_0^2 \ln(x^2+4)dx$;

25.16. $\int_0^2 (x-2)e^{3x}dx$;

25.17. $\int_1^e (x^2-5x+2)\cdot\ln x dx$

25.18. $\int_0^{\pi/6} \left(x-\frac{\pi}{6}\right)\cos 3x\,dx$

25.19. $\int_0^2 x^3\ln(x+1)dx$;

25.20. $\int_0^{\pi/4} (3x+4)\sin 2x dx$;

25.21. $\int_{e^2}^{e^4} \frac{\ln x}{\sqrt{x}}dx$;

25.22. $\int_0^3 (x-3)e^{2x}dx$;

25.23. $\int_1^e (x^2-2x)\ln x\,dx$;

25.24. $\int_0^{\pi/3} \left(x-\frac{\pi}{3}\right)\sin\frac{3x}{2}dx$

25.25. $\int_0^{\pi/4} \frac{x\,dx}{\cos^2 x}$;

25.26. $\int_0^{\pi/8} (3x+2)\sin 2x dx$;

25.27. $\int_{-1}^0 x^2\ln(x+2)dx$;

25.28. $\int_0^3 (x-3)e^x dx$;

25.29. $\int_1^e \frac{x\ln x dx}{(1+x^2)^2}$;

25.30 $\int_0^{\pi/4} (\pi/2-2x)\cdot\sin 3x dx$.

Задача 26.

26.1. $\int_{-2}^{0}(x^2+5x+6)\cos 2x dx.$

26.2. $\int_{-2}^{0}\left(x^2-4\right)\cos 3x dx.$

26.3. $\int_{-1}^{0}\left(x^2+4x+3\right)\cos x dx.$

26.4. $\int_{-2}^{0}\left(x+2\right)^2\cos 3x dx.$

26.5. $\int_{-4}^{0}\left(x^2+7x+12\right)\cos x dx.$

26.6. $\int_{0}^{\pi}\left(2x^2+4x+7\right)\cos 2x dx.$

26.7. $\int_{0}^{\pi}\left(9x^2+9x+11\right)\cos 3x dx.$

26.8. $\int_{0}^{\pi}\left(8x^2+16x+17\right)\cos 4x dx.$

26.9. $\int_{0}^{2\pi}\left(3x^2+5\right)\cos 2x dx.$

26.10. $\int_{0}^{2\pi}\left(2x^2-15\right)\cos 3x dx.$

26.11. $\int_{0}^{2\pi}\left(3-7x^2\right)\cos 2x dx.$

26.12. $\int_{0}^{2\pi}\left(1-8x^2\right)\cos 4x dx.$

26.13. $\int_{-1}^{0}\left(x^2+2x+1\right)\sin 3x dx.$

26.14. $\int_{0}^{3}\left(x^2-3x\right)\sin 2x dx.$

26.15. $\int_{0}^{\pi}\left(x^2-3x+2\right)\sin x dx.$

26.16. $\int_{0}^{\frac{\pi}{2}}\left(x^2-5x+6\right)\sin 3x dx.$

26.17. $\int_{-3}^{0}\left(x^2+6x+9\right)\sin 2x dx.$

26.18. $\int_{0}^{\frac{\pi}{4}}\left(x^2+17,5\right)\sin 2x dx.$

26.19. $\int_{0}^{\frac{\pi}{2}}\left(1-5x^2\right)\sin x dx.$

26.20. $\int_{\frac{\pi}{4}}^{3}\left(3x-x^2\right)\sin 2x dx.$

26.21. $\int_{1}^{2} x\ln^2 x dx.$

26.22. $\int_{1}^{e^2}\frac{\ln^2 x dx}{\sqrt{x}}.$

26.23. $\int_{1}^{8}\frac{\ln^2 x dx}{\sqrt[3]{x^2}}.$

26.24. $\int_{0}^{1}\left(x+1\right)\ln^2\left(x+1\right)dx.$

26.25. $\int_2^3 (x-1)^3 \ln^2(x-1)\,dx.$

26.26. $\int_{-1}^0 (x+2)^3 \ln^2(x+2)\,dx.$

26.27. $\int_0^2 (x+1)^2 \ln^2(x+1)\,dx.$

26.28. $\int_1^e \sqrt{x}\ln^2 x\,dx.$

26.29. $\int_{-1}^1 x^2 \mathrm{e}^{-\frac{x}{2}}\,dx.$

26.30. $\int_0^1 x^2 \mathrm{e}^{3x}\,dx.$

Задача 27.

27.1. $\int_0^{\pi/2} \frac{dx}{6+\sin^2 x};$

27.2. $\int_0^{\pi/3} \frac{dx}{1-\sin x};$

27.3. $\int_0^{\pi/4} \frac{dx}{4-3\cos^2 x+5\sin^2 x};$

27.4. $\int_{\pi/3}^{\pi/2} \frac{\cos x\,dx}{1+\sin x-\cos x};$

27.5. $\int_0^{\pi/4} \frac{6+\operatorname{tg} x}{9\sin^2 x+4\cos^2 x}dx;$

27.6. $\int_0^{\pi/2} \frac{\sin x\,dx}{1+\sin x+\cos x};$

27.7. $\int_{-\pi/4}^0 \frac{\sin^2 x}{\cos^2 x+3\sin^2 x}dx;$

27.8. $\int_0^{\pi/2} \frac{dx}{1+3\sin x-2\cos x};$

27.9. $\int_0^{\pi/4} \frac{dx}{3\cos^2 x-5\sin^2 x};$

27.10. $\int_0^{\pi/2} \frac{\sin x\,dx}{(1+\sin x)^2};$

27.11. $\int_0^{\pi/4} \frac{\operatorname{tg}^2 x}{9\cos^2 x+\sin^2 x}dx;$

27.12. $\int_0^{\pi/2} \frac{dx}{4+7\cos x};$

27.13. $\int_0^{\pi/4} \frac{dx}{2+3\cos^2 x};$

27.14. $\int_0^{\pi/2} \frac{\sin x\,dx}{2+\sin x};$

27.15. $\int_0^{\pi/4} \frac{dx}{2\sin^2 x+\cos^2 x};$

27.16. $\int_0^{\pi/2} \frac{dx}{4+5\sin x};$

27.17. $\int_0^{\operatorname{arctg} 2} \frac{dx}{2\cos^2 x+3};$

27.18. $\int_{-\pi/3}^0 \frac{dx}{\cos x(1+\cos x)};$

27.19. $\int_0^{\operatorname{arctg} 2} \frac{(3\operatorname{tg} x-1)}{\sin^2 x+4\cos^2 x}dx;$

27.20. $\int_0^{\pi/2} \frac{\cos x dx}{(1+\sin x+\cos x)^2};$

27.21. $\int_0^{\pi/4} \frac{dx}{\sin^2 x+9\cos^2 x};$

27.22. $\int_0^{\pi/2} \frac{1+\cos x}{1+\cos x+\sin x}dx;$

27.23. $\int_{\pi/4}^{\operatorname{arctg} 2} \frac{dx}{\sin^2 2x(2+\cos 2x)};$

27.24. $\int_{-\pi/2}^0 \frac{\sin x}{5+3\sin x}dx;$

27.25. $\int_{\pi/4}^{\pi/2} \frac{(2\operatorname{ctg} x+1)dx}{(2\sin x+\cos x)^2};$

27.26. $\int_0^{\pi/2} \frac{\sin x-\cos x}{(1+\sin x)^2}dx;$

27.27. $\int\limits_0^{\pi/4} \frac{(4\operatorname{tg} x-5)dx}{\sin 2x-4\cos^2 x-1}$;

27.28. $\int\limits_{-\pi/2}^{0} \frac{\cos x}{2+\cos x}\,dx$;

27.29. $\int\limits_0^{\pi/4} \frac{(3\operatorname{tg} x+1)dx}{2\sin 2x-5\cos 2x+1}$;

27.30. $\int\limits_0^{\pi/2} \frac{\sin x}{(1+\cos x+\sin x)^2}\,dx$.

Задача 28.

28.1. $\int\limits_{\pi/2}^{2\operatorname{arctg} 2} \frac{dx}{\sin^2 x(1-\cos x)}$.

28.2. $\int\limits_0^{\pi/2} \frac{\cos x dx}{2+\cos x}$.

28.3. $\int\limits_{\pi/2}^{2\operatorname{arctg} 2} \frac{dx}{\sin^2 x(1+\cos x)}$.

28.4. $\int\limits_{2\operatorname{arctg}(1/2)}^{\pi/2} \frac{\cos x dx}{(1-\cos x)^3}$.

28.5. $\int\limits_0^{\pi/2} \frac{\cos x-\sin x}{(1+\sin x)^2}\,dx$.

28.6. $\int\limits_{2\operatorname{arctg} 2}^{2\operatorname{arctg} 3} \frac{dx}{\cos x(1-\cos x)}$.

28.7. $\int\limits_{2\operatorname{arctg}(1/3)}^{2\operatorname{arctg}(1/2)} \frac{dx}{\sin x(1-\sin x)}$.

28.8. $\int\limits_{2\operatorname{arctg}(1/2)}^{\pi/2} \frac{dx}{(1+\sin x-\cos x)^2}$.

28.9. $\int\limits_0^{\pi/2} \frac{\cos x dx}{5+4\cos x}$.

28.10. $\int\limits_0^{2\pi/3} \frac{1+\sin x}{1+\cos x+\sin x}\,dx$.

28.11. $\int\limits_{\pi/3}^{\pi/2} \frac{\cos x dx}{1+\sin x-\cos x}$.

28.12. $\int\limits_0^{\pi/2} \frac{(1+\cos x)dx}{1+\sin x+\cos x}$.

28.13. $\int\limits_0^{\pi/2} \frac{\sin dx}{1+\sin x+\cos x}$.

28.14. $\int\limits_0^{2\operatorname{arctg}(1/2)} \frac{1+\sin x}{(1-\sin x)^2}\,dx$.

28.15. $\int\limits_0^{\pi/2} \frac{\cos x dx}{1+\sin x+\cos x}$.

28.16. $\int\limits_0^{2\operatorname{arctg}(1/3)} \frac{\cos x dx}{(1-\sin x)(1+\cos x)}$.

28.17. $\int\limits_{-2\pi/3}^{0} \frac{\cos x dx}{1+\cos x-\sin x}$.

28.18. $\int\limits_{-\pi/2}^{0} \frac{\cos x dx}{(1+\cos x-\sin x)^2}$.

28.19. $\int\limits_0^{\pi/2} \frac{\cos x dx}{(1+\cos x+\sin x)^2}$.

28.20. $\int\limits_0^{2\operatorname{arctg}(1/2)} \frac{(1-\sin x)dx}{\cos x(1+\cos x)}$.

28.21. $\int_0^{\pi/2} \frac{\sin x dx}{(1+\sin x)^2}$.

28.22. $\int_0^{\pi/2} \frac{\sin x dx}{(1+\cos x+\sin x)^2}$.

28.23. $\int_{-\pi/2}^{0} \frac{\sin x dx}{(1+\cos x-\sin x)^2}$.

28.24. $\int_{-2\pi/3}^{0} \frac{\cos^2 x dx}{(1+\cos x-\sin x)^2}$.

28.25. $\int_0^{\pi/2} \frac{\sin^2 x dx}{(1+\cos x+\sin x)^2}$.

28.26. $\int_0^{2\pi/3} \frac{\cos^2 x dx}{(1+\cos x-\sin x)^2}$.

28.27. $\int_{\pi/2}^{2\operatorname{arctg} 2} \frac{dx}{\sin x(1+\sin x)}$.

28.28. $\int_0^{\pi/2} \frac{dx}{(1+\cos x+\sin x)^2}$.

28.29. $\int_0^{\pi/2} \frac{\sin x dx}{2+\sin x}$.

28.30. $\int_0^{\pi/4} \frac{dx}{\cos x(1+\cos x)}$.

Задача 29.

29.1. $\int_{\pi/4}^{\operatorname{arctg} 3} \frac{dx}{(3\operatorname{tg} x+5)\sin 2x}$.

29.2. $\int_{\arccos(4/\sqrt{17})}^{\pi/4} \frac{2\operatorname{ctg} x+1}{(2\sin x+\cos x)^2} dx$.

29.3. $\int_0^{\arccos(4/\sqrt{17})} \frac{3+2\operatorname{tg} x}{2\sin^2 x+3\cos^2 x-1} dx$.

29.4. $\int_{\pi/4}^{\operatorname{arctg} 3} \frac{4\operatorname{tg} x-5}{1-\sin 2x+4\cos^2 x} dx$.

29.5. $\int_0^{\operatorname{arctg}(1/3)} \frac{(8+\operatorname{tg} x)}{18\sin^2 x+2\cos^2 x} dx$.

29.6. $\int_0^{\arccos\sqrt{2/3}} \frac{\operatorname{tg} x+2}{\sin^2 x+2\cos^2 x-3} dx$.

29.7. $\int_{\arcsin(1/\sqrt{37})}^{\pi/4} \frac{6\operatorname{tg} x dx}{3\sin 2x+5\cos^2 x}$.

29.8. $\int_0^{\pi/4} \frac{2\operatorname{tg}^2 x-11\operatorname{tg} x-22}{4-\operatorname{tg} x} dx$.

29.9. $\int_{-\operatorname{arctg}(1/3)}^{0} \frac{3\operatorname{tg} x+1}{2\sin 2x-5\cos 2x+1} dx$.

29.10. $\int_{\pi/4}^{\operatorname{arctg} 3} \frac{1+\operatorname{ctg} x}{(\sin x+2\cos x)^2} dx$.

29.11. $\int_{\pi/4}^{\arccos(1/\sqrt{3})} \frac{\operatorname{tg} x}{\sin^2 x-5\cos^2 x+4} dx$.

29.12. $\int_0^{\pi/4} \frac{6\sin^2 x}{3\cos 2x-4} dx$.

29.13. $\int\limits_0^{\operatorname{arctg}3} \frac{4+\operatorname{tg}x}{2\sin^2 x+18\cos^2 x}dx.$

29.14. $\int\limits_0^{\operatorname{arctg}2} \frac{12+\operatorname{tg}x}{3\sin^2 x+12\cos^2 x}dx.$

29.15. $\int\limits_0^{\operatorname{arctg}(2/3)} \frac{6+\operatorname{tg}x}{9\sin^2 x+4\cos^2 x}dx.$

29.16. $\int\limits_0^{\arcsin\sqrt{3/7}} \frac{\operatorname{tg}^2 x dx}{3\sin^2 x+4\cos^2 x-7}.$

29.17. $\int\limits_0^{\pi/4} \frac{7+3\operatorname{tg}x}{(\sin x+2\cos x)^2}dx.$

29.18. $\int\limits_{\arcsin(2/\sqrt{5})}^{\arcsin(3/\sqrt{10})} \frac{2\operatorname{tg}x+5}{(5-\operatorname{tg}x)\sin 2x}dx.$

29.19. $\int\limits_{-\arccos(1/\sqrt{10})}^{0} \frac{3\operatorname{tg}^2 x-50}{2\operatorname{tg}x+7}dx.$

29.20. $\int\limits_0^{\pi/4} \frac{5\operatorname{tg}x+2}{2\sin 2x+5}dx.$

29.21. $\int\limits_{\pi/4}^{\arcsin(2/\sqrt{5})} \frac{4\operatorname{tg}x-5}{4\cos^2 x-\sin 2x+1}dx.$

29.22. $\int\limits_0^{\arcsin\sqrt{7/8}} \frac{6\sin^2 x}{4+3\cos 2x}dx.$

29.23. $\int\limits_{-\arccos(1/\sqrt{5})}^{0} \frac{11-3\operatorname{tg}x}{\operatorname{tg}x+3}dx.$

29.24. $\int\limits_0^{\arcsin(3/\sqrt{10})} \frac{(2\operatorname{tg}x-5)}{(4\cos x-\sin x)^2}dx$

29.25. $\int\limits_{\pi/4}^{\arccos(1/\sqrt{26})} \frac{dx}{(6-\operatorname{tg}x)\sin 2x}.$

29.26. $\int\limits_0^{\pi/4} \frac{4-7\operatorname{tg}x}{2+3\operatorname{tg}x}dx.$

29.27. $\int\limits_{-\arcsin(2/\sqrt{5})}^{\pi/4} \frac{2-\operatorname{tg}x}{(\sin x+3\cos x)^2}dx.$

29.28. $\int\limits_{\pi/4}^{\arcsin\sqrt{2/3}} \frac{8\operatorname{tg}x dx}{3\cos^2 x+8\sin 2x-7}.$

29.29. $\int\limits_{\arccos(1/\sqrt{10})}^{\arccos(1/\sqrt{26})} \frac{12dx}{(6+5\operatorname{tg}x)\sin 2x}.$

29.30. $\int\limits_0^{\pi/3} \frac{\operatorname{tg}^2 x}{4+3\cos 2x}dx.$

Задача 30.

30.1. $\int\limits_{\pi/2}^{\pi} 2^8 \sin^8 x\, dx.$

30.2. $\int\limits_0^{\pi} 2^4 \sin^6 x\cos^2 x\, dx.$

30.3. $\int\limits_0^{2\pi} \sin^4 x\cos^4 x\, dx.$

30.4. $\int\limits_0^{2\pi} \sin^2(x/4)\cos^6(x/4)\, dx.$

30.5. $\int_0^{\pi} 2^4 \cos^8\left(x/2\right)\, dx.$

30.6. $\int_{-\pi/2}^{0} 2^8 \sin^8 x\, dx.$

30.7. $\int_{\pi/2}^{\pi} 2^4 \sin^6 x \cos^2 x\, dx.$

30.8. $\int_0^{\pi} 2^4 \sin^4 x \cos^4 x\, dx.$

30.9. $\int_0^{2\pi} \sin^2 x \cos^6 x\, dx.$

30.10. $\int_0^{2\pi} \cos^8\left(x/4\right)\, dx.$

30.11. $\int_0^{\pi} 2^4 \sin^8\left(x/2\right)\, dx.$

30.12. $\int_{-\pi}^{0} 2^8 \sin^6 x \cos^2 x\, dx.$

30.13. $\int_{\pi/2}^{2\pi} 2^8 \sin^4 x \cos^4 x\, dx.$

30.14. $\int_0^{\pi} 2^4 \sin^2 x \cos^6 x\, dx.$

30.15. $\int_0^{2\pi} \cos^8 x\, dx.$

30.16. $\int_0^{2\pi} \sin^8\left(x/4\right)\, dx.$

30.17. $\int_0^{\pi} 2^4 \sin^6\left(x/2\right)\cos^2\left(x/2\right)\, dx.$

30.18. $\int_{-\pi/2}^{0} 2^8 \sin^4 x \cos^4 x\, dx.$

30.19. $\int_{\pi/2}^{\pi} 2^8 \sin^2 x \cos^6 x\, dx.$

30.20. $\int_0^{\pi} 2^4 \cos^8 x\, dx.$

30.21. $\int_0^{2\pi} \sin^8 x\, dx.$

30.22. $\int_0^{2\pi} \sin^6\left(x/4\right)\cos^2\left(x/4\right)\, dx.$

30.23. $\int_0^{\pi} 2^4 \sin^4\left(x/2\right)\cos^4\left(x/2\right)\, dx.$

30.24. $\int_{-\pi/2}^{0} 2^8 \sin^2 x \cos^6 x\, dx.$

30.25. $\int_{\pi/2}^{2\pi} 2^8 \cos^8 x\, dx.$

30.26. $\int_0^{\pi} 2^4 \sin^8 x\, dx.$

30.27. $\int_0^{2\pi} \sin^6 x \cos^2 x\, dx.$

30.28. $\int_0^{2\pi} \sin^4\left(x/4\right)\cos^4\left(x/4\right)\, dx.$

30.29. $\int_0^{\pi} 2^4 \sin^2\left(x/2\right)\cos^6\left(x/2\right)\, dx.$

30.30. $\int_{-\pi/2}^{0} 2^8 \cos^8 x\, dx.$

Задача 31.

31.1. $\int\limits_0^1 \frac{4\sqrt{1-x}-\sqrt{3x+1}}{\left(\sqrt{3x+1}+4\sqrt{1-x}\right)(3x+1)^2}\,dx.$

31.2. $\int\limits_1^{64} \frac{1-\sqrt[6]{x}+2\sqrt[3]{x}}{x+2\sqrt{x^3}+\sqrt[3]{x^4}}\,dx.$

31.3. $\int\limits_{-14/15}^{-7/8} \frac{6\sqrt{x+2}}{(x+2)^2\sqrt{x+1}}\,dx.$

31.4. $\int\limits_6^9 \sqrt{\frac{9-2x}{2x-21}}\,dx.$

31.5. $\int\limits_0^5 e^{\sqrt{\frac{5-x}{5+x}}}\,\frac{dx}{(5+x)\sqrt{25-x^2}}.$

31.6. $\int\limits_8^{12} \sqrt{\frac{6-x}{x-14}}\,dx.$

31.7. $\int\limits_0^1 e^{\sqrt{\frac{1-x}{1+x}}}\,\frac{dx}{(1+x)\sqrt{1-x^2}}.$

31.8. $\int\limits_{5/2}^{10/3} \frac{\sqrt{x+2}+\sqrt{x-2}}{\left(\sqrt{x+2}-\sqrt{x-2}\right)(x-2)^2}\,dx.$

31.9. $\int\limits_1^8 \frac{5\sqrt{x+24}}{(x+24)^2\sqrt{x}}\,dx.$

31.10. $\int\limits_1^2 \frac{x+\sqrt{3x-2}-10}{\sqrt{3x-2}+7}\,dx.$

31.11. $\int\limits_6^{10} \sqrt{\frac{4-x}{x-12}}\,dx.$

32.12. $\int\limits_0^2 \frac{\left(4\sqrt{2-x}-\sqrt{2x+2}\right)dx}{\left(\sqrt{2x+2}+4\sqrt{2-x}\right)(2x+2)^2}.$

31.13. $\int\limits_{-1/2}^0 \frac{x\,dx}{2+\sqrt{2x+1}}.$

31.14. $\int\limits_0^4 e^{\sqrt{\frac{4-x}{4+x}}}\,\frac{dx}{(4+x)\sqrt{16-x^2}}.$

31.15. $\int\limits_{1/8}^1 \frac{15\sqrt{x+3}}{(x+3)^2\sqrt{x}}\,dx.$

31.16. $\int\limits_{-5/3}^1 \frac{\sqrt[3]{3x+5}+2}{1+\sqrt[3]{3x+5}}\,dx.$

31.17. $\int\limits_2^3 \sqrt{\frac{3-2x}{2x-7}}\,dx.$

31.18. $\int\limits_0^7 \frac{\sqrt{x+25}}{(x+25)^2\sqrt{x+1}}\,dx.$

31.19. $\int\limits_0^2 \frac{\left(4\sqrt{2-x}-\sqrt{3x+2}\right)dx}{\left(\sqrt{3x+2}+4\sqrt{2-x}\right)(3x+2)^2}.$

31.20. $\int\limits_0^2 e^{\sqrt{\frac{2-x}{2+x}}}\,\frac{dx}{(2+x)\sqrt{4-x^2}}.$

31.21. $\int\limits_3^5 \sqrt{\frac{2-x}{x-6}}\,dx.$

31.22. $\int\limits_{1/24}^{1/3} \frac{5\sqrt{x+1}}{(x+1)^2\sqrt{x}}\,dx.$

31.23. $\int_{9}^{15}\sqrt{\frac{6-x}{x-18}}dx.$

31.24. $\int_{0}^{1}\frac{\left(4\sqrt{1-x}-\sqrt{2x+1}\right)dx}{\left(\sqrt{2x+1}+4\sqrt{1-x}\right)(2x+1)^{2}}$

31.25. $\int_{1}^{64}\frac{\left(2+\sqrt[3]{x}\right)dx}{\left(\sqrt[6]{x}+2\sqrt[3]{x}+\sqrt{x}\right)\sqrt{x}}$

31.26. $\int_{16/15}^{4/3}\frac{4\sqrt{x}}{x^{2}\sqrt{x-1}}dx.$

31.27. $\int_{0}^{6}\frac{e^{\sqrt{(6-x)/(6+x)}}\,dx}{(6+x)\sqrt{36-x^{2}}}.$

31.28. $\int_{1}^{64}\frac{6-\sqrt{x}+\sqrt[4]{x}}{\sqrt{x^{3}}-7x-6\sqrt[4]{x^{3}}}dx.$

31.29. $\int_{0}^{1}\frac{\left(4\sqrt{1-x}-\sqrt{x+1}\right)dx}{\left(\sqrt{x+1}+4\sqrt{1-x}\right)(x+1)^{2}}.$

31.30. $\int_{0}^{3}\frac{e^{\sqrt{(3-x)/(3+x)}}\,dx}{(3+x)\sqrt{9-x^{2}}}.$

Задача 32.

32.1. $\int_{1}^{2}\frac{\sqrt{x^{2}-1}}{x^{4}}dx.$

32.2. $\int_{0}^{1}x^{2}\sqrt{1-x^{2}}dx.$

32.3. $\int_{0}^{5}\frac{dx}{\left(25+x^{2}\right)\sqrt{25+x^{2}}}.$

32.4. $\int_{0}^{3}\frac{dx}{\left(9+x^{2}\right)^{3/2}}.$

32.5. $\int_{0}^{\sqrt{5}/2}\frac{dx}{\sqrt{\left(5-x^{2}\right)^{3}}}.$

32.6. $\int_{0}^{16}\sqrt{256-x^{2}}dx.$

32.7. $\int_{0}^{\sqrt{2}/2}\frac{x^{4}dx}{\sqrt{\left(1-x^{2}\right)^{3}}}.$

32.8. $\int_{0}^{\sqrt{3}}\frac{dx}{\sqrt{\left(4-x^{2}\right)^{3}}}.$

32.9. $\int_{0}^{1}\frac{x^{4}dx}{\left(2-x^{2}\right)^{3/2}}.$

32.10. $\int_{0}^{2}\frac{x^{2}dx}{\sqrt{16-x^{2}}}.$

32.11. $\int_{0}^{2}\sqrt{4-x^{2}}dx.$

32.12. $\int_{0}^{4}\frac{dx}{\left(16+x^{2}\right)^{3/2}}.$

32.13. $\int_{0}^{4}x^{2}\sqrt{16-x^{2}}dx.$

32.14. $\int_{0}^{5/2}\frac{x^{2}dx}{\sqrt{25-x^{2}}}.$

32.15. $\int_0^5 x^2\sqrt{25-x^2}\,dx.$

32.16. $\int_0^4 \sqrt{16-x^2}\,dx.$

32.17. $\int_{\sqrt{2}}^{2\sqrt{2}} \frac{\sqrt{x^2-2}}{x^4}\,dx.$

32.18. $\int_0^{4\sqrt{3}} \frac{dx}{\sqrt{\left(64-x^2\right)^3}}.$

32.19. $\int_{-3}^{3} x^2\sqrt{9-x^2}\,dx.$

32.20. $\int_0^{2\sqrt{2}} \frac{x^4\,dx}{\left(16-x^2\right)\sqrt{16-x^2}}.$

32.21. $\int_1^{\sqrt{3}} \frac{dx}{\sqrt{\left(1+x^2\right)^3}}.$

32.22. $\int_0^2 \frac{dx}{\sqrt{\left(16-x^2\right)^3}}.$

32.23. $\int_0^2 \frac{x^4\,dx}{\sqrt{\left(8-x^2\right)^3}}.$

32.24. $\int_0^1 \sqrt{4-x^2}\,dx.$

32.25. $\int_3^6 \frac{\sqrt{x^2-9}}{x^4}\,dx.$

32.26. $\int_2^4 \frac{\sqrt{x^2-4}}{x^4}\,dx.$

32.27. $\int_0^2 \frac{dx}{\left(4+x^2\right)\sqrt{4+x^2}}.$

32.28. $\int_0^{\sqrt{2}} \frac{x^4\,dx}{\left(4-x^2\right)^{3/2}}.$

32.29. $\int_0^{1/\sqrt{2}} \frac{dx}{\left(1-x^2\right)\sqrt{1-x^2}}.$

32.30. $\int_0^1 \frac{x^2\,dx}{\sqrt{4-x^2}}.$

Задача 33.

33.1. $\int_0^1 x^2\sqrt{1-x^2}\,dx;$

33.2. $\int_0^2 \frac{dx}{(x^2+4)\sqrt{x^2+4}};$

33.3. $\int_3^6 \frac{\sqrt{x^2-9}\,dx}{x^4};$

33.4. $\int_0^1 \frac{x^2}{\sqrt{4-x^2}}\,dx;$

33.5. $\int_3^{3\sqrt{3}} \frac{\sqrt{(x^2+9)^3}\,dx}{x^6};$

33.6. $\int_2^4 \frac{\sqrt{x^2-4}}{x^4}\,dx;$

33.7. $\int_{\sqrt{2}/2}^1 \frac{\sqrt{1-x^2}}{x^2}dx;$

33.8. $\int_0^2 \frac{4}{\sqrt{(16+x^2)^3}}dx;$

33.9. $\int_{\sqrt{3}}^2 \frac{\sqrt{x^2-3}dx}{x^4};$

33.10. $\int_0^3 x^2\sqrt{9-x^2}\,dx;$

33.11. $\int_0^9 \frac{dx}{\sqrt{(x^2+81)^3}};$

33.12. $\int_{2\sqrt{3}}^6 \frac{x^2dx}{\sqrt{x^2-9}};$

33.13. $\int_0^{\sqrt{5}/2} \frac{dx}{\sqrt{(5-x^2)^3}};$

33.14. $\int_2^{2\sqrt{3}} \frac{\sqrt{x^2+4}dx}{x^4};$

33.15. $\int_{\sqrt{3}}^2 \sqrt{(x^2-3)^3}\,dx;$

33.16. $\int_0^3 \frac{dx}{\sqrt{(x^2+3)^5}}$;

33.17. $\int_0^4 \sqrt{16-x^2}\,dx$;

33.18. $\int_4^8 \frac{\sqrt{x^2-16}dx}{x^4}$;

33.19. $\int_0^2 \frac{x^4 dx}{\sqrt{(8-x^2)^3}}$;

33.20. $\int_0^1 \frac{\sqrt{x^2+1}dx}{2+x^2}$;

33.21. $\int_2^4 \sqrt{x^2-4}dx$;

33.22. $\int_0^1 x^4\sqrt{4-x^2}\,dx$;

33.23. $\int_{1/\sqrt{3}}^1 \frac{\sqrt{(x^2+1)^5}dx}{x^4}$;

33.24. $\int_5^{10} \frac{\sqrt{x^2-25}dx}{x^4}$;

33.25. $\int_0^{4\sqrt{3}} \frac{dx}{\sqrt{(64-x^2)^3}}$;

33.26. $\int_0^2 \frac{x^2 dx}{\sqrt{(x^2+4)^5}}$;

33.27. $\int_4^8 \sqrt{x^2-16}dx$;

33.28. $\int_0^2 \frac{x^2 dx}{\sqrt{16-x^2}}$;

33.29. $\int_0^4 \frac{\sqrt{x^2+16}dx}{36+x^2}$;

33.30 $\int_1^{2/\sqrt{3}} \sqrt{(x^2-1)^3}dx$