ФГБОУ ВО "Воронежский государственный
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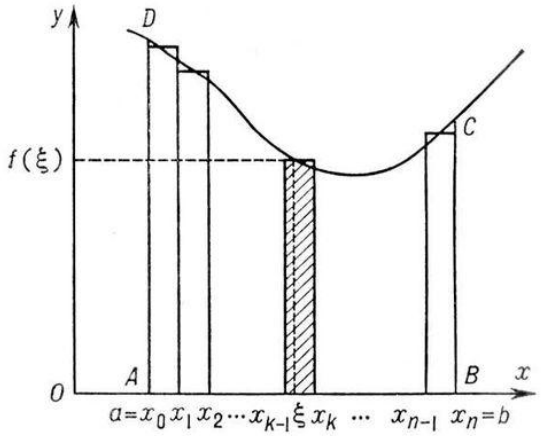
Кафедра высшей математики и
физико-математического моделирования

ИНДИВИДУАЛЬНЫЕ ДОМАШНИЕ ЗАДАНИЯ К РАЗДЕЛУ «ИНТЕГРАЛЬНОЕ ИСЧИСЛЕНИЕ»

МЕТОДИЧЕСКИЕ УКАЗАНИЯ

для индивидуальной самостоятельной работы по разделу
«Интегральное исчисление»
курса «Математика» для студентов направления 11.03.01
«Радиотехника»



Воронеж 2021

ИНДИВИДУАЛЬНЫЕ РАСЧЕТНЫЕ ЗАДАНИЯ К РАЗДЕЛУ «ИНТЕГРАЛЬНОЕ ИСЧИСЛЕНИЕ»

1. Найти неопределенный интеграл.

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

1.2. $\int\left(7x^4-4\sqrt[3]{x^2}+\frac{5}{\sqrt{x}}-\frac{1}{x^8}\right)dx$.

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

1.4. $\int\left(x^3+\frac{6}{x}+2\sqrt[3]{x^2}-\frac{1}{\sqrt{x^3}}\right)dx$.

1.5. $\int\left(4x^7+\frac{6}{x^2}+8\sqrt[5]{x^3}-\frac{1}{\sqrt{x^7}}\right)dx$.

1.6. $\int\left(11x^4+\frac{2}{\sqrt{x}}+4\sqrt[7]{x^2}-\frac{1}{2x^2}\right)dx$.

1.7. $\int\left(\frac{2}{5}x^6+\frac{5}{x^8}+4\sqrt[6]{x^7}-\frac{1}{\sqrt[3]{x^4}}\right)dx$.

1.8. $\int\left(7x^2+\frac{2}{x^3}+4\sqrt{x^3}-\frac{1}{\sqrt[4]{x}}\right)dx$.

1.9. $\int\left(x^5+\frac{1}{x^4}+7\sqrt[3]{x^5}-\frac{1}{\sqrt[3]{x}}\right)dx$.

1.10. $\int\left(3x^2+\frac{2}{x^3}+\sqrt{x^7}-\frac{4}{\sqrt[5]{x}}\right)dx$.

1.11. $\int\left(x^9+\frac{5}{x}+2\sqrt[3]{x^8}-\frac{7}{\sqrt[3]{x}}\right)dx$.

1.12. $\int\left(9x^4+\frac{1}{x^4}+3\sqrt[3]{x^5}-\frac{6}{\sqrt[8]{x^5}}\right)dx$.

1.13. $\int\left(3x^2+\frac{5}{x^3}+2\sqrt[4]{x^5}-\frac{1}{\sqrt[3]{x^7}}\right)dx$.

1.14. $\int\left(3x^5+\frac{2}{\sqrt{x}}+\frac{1}{4}\sqrt[3]{x}-\frac{8}{\sqrt[7]{x}}\right)dx$.

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

1.16. $\left(\frac{x^2}{4}+\frac{1}{3x^3}-2\sqrt{x}-\frac{7}{\sqrt[3]{x^5}}\right)dx$.

1.17. $\int\left(\frac{x^5}{3}+\frac{2}{x^7}-\sqrt{x^3}-\frac{1}{\sqrt[5]{x^4}}\right)dx$.

1.18. $\int\left(8x^3+\frac{1}{\sqrt{x^3}}-\sqrt[4]{x}-\frac{1}{x^3}\right)dx$.

1.19. $\int\left(\frac{x^5}{5}+\frac{7}{x^3}-\sqrt{x^7}-\frac{4}{\sqrt[7]{x^5}}\right)dx$.

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

1.21. $\int\left(3x^3+\frac{6}{x^4}-\sqrt{x^7}-\frac{3}{\sqrt[3]{2x}}\right)dx$.

1.22. $\int\left(8x^3+\frac{4}{x}-\frac{\sqrt{x^5}}{5}-\frac{1}{\sqrt[7]{x^4}}\right)dx$.

1.23. $\int\left(10x^{12}+\frac{9}{x^6}-\sqrt[6]{x^5}-\frac{11}{\sqrt{x}}\right)dx$.

1.24. $\int\left(5x^5+\frac{1}{4x^3}-\sqrt[8]{x^7}-\frac{7}{\sqrt[3]{x^{11}}}\right)dx$.

1.25. $\int\left(12x^4+\frac{3}{x^9}-\sqrt[9]{x^7}-\frac{3}{\sqrt[3]{x}}\right)dx$.

1.26. $\int\left(3x^3+\frac{1}{4x^4}-2\sqrt[9]{x^7}-\frac{2}{\sqrt[3]{x^{13}}}\right)dx$.

1.27. $\int\left(6x^6+\frac{1}{7x^7}-\sqrt[5]{x^2}-\frac{5}{\sqrt[3]{x^{14}}}\right)dx$.

1.28. $\int\left(x^5+\frac{2}{x^4}-\sqrt[3]{3x^7}-\frac{4}{\sqrt[5]{x^4}}\right)dx$.

1.29. $\int\left(\frac{x^5}{2}+\frac{3}{x^3}-\sqrt[8]{x^9}-\frac{4}{\sqrt[3]{x^5}}\right)dx$.

1.30. $\int\left(8x^4+\frac{3}{x^6}-\sqrt[6]{3x^3}-\frac{3}{\sqrt[3]{x^2}}\right)dx$.

2. Найти неопределенный интеграл.

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

2.2. $\int\left(\sqrt[4]{\frac{x}{3}-2}-\cos\left(\frac{x}{12}-1\right)+e^{3x-2}+\frac{1}{2x-2}\right)dx.$

2.3. $\int\left(\sqrt{3x+4}-\sin(4x+3)\ +e^{9x+1}+\frac{1}{5x+11}\right)dx.$

2.4. $\int\left(\frac{1}{2x-1}-\cos\left(\frac{x}{8}+\ 3\right)\ +e^{-3x+6}-\sqrt[4]{\frac{x}{7}+2}\right)dx.$

2.5. $\int\left(\sqrt[3]{\frac{x}{8}+\ 3}\ +e^{-x+6}-\ 3\sin(4x+1)-\frac{1}{2-x}\right)dx.$

2.6. $\int\left(\cos(4x+3)+e^{-3x+6}+\frac{1}{\sqrt{3x+2}}+\frac{1}{7x-1}\right)dx.$

2.7. $\int\left(\ \frac{1}{5-6x}+\ e^{-2x+1}+\sqrt[3]{x+1}-\sin(7-x)\right)dx.$

2.8. $\int\left(\ \sin\left(\frac{x}{3}-2\right)+\ e^{4-x}+\frac{1}{1-x}-\sqrt[4]{8x-1}\right)dx.$

2.9. $\int\left(\cos\left(2-3x\right)-\sqrt[4]{4x+\ 3}\ +\ e^{3-4x}+\frac{1}{1-12x}\right)dx.$

2.10. $\int\left(\sin\left(\frac{x}{5}-5\right)+e^{-x-1}-\sqrt[3]{x+9}+\frac{1}{1-9x}\right)dx.$

2.11. $\int\left(\sin\left(\frac{x}{6}+1\right)+e^{-2x-9}-\sqrt[5]{6x+2}+\frac{1}{2-x}\right)dx.$

2.12. $\int\left(\sin(3-8x)-\sqrt[5]{7x+1}+e^{-4x+2}+\frac{2}{1+3x}\right)dx.$

2.13. $\int\left(\frac{1}{x+13}+\cos(1-6x)+e^{-\frac{2x}{3}-3}-\sqrt[3]{\frac{x}{7}+2}\right)dx.$

2.14. $\int\left(\frac{1}{\sqrt{3x+4}}-\cos(4x+3)\ +e^{12x+1}+\frac{3}{5x+1}\right)dx.$

2.15. $\int\left(\sin(6x+2)+e^{-5x-3}-\sqrt[5]{2x+1}+\frac{1}{2-12x}\right)dx.$

2.16. $\int\left(\sin(7-7x)-e^{7x-4}+\sqrt[3]{\frac{x}{2}+2}+\frac{1}{5x+3}\right)dx.$

2.17. $\int\left(\sin\left(1-\frac{x}{3}\right)+e^{3-\frac{x}{3}}-\sqrt[5]{2x+1}+\frac{8}{1-2x}\right)dx.$

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

2.19. $\int\left(\cos(3x+2)+e^{12x+2}-\frac{2}{\sqrt[5]{8x+1}}+\frac{1}{4+3x}\right)dx.$

2.20. $\int\left(\cos(x+4)+e^{2-8x}-\frac{8}{\sqrt[8]{x+1}}+\frac{1}{3x+11}\right)dx.$

2.21. $\int\left(\frac{1}{3-13x}+\sin(1-6x)+e^{-\frac{5}{3}x-3}-\sqrt[5]{\frac{x}{5}+2}\right)dx.$

2.22. $\int\left(\cos(7-7x)-e^{\frac{x}{4}-4}+\sqrt[4]{\frac{x}{12}+4}+\frac{1}{3-7x}\right)dx.$

2.23. $\int\left(\sin(1-7x)+e^{-x-3}-\sqrt[8]{2x-2}+\frac{1}{3-4x}\right)dx.$

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

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

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

2.27. $\int\left(\cos(6-x)+e^{\frac{x}{8}}-\sqrt[8]{8x+1}+\frac{1}{1-9x}\right)dx.$

2.28. $\int\left(\cos(x+2)-e^{x-4}+\sqrt[3]{\frac{x}{3}+1}+\frac{2}{x+13}\right)dx.$

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

2.30. $\int\left(\sin(3x-2)+e^{-\frac{x}{2}}-\sqrt[3]{3-3x}+\frac{2}{1-2x}\right)dx.$

3. Найти неопределенный интеграл.

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

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

3.3. $\int\frac{dx}{9x^2+3}.$

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

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

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

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

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

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

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

3.11. $\int \frac{dx}{7x^2+6}$.

3.12. $\int \frac{dx}{\sqrt{4-7x^2}}$.

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

3.14. $\int \frac{dx}{\sqrt{7-3x^2}}$.

3.15. $\int \frac{dx}{2x^2+7}$.

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

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

3.18. $\int \frac{dx}{\sqrt{7-2x^2}}$.

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

3.20. $\int \frac{dx}{8x^2+9}$.

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

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

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

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

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

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

3.27. $\int \frac{dx}{9x^2+8}$.

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

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

3.30. $\int \frac{dx}{3x^2+8}$.

4. Найти неопределенный интеграл.

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

4.2. $\int \frac{xdx}{\sqrt{5-4x^2}}$.

4.3. $\int \frac{3xdx}{4x^2+1}$.

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

4.5. $\int \frac{2xdx}{\sqrt{8x^2-9}}$.

4.6. $\int \frac{4xdx}{\sqrt{4x^2+3}}$.

4.7. $\int \frac{xdx}{\sqrt{9-8x^2}}$.

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

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

4.10. $\int \frac{2xdx}{\sqrt{7-2x^2}}$.

4.11. $\int \frac{xdx}{2x^2-7}$.

4.12. $\int \frac{xdx}{3x^2+8}$.

4.13. $\int \frac{2xdx}{3x^2-7}$.

4.14. $\int \frac{2xdx}{\sqrt{2x^2+5}}$.

4.15. $\int \frac{xdx}{\sqrt{7-3x^2}}$.

4.16. $\int \frac{xdx}{2x^2+9}$.

4.17. $\int \frac{5xdx}{\sqrt{3-5x^2}}$.

4.18. $\int \frac{xdx}{\sqrt{3x^2+8}}$.

4.19. $\int \frac{5xdx}{\sqrt{5x^2+3}}$.

4.20. $\int \frac{xdx}{3x^2-6}$.

4.21. $\int \frac{xdx}{5x^2+1}$.

4.22. $\int \frac{5xdx}{5x^2-3}$.

4.23. $\int \frac{xdx}{2x^2-7}$.

4.24. $\int \frac{9xdx}{\sqrt{1-9x^2}}$.

4.25. $\int \frac{3xdx}{9x^2+2}$.

4.26. $\int \frac{9xdx}{2x^2+1}$.

4.27. $\int \frac{7xdx}{\sqrt{4x^2-5}}$.

4.28. $\int \frac{xdx}{\sqrt{5x^2+5}}$.

4.29. $\int \frac{xdx}{x^2-6}$.

4.30. $\int \frac{xdx}{9x^2+5}$.

5. Найти неопределенный интеграл.

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

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

5.3. $\int \frac{dx}{(1-x)\sqrt[3]{\ln(1-x)}}$.

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

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

5.6. $\int \frac{dx}{(1+3x)\sqrt{\ln^5(1+3x)}}$.

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

5.8. $\int \frac{\ln^4(1+7x)}{(1+7x)}dx$.

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

5.10. $\int \frac{\sqrt[7]{\ln^4(x+2)}}{x+2}dx$.

5.11. $\int \frac{\sqrt{\ln^5(x+1)}}{x+1}dx$.

5.12. $\int \frac{\sqrt[6]{\ln^5(2x+1)}}{2x+1}dx$.

5.13. $\int \frac{\sqrt{\ln^3(x+3)}}{x+3}dx.$

5.14. $\int \frac{dx}{(1+4x)\sqrt{\ln(1+4x)}}.$

5.15. $\int \frac{\sqrt[6]{\ln^7(8x+1)}}{8x+1}dx.$

5.16. $\int \frac{dx}{(x+3)\sqrt[4]{\ln(x+3)}}.$

5.17. $\int \frac{dx}{(8x+9)\sqrt[9]{\ln(8x+9)}}.$

5.18. $\int \frac{\ln^4(1-4x)}{(1-4x)}dx.$

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

5.20. $\int \frac{\sqrt[7]{\ln^5(x+3)}}{x+3}dx.$

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

5.22. $\int \frac{\sqrt[3]{\ln^7(3x+1)}}{3x+1}dx.$

5.23. $\int \frac{dx}{(9x+7)\sqrt{\ln(9x+7)}}.$

5.24. $\int \frac{dx}{(8+9x)\sqrt{\ln^9(8+9x)}}.$

5.25. $\int \frac{\sqrt[5]{\ln^4(1+5x)}}{(1+5x)}dx.$

5.26. $\int \frac{dx}{(2-2x)\ln^5(2-2x)}.$

5.27. $\int \frac{\ln^7(11+2x)}{(11+2x)}dx.$

5.28. $\int \frac{dx}{(x+8)\sqrt{\ln^3(x+8)}}.$

5.29. $\int \frac{dx}{(x+7)\ln(x+7)}.$

5.30. $\int \frac{\sqrt[5]{\ln^3(3x+5)}}{3x+5}dx.$

6. Найти неопределенный интеграл.

6.1. $\int \sin^4 2x\cos 2xdx.$

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

6.3. $\int \frac{\sin 3x}{\cos^4 3x}\,dx.$

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

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

6.6. $\int \cos^7 2x \sin 2x dx.$

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

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

6.9. $\int \frac{\sin x}{\sqrt{\cos x + 3}}\,dx.$

6.10. $\int \frac{\sin x}{\sqrt[3]{\cos x + 1}}\,dx.$

6.11. $\int \frac{\cos x}{\sqrt{\sin x - 4}}\,dx.$

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

6.13. $\int \frac{\sin 5x}{\sqrt{\cos 5x}}\,dx.$

6.14. $\int \frac{\cos 4x}{\sin^3 4x}\,dx.$

6.15. $\int \sin^3 4x \cos 4x dx.$

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

6.17. $\int \sqrt{\cos^3 2x} \sin 2x dx.$

6.18. $\int \frac{\sin 4x}{\sqrt[3]{\cos^2 4x}}\,dx.$

6.19. $\int \sin^3 5x \cos 5x dx.$

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

6.21. $\int \frac{\sin 5x}{\cos^4 5x}\,dx.$

6.22. $\int \sqrt{\cos 7x} \sin 7x dx.$

6.23. $\int \sin^6 3x \cos 3x dx.$

6.24. $\int \frac{\cos 6x}{\sin^7 6x}\,dx.$

6.25. $\int \sin^4 8x \cos 8x dx.$

6.26. $\int \sqrt[7]{\sin^5 3x} \cos 3x dx.$

6.27. $\int \sqrt[5]{\sin 9x+2}\cos 9x dx.$

6.28. $\int \frac{\sin 3x}{\sqrt{\cos 3x+7}} dx.$

6.29. $\int \frac{\cos 4x}{\sqrt{\sin 4x+4}} dx.$

6.30. $\int \sqrt[3]{\cos^2 7x}\sin 7x dx.$

7. Найти неопределенный интеграл.

7.1. $\int \frac{\sqrt{\mathrm{tg}^3 x}}{\cos^2 x} dx.$

7.2. $\int \frac{dx}{\cos^2 x\sqrt{\mathrm{tg}^3 x}}.$

7.3. $\int \frac{dx}{\mathrm{ctg}^4 x\sin^2 x}.$

7.4. $\int \frac{\mathrm{ctg}^5 2x}{\sin^2 2x} dx.$

7.5. $\int \frac{\mathrm{tg}^3 4x}{\cos^2 4x} dx.$

7.6. $\int \frac{\sqrt[3]{3-\mathrm{tg}5x}}{\cos^2 5x} dx.$

7.7. $\int \frac{\sqrt[3]{\mathrm{ctg}^2 x}}{\sin^2 x} dx.$

7.8. $\int \frac{dx}{\mathrm{ctg}^3 3x\sin^2 3x}.$

7.9. $\int \frac{dx}{\mathrm{tg}^4 5x\cos^2 5x}.$

7.10. $\int \frac{\sqrt{\mathrm{ctg}7x}}{\sin^2 7x} dx.$

7.11. $\int \frac{\sqrt[5]{\mathrm{ctg}3x}}{\sin^2 3x} dx.$

7.12. $\int \frac{\mathrm{tg}^4 7x}{\cos^2 7x} dx.$

7.13. $\int \frac{\mathrm{tg}^5 6x}{\cos^2 6x} dx.$

7.14. $\int \frac{\sqrt[3]{\mathrm{tg}^5 4x}}{\cos^2 4x} dx.$

7.15. $\int \frac{\mathrm{ctg}^4 3x}{\sin^2 3x} dx.$

7.16. $\int \frac{dx}{\sqrt{\mathrm{tg}4x}\cos^2 4x}.$

7.17. $\int \frac{dx}{\sqrt[8]{\operatorname{ctg}^3 6x}\sin^2 8x}$.

7.18. $\int \frac{\sqrt[7]{\operatorname{tg}^5 3x}}{\cos^2 3x}dx$.

7.19. $\int \frac{\sqrt[3]{\operatorname{ctg} x+2}}{\sin^2 x}dx$.

7.20. $\int \frac{\sqrt{\operatorname{ctg}4x}}{\sin^2 4x}dx$.

7.21. $\int \frac{\sqrt[5]{1+\operatorname{ctg}4x}}{\sin^2 4x}dx$.

7.22. $\int \frac{\sqrt[3]{\operatorname{tg}7x}}{\cos^2 7x}dx$.

7.23. $\int \frac{\sqrt[4]{2+\operatorname{ctg}2x}}{\sin^2 2x}dx$.

7.24. $\int \frac{\operatorname{tg}^4 3x}{\cos^2 3x}dx$.

7.25. $\int \frac{\sqrt{\operatorname{tg}^7 7x}}{\cos^2 7x}dx$.

7.26. $\int \frac{\sqrt[7]{5+\operatorname{ctg}\ 4x}}{\sin^2 4x}dx$.

7.27. $\int \frac{dx}{\operatorname{tg}^3 6x\cos^2 6x}$.

7.28. $\int \frac{dx}{\cos^2 2x\sqrt{\operatorname{tg}^9 2x}}$.

7.29. $\int \frac{dx}{\operatorname{ctg}^2 9x\sin^2 9x}$.

7.30. $\int \frac{dx}{\sqrt[7]{\operatorname{tg}^5 8x}\cos^2 8x}$.

8. Найти неопределенный интеграл.

8.1. $\int \frac{\sqrt{\operatorname{arctg}3x}}{1+9x^2}dx$.

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

8.3. $\int \frac{\arccos^2 3x}{\sqrt{1-9x^2}}dx$.

8.4. $\int \frac{\arccos^3 2x}{\sqrt{1-4x^2}}dx$.

8.5. $\int \frac{dx}{(1+9x^2)\sqrt{3+\operatorname{arctg}\ 3x}}$.

8.6. $\int \frac{\sqrt{1+\operatorname{arctg}3x}}{1+9x^2}dx$.

8.7. $\int \frac{\arccos^3 3x}{\sqrt{1-9x^2}}\,dx.$

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

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

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

8.11. $\int \frac{\operatorname{arcctg}^7 3x}{1+9x^2}\,dx.$

8.12. $\int \frac{\arccos^3 4x}{\sqrt{1-16x^2}}\,dx.$

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

8.14. $\int \frac{dx}{\sqrt{1-9x^2}\,\arcsin^3 3x}.$

8.15. $\int \frac{dx}{\left(1+x^2\right)\operatorname{arcctg}^7 x}.$

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

8.17. $\int \frac{\arccos^6 3x}{\sqrt{1-9x^2}}\,dx.$

8.18. $\int \frac{\sqrt{\operatorname{arctg}^3 3x}}{1+9x^2}\,dx.$

8.19. $\int \frac{dx}{\left(1+4x^2\right)\sqrt[3]{\operatorname{arcctg}^2 4x}}.$

8.20. $\int \frac{dx}{\left(1+25x^2\right)\operatorname{arctg}^3 5x}.$

8.21. $\int \frac{\sqrt[4]{1+\arcsin 3x}}{\sqrt{1-9x^2}}\,dx.$

8.22. $\int \frac{\sqrt[5]{\arccos^3 3x}}{\sqrt{1-9x^2}}\,dx.$

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

8.24. $\int \frac{\operatorname{arctg}^4 5x}{1+25x^2}\,dx.$

8.25. $\int \frac{\sqrt[5]{\operatorname{arctg}^3 4x}}{1+16x^2}\,dx.$

8.26. $\int \frac{\sqrt[7]{\arccos^6 3x}}{\sqrt{1-9x^2}}\,dx.$

8.27. $\int \frac{dx}{\left(1+64x^2\right)\sqrt{\operatorname{arctg} 8x}}.$

8.28. $\int \frac{\sqrt[7]{3+\arccos 2x}}{\sqrt{1-4x^2}}\,dx.$

8.29. $\int \frac{dx}{(1+9x^2)\sqrt{4+\operatorname{arctg} 3x}}$ 8.30. $\int \frac{dx}{(1+x^2)\sqrt{\operatorname{arctg} x}}$

9. Найти неопределенный интеграл.

9.1. $\int \frac{xdx}{e^{3x^2+4}}$.

9.2. $\int e^{3-\sin 3x} \cdot \cos 3x dx$

9.3. $\int e^{\cos 2x} \sin 2x dx$.

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

9.5. $\int e^{2x^3-1} x^2 dx$.

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

9.7. $\int \frac{e^{\arccos 3x}}{\sqrt{1-9x^2}} dx$.

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

9.9. $\int e^{4x^4+5} x^3 dx$.

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

9.11. $\int \frac{dx}{\cos^2 3x \cdot e^{\operatorname{tg} 3x}}$.

9.12. $\int e^{4+\sin 3x} \cos 3x dx$.

9.13. $\int \frac{e^{\ln x}}{x} dx$.

9.14. $\int \frac{e^{\arcsin 2x} dx}{\sqrt{1-4x^2}}$.

9.15. $\int \frac{x^3 dx}{e^{x^4-4}}$.

9.16. $\int e^{7x^2+2} x dx$.

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

9.18. $\int \frac{e^{\operatorname{tg} 5x} dx}{\cos^2 5x}$.

9.19. $\int \frac{e^{\operatorname{arctg} 3x} dx}{9x^2+1}$.

9.20. $\int \frac{e^{5x}}{7+e^{5x}} dx$.

9.21. $\int \frac{\sin 4x}{e^{\cos 4x}} dx.$

9.22. $\int \frac{xdx}{e^{x^2+3}}.$

9.23. $\int \frac{dx}{\sin^2 8x \cdot e^{\operatorname{tg} 8x}}.$

9.24. $\int \frac{xdx}{e^{3x^2-4}}.$

9.25. $\int \frac{dx}{\sin^2 2x \cdot e^{\operatorname{ctg} 2x-2}}.$

9.26. $\int \frac{dx}{\sqrt{1-9x^2}\, e^{\operatorname{arc\,tg} 3x}}.$

9.27. $\int \frac{x^7 dx}{e^{3x^8-4}}.$

9.28. $\int \frac{e^{\operatorname{ctg} 2x} dx}{\sin^2 2x}.$

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

9.30. $\int \frac{e^{\ln 3x}}{x} dx.$

10. Найти неопределенный интеграл.

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

10.2. $\int (x-2)\cos 5x dx.$

10.3. $\int (x+2)\cos 3x dx.$

10.4. $\int (x-1)\cos 4x dx.$

10.5. $\int \left(7x-10\right)\sin 4x dx.$

10.6. $\int \left(4x+3\right)\sin 5x dx.$

10.7. $\int \left(2-3x\right)\sin 2x dx.$

10.8. $\int \left(x+5\right)\sin 3x dx.$

10.9. $\int \left(8-3x\right)\cos 5x dx.$

10.10. $\int \left(2x-5\right)\cos 4x dx.$

10.11. $\int \left(4x+7\right)\cos 3x dx.$

10.12. $\int \left(x-3\right)\cos 2x dx.$

10.13. $\int \left(3x-2\right)\cos 5x dx.$

10.14. $\int \left(5x+6\right)\cos 2x dx.$

10.15. $\int \left(2-4x\right)\sin 2x dx.$

10.16. $\int \left(4-16x\right)\sin 4x dx.$

10.17. $\int\left(4x-2\right)\cos 2xdx.$ 10.18. $\int\left(1-8x\right)\cos 4xdx.$

10.19. $\int\left(3-7x\right)\cos 2xdx.$ 10.20. $\int\left(2x-15\right)\cos 3xdx.$

10.21. $\int\left(1-5x\right)\sin xdx.$ 10.22. $\int\left(3x-2\right)\sin 2xdx.$

10.23. $\int\left(5x+6\right)\sin 3xdx.$ 10.24. $\int\left(6x+9\right)\sin 2xdx.$

10.25. $\int\left(3-7x\right)\cos 2xdx.$ 10.26. $\int\left(2x-9\right)\sin 2xdx.$

10.27. $\int\left(x+12\right)\cos\frac{x}{3}dx.$ 10.28. $\int\left(2-7x\right)\cos\frac{x}{2}dx.$

10.29. $\int\left(5-2x\right)\sin 4xdx.$ 10.30. $\int\left(4x-4\right)\cos 4xdx.$

11. Найти неопределенный интеграл.

11.1. $\int\left(x+1\right)e^{2x}dx.$ 11.2. $\int\left(7+3x\right)e^{5x}dx.$

11.3. $\int\left(2+3x\right)e^{3x}dx.$ 11.4. $\int\left(2-x\right)e^{4x}dx.$

11.5. $\int\left(x-7\right)e^{2x}dx.$ 11.6. $\int\left(4x+3\right)e^{5x}dx.$

11.7. $\int\left(2-3x\right)e^{2x}dx.$ 11.8. $\int\left(x+5\right)e^{3x}dx.$

11.9. $\int\left(4x+1\right)e^{\frac{x}{4}}dx.$ 11.10. $\int\left(1-x\right)e^{\frac{x}{6}}dx.$

11.11. $\int\left(4x+7\right)e^{3x}dx.$ 11.12. $\int\left(x-3\right)e^{2x}dx.$

11.13. $\int\left(3x-2\right)e^{5x}dx.$ 11.14. $\int\left(5x+6\right)e^{2x}dx.$

11.15. $\int (2-4x)e^{2x}dx.$ 11.16. $\int (4-16x)e^{4x}dx.$

11.17. $\int (4x-2)e^{2x}dx.$ 11.18. $\int (1-8x)e^{4x}dx.$

11.19. $\int (3-7x)e^{2x}dx.$ 11.20. $\int (2x-15)e^{3x}dx.$

11.21. $\int (1-5x)e^{7x}dx.$ 11.22. $\int (3x-2)e^{2x}dx.$

11.23. $\int (5x+6)e^{3x}dx.$ 11.24. $\int (6x+9)e^{2x}dx.$

11.25. $\int (7-5x)e^{8x}dx.$ 11.26. $\int (8-3x)e^{5x}dx.$

11.27. $\int (9x+2)e^{\frac{x}{2}}dx.$ 11.28. $\int (1-4x)e^{\frac{x}{3}}dx.$

11.29. $\int (2-3x)e^{9x}dx.$ 11.30. $\int (2x-5)e^{4x}dx.$

12. Найти неопределенный интеграл.

12.1. $\int \operatorname{arctg} 4x dx.$ 12.2. $\int \ln\left(\frac{x}{2}-1\right)dx.$

12.3. $\int \arccos 2x dx.$ 12.4. $\int \ln(4x-1)dx.$

12.5. $\int \arcsin 3x dx.$ 12.6. $\int \arccos 7x dx.$

12.7. $\int \operatorname{arcctg} 4x dx.$ 12.8. $\int \ln(x-7)dx.$

12.9. $\int \operatorname{arctg}\frac{x}{2}dx.$ 12.10. $\int \arccos\frac{x}{4}dx.$

12.11. $\int \ln(7x+3)dx.$ 12.12. $\int \ln(x+12)dx.$

12.13. $\int \operatorname{arctg}\frac{x}{3}dx.$

12.14. $\int \ln(2x-2)dx.$

12.15. $\int \arccos\left(\frac{x}{5}-5\right)dx.$

12.16. $\int \operatorname{arctg}\frac{x}{7}dx.$

12.17. $\int \ln(1-2x)dx.$

12.18. $\int \arcsin\ (2-3x)dx.$

12.19. $\int \operatorname{arcctg}\ \frac{4x}{3}dx.$

12.20. $\int \ln\left(7-\frac{x}{7}\right)dx.$

12.21. $\int \operatorname{arcctg}\ (3x-5)dx.$

12.22. $\int \arcsin\left(\frac{x}{4}-4\right)dx.$

12.23. $\int \ln(2-2x)dx.$

12.24. $\int \ln(3x-7)dx.$

12.25. $\int \ln(5x-1)dx.$

12.26. $\int \arccos(5-3x)dx.$

12.27. $\int \ln(2-3x)dx.$

12.28. $\int \arcsin(2x+7)dx.$

12.29. $\int \ln\ \frac{7}{6}x\ dx.$

12.30. $\int \arccos\ \frac{x}{11}dx.$

13. Найти неопределенный интеграл.

13.1. $\int x^2 \cos 2x dx.$

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

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

13.4. $\int x^2(\sin x+1)\,dx.$

13.5. $\int (x^2+x)e^{-x}dx.$

13.6. $\int (x^2+x)e^{x}dx.$

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

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

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

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

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

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

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

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

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

13.16. $\int x^2 \left(\cos 2x+3\right) dx.$

13.17. $\int \left(x^3+3\right) \sin x dx.$

13.18. $\int \left(x^2-3\right) \cos x dx.$

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

13.20. $\int \left(x^2-1\right) e^{x} dx.$

13.21. $\int x^2 \cos^2 x dx.$

13.22. $\int \left(x^2+x\right) \sin x dx.$

13.23. $\int \left(x^2+x\right) \cos x dx.$

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

13.25. $\int \left(x^2-1\right) e^{-x} dx.$

13.26. $\int x^2 \left(\cos 2x+2\right) dx.$

13.27. $\int \left(3-x^2\right) e^{3x} dx.$

13.28. $\int \left(5-x^2\right) \cos 5x dx.$

13.29. $\int \left(2x^2-3\right) e^{-x} dx.$

13.30. $\int \left(4+x^2\right) e^{-4x} dx.$

14. Найти неопределенный интеграл.

14.1. $\int \frac{\ln(\cos x) dx}{\cos^2 x}.$

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

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

14.4. $\int \frac{\ln(\cos x) dx}{\sin^2 x}.$

14.5. $\int \frac{\ln(\ln x)}{x} dx.$

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

14.7. $\int \frac{\ln x}{\sqrt{x}} dx.$

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

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

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

14.11. $\int \frac{\ln(\sin x) dx}{\sin^2 x}.$

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

14.13. $\int \frac{\ln x \ln(\ln x)}{x} dx.$

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

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

14.16. $\int \sqrt{x} \ln^2 x dx.$

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

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

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

14.20. $\int \sqrt{x} \ln x dx.$

14.21. $\int \frac{\ln(\sin x) dx}{\cos^2 x}.$

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

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

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

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

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

14.27. $\int \ln \frac{2-x}{2+x} dx.$

14.28. $\int (x^2 - 4) \sin 5x dx.$

14.29. $\int \ln(x^2+5) dx.$

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

15. Найти неопределенный интеграл.

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

15.2. $\int \frac{dx}{x^2-4x+10}$.

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

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

15.5. $\int \frac{dx}{5x^2+2x+7}$.

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

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

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

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

15.10. $\int \frac{dx}{x^2+4x+25}$.

15.11. $\int \frac{dx}{2x^2-8x+30}$.

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

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

15.14. $\int \frac{dx}{5x^2-10x+25}$.

15.15. $\int \frac{dx}{2x^2+3x+6}$.

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

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

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

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

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

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

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

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

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

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

15.26. $\int \frac{dx}{x^2+6x+25}$.

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

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

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

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

16. Найти неопределенный интеграл.

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

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

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

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

16.5. $\int \frac{16x+10}{x^2+2x+3}dx$.

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

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

16.8. $\int \frac{x+8}{x^2-3x+3}dx$.

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

16.10. $\int \frac{x-12}{x^2+4x+5}dx$.

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

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

16.13. $\int \frac{3x+6}{x^2+x+9}dx$.

16.14. $\int \frac{3x+4}{x^2+2x+9}dx$.

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

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

16.17. $\int \frac{5x+1}{x^2+3x+5}dx.$

16.18. $\int \frac{-7x+2}{x^2+x+10}dx.$

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

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

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

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

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

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

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

16.26. $\int \frac{3x+6}{x^2+3x+2}dx.$

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

16.28. $\int \frac{7x-1}{x^2-x+2}dx.$

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

16.30. $\int \frac{6x-1}{x^2-x+4}dx.$

17. Найти неопределенный интеграл.

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

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

17.3. $\int \frac{x-7}{x^2-x-12}dx.$

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

17.5. $\int \frac{x}{x^2+6x+5}dx.$

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

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

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

17.9. $\int \frac{-4x}{x^2+7x+10}dx.$

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

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

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

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

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

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

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

17.17. $\int \frac{6x+7}{x^2-9x+20}dx.$

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

17.19. $\int \frac{x-7}{x^2-7x+10}dx.$

17.20. $\int \frac{2+x}{x^2-8x+12}dx.$

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

17.22. $\int \frac{9x-3}{x^2-9x+14}dx.$

17.23. $\int \frac{dx}{x^2+10x+21}.$

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

17.25. $\int \frac{3}{x^2-9x+18}dx.$

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

17.27. $\int \frac{7x+1}{x^2-5x+6}dx.$

17.28. $\int \frac{1-12x}{x^2-x-12}dx.$

17.29. $\int \frac{9-x}{x^2-5x+4}dx.$

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

18. Найти неопределенный интеграл.

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

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

18.3. $\int \frac{-6x^2+13x-6}{(x+4)(x-2)^2}dx.$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

18.20. $\int \frac{x^2+x+10}{(x+3)(x-4)^2}dx.$

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

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

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

18.24. $\int \frac{-x^2+x-1}{(x+10)(x-12)^2}dx.$

18.25. $\int \frac{8x^2+x+1}{(x+7)x^2}dx.$

18.26. $\int \frac{6x^2+9}{(x+4)(x-2)^2}dx.$

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

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

18.29. $\int \frac{x^2+5x-1}{(x+7)(x-1)^2}dx.$

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

19. Найти неопределенный интеграл.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

19.29. $\int \frac{7x^2+12x+6}{(x+3)(x^2+2x+3)}dx.$

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

20. Найти неопределенный интеграл.

20.1. $\int \frac{1-4x^2}{x+6}dx.$

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

20.3. $\int \frac{1-4x^2}{7x+10}dx.$

20.4. $\int \frac{7x^2-1}{x-3}dx.$

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

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

20.7. $\int \frac{x^2-7}{x-12}dx.$

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

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

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

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

20.12. $\int \frac{9x^2+1}{x-3}.$

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

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

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

20.16. $\int \frac{x^2}{6x+8}dx.$

20.17. $\int \frac{6x^2+7}{9x+20}dx.$

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

20.19. $\int \frac{x^2-7}{7x+10}dx.$

20.20. $\int \frac{2+x^2}{8x+12}dx.$

20.21. $\int \frac{3x^2+2}{9x+7}dx.$

20.22. $\int \frac{9x^2-3}{9x+14}dx.$

20.23. $\int \frac{4x^2+3}{16x+21}dx.$

20.24. $\int \frac{x^2+7}{7x+6}dx.$

20.25. $\int \frac{3x^2}{9x+8}dx.$

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

20.27. $\int \frac{7x^2+1}{5x+6}dx.$

20.28. $\int \frac{1-12x^2}{x-12}dx.$

20.29. $\int \frac{9-x^2}{5x+4}dx.$

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

21. Найти неопределенный интеграл.

21.1. $\int \frac{dx}{5+2\sin x+3\cos x}.$

21.2. $\int \frac{dx}{5-4\sin x+2\cos x}.$

21.3. $\int \frac{3\sin x-2\cos x}{1+\cos x}dx.$

21.4. $\int \frac{dx}{5+3\cos x-5\sin x}.$

21.5. $\int \frac{dx}{10\sin x+5\cos x}.$

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

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

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

21.9. $\int \frac{dx}{3+5\cos x}.$

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

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

21.12. $\int \frac{dx}{8+4\cos x}.$

21.13. $\int \frac{dx}{3\sin x-4\cos x}.$

21.14. $\int \frac{dx}{7\sin x-3\cos x}.$

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

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

21.17. $\int \frac{2-\sin x+3\cos x}{1+\cos x}dx.$

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

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

21.20. $\int \frac{7+6\sin x-5\cos x}{1+\cos x}dx.$

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

21.22. $\int \frac{6\sin x+\cos x}{1+\cos x}dx$.

21.23. $\int \frac{dx}{3\cos x-4\sin x}$.

21.24. $\int \frac{dx}{5+3\cos x}$.

21.25. $\int \frac{dx}{4\sin x-6\cos x}$.

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

21.27. $\int \frac{dx}{3+\sin x}$.

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

21.29. $\int \frac{dx}{2+3\sin x}$.

21.30. $\int \frac{dx}{3+\cos x}$.

22. Найти неопределенный интеграл.

22.1. $\int \frac{dx}{8\sin^2 x-16\sin x\cos x}$.

22.2. $\int \frac{dx}{16\sin^2 x-8\sin x\cos x}$.

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

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

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

22.6. $\int \frac{\operatorname{tg} x}{1-\operatorname{ctg}^2 x}dx$.

22.7. $\int \frac{dx}{4\sin^2 x-5\cos^2 x}$.

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

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

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

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

22.12. $\int \frac{dx}{8\sin^2 x+1}$.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

23. Найти неопределенный интеграл.

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

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

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

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

23.5. $\int \frac{\sin^5 x}{2-\cos x}\,dx.$

23.6. $\int \frac{\cos^3 x}{1+4\sin x}\,dx.$

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

23.8. $\int \frac{\sin^3 x}{1+3\cos x}\,dx.$

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

23.10. $\int \frac{\sin^5 x}{1+\cos x}\,dx.$

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

23.12. $\int \frac{\cos^5 x}{2+3\sin x}\,dx.$

23.13. $\int \frac{\sin^3 x}{1+4\cos x}\,dx.$

23.14. $\int \frac{\sin^5 x}{1+2\cos x}\,dx.$

23.15. $\int \frac{\cos^5 x}{1-2\sin x}\,dx.$

23.16. $\int \frac{\cos^3 x}{1+3\sin x}\,dx.$

23.17. $\int \frac{\sin^5 x}{1-2\cos x}\,dx.$

23.18. $\int \frac{\cos^5 x}{1+\sin x}\,dx.$

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

23.20. $\int \frac{\sin^3 x}{1+7\cos x}\,dx.$

23.21. $\int \frac{\cos^5 x}{1+2\sin x}\,dx.$

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

23.23. $\int \frac{\sin^5 x}{2+\cos x}\,dx.$

23.24. $\int \frac{\cos^5 x}{2-\sin x}\,dx.$

23.25. $\int \frac{\cos^3 x}{1+2\sin x}\,dx.$

23.26. $\int \frac{\sin^5 x}{2+3\cos x}\,dx.$

23.27. $\int \frac{\cos^3 x}{1+\sin x}\,dx.$

23.28. $\int \frac{\cos^5 x}{2+\sin x}\,dx.$

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

23.30. $\int \frac{\cos^5 x}{3-\sin x}dx$.

24. Найти неопределенный интеграл.

24.1. $\int \cos^4 3x \sin^2 3x dx$.

24.2. $\int \sqrt[5]{\sin^4 x}\cos^3 x dx$.

24.3. $\int \cos^3 x \sin^8 x dx$.

24.4. $\int \cos^4 x \sin^3 x dx$.

24.5. $\int \frac{\cos^3 x dx}{\sqrt[3]{\sin^4 x}}$.

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

24.7. $\int \sqrt[5]{\sin^3 2x}\cos^3 2x dx$.

24.8. $\int \cos^4 x \sin^5 x dx$.

24.9. $\int \frac{\sin^3 x dx}{\sqrt[3]{\cos^4 x}}$.

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

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

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

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

24.14. $\int \sqrt[5]{\cos^3 2x}\sin^3 2x dx$.

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

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

24.17. $\int \sin^3 x \sqrt[5]{\cos^4 x} dx$.

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

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

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

24.21. $\int \sin^4 7x \cos^3 7x dx$.

24.22. $\int \sqrt[5]{\cos^4 x}\sin^3 x dx$.

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

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

24.25. $\int \sin^3 \frac{x}{3} \cos^8 \frac{x}{3} dx.$

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

24.27. $\int \frac{\sin^2 x dx}{\cos^6 x}.$

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

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

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

25. Найти неопределенный интеграл.

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

25.2. $\int \sin 3x \cos 5x \ dx.$

25.3. $\int \sin 4x \sin 3x dx.$

25.4. $\int \sin 2x \sin 5x \ dx.$

25.5. $\int \sin 4x \cos 3x \ dx.$

25.6. $\int \cos 2x \cos 6x \ dx.$

25.7. $\int \sin 2x \cos 6x \ dx.$

25.8. $\int \sin 2x \sin 3x \ dx.$

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

25.10. $\int \sin 2x \sin 3x \ dx.$

25.11. $\int \sin 2x \sin 6x \ dx.$

25.12. $\int \cos 2x \cos 5x \ dx.$

25.13. $\int \sin 2x \cos 5x \ dx.$

25.14. $\int \sin 2x \sin 4x \ dx.$

25.15. $\int \cos 2x \cos 5x \ dx.$

25.16. $\int \sin 3x \cos 7x \ dx.$

25.17. $\int \sin 3x \sin 4x \ dx.$

25.18. $\int \cos 2x \cos 7x \ dx.$

25.19. $\int \sin 3x \cos 4x \ dx.$

25.20. $\int \sin 3x \sin 5x \ dx.$

25.21. $\int \cos 3x \cos 2x \, dx.$

25.22. $\int \sin 3x \sin 6x \, dx.$

25.23. $\int \cos 5x \cos 3x \, dx.$

25.24. $\int \sin 2x \cos 3x \, dx.$

25.25. $\int \sin 4x \sin 6x \, dx.$

25.26. $\int \cos 3x \cos 4x \, dx.$

25.27. $\int \sin 3x \cos 2x \, dx.$

25.28. $\int \cos 3x \cos 6x \, dx.$

25.29. $\int \sin 4x \sin 5x \, dx.$

25.30. $\int \sin 4x \cos 2x \, dx.$

26. Найти неопределенный интеграл.

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

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

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

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

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

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

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

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

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

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

26.11. $\int \frac{\sqrt{\left(4-x^2\right)^3}}{x^6} dx.$

26.12. $\int \frac{dx}{\sqrt{\left(1+x^2\right)^5}}.$

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

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

26.15. $\int x^3\sqrt{9-x^2}\,dx.$

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

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

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

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

26.20. $\int \frac{\sqrt{9-x^2}}{x^4}dx.$

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

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

26.23. $\int x^3\sqrt{1-x^2}\,dx.$

26.24. $\int \frac{\sqrt{\left(4-x^2\right)^3}}{x^4}dx.$

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

26.26. $\int \frac{dx}{\sqrt{\left(25+x^2\right)^3}}.$

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

26.28. $\int \frac{dx}{\sqrt{\left(49+x^2\right)^3}}.$

26.29. $\int \frac{dx}{\sqrt{\left(81+x^2\right)^3}}$

26.30. $\int x^3\sqrt{49-x^2}\,dx.$

27. Найти неопределенный интеграл.

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

27.2. $\int \frac{\sqrt{x}-9}{3\sqrt[4]{x}+\sqrt{x}}dx.$

27.3. $\int \frac{1+\sqrt[6]{x}}{\sqrt[3]{x}+\sqrt{x}}\,dx.$

27.4. $\int \frac{\sqrt{x}-8}{\sqrt{x}-2\sqrt[3]{x}}\,dx.$

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

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

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

27.8. $\int \frac{\sqrt{x}}{\sqrt{x}-\sqrt[4]{x}}dx.$

27.9. $\int \frac{\sqrt[6]{x}}{\sqrt{x}-\sqrt[3]{x}}dx.$

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

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

27.12. $\int \frac{\sqrt{x}-1}{\sqrt{x}-\sqrt[4]{x}}dx.$

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

27.14. $\int \frac{2dx}{\sqrt{x}-\sqrt[3]{x}}.$

27.15. $\int \frac{\sqrt{x}-1}{\sqrt{x}+\sqrt[4]{x}}\,dx.$

27.16. $\int \frac{\sqrt[6]{x}}{\sqrt{x}+\sqrt[3]{x}}\,dx.$

27.17. $\int \frac{\sqrt{x}+1}{\sqrt{x}+\sqrt[3]{x}}\,dx.$

27.18. $\int \frac{dx}{\sqrt{x}-\sqrt[4]{x}}.$

27.19. $\int \frac{\sqrt[6]{x}}{\sqrt{x}-\sqrt[3]{x}}\,dx.$

27.20. $\int \frac{2\sqrt{x}}{\sqrt{x}-\sqrt[3]{x}}\,dx.$

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

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

27.23. $\int \frac{\sqrt{x}+8}{\sqrt{x}+2\sqrt[3]{x}}\,dx.$

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

27.25. $\int \frac{\sqrt[6]{x}-2}{\sqrt{x}-2\sqrt[3]{x}}\,dx.$

27.26. $\int \frac{dx}{\sqrt{x}-2\sqrt[3]{x}}.$

27.27. $\int \frac{\sqrt[6]{x}}{\sqrt{x}-2\sqrt[3]{x}}\,dx.$

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

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

27.30. $\int \frac{\sqrt[6]{x}+1}{\sqrt{x}+2\sqrt[3]{x}}\,dx.$

28. Найти неопределенный интеграл.

28.1. $\int \frac{dx}{2+\sqrt{x+3}}.$

28.2. $\int \frac{xdx}{\sqrt{x+3}}.$

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

28.4. $\int \frac{xdx}{2+\sqrt{x+4}}.$

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

28.6. $\int \frac{(x+1)dx}{x\sqrt{x+2}}.$

28.7. $\int \frac{dx}{(x+1)\sqrt{x+4}}.$

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

28.9. $\int \frac{dx}{3+\sqrt{x}}.$

28.10. $\int \frac{dx}{(x+3)\sqrt{x}}.$

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

28.12. $\int \frac{xdx}{\sqrt{x-1}}.$

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

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

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

28.16. $\int \frac{dx}{x\sqrt{x-7}}$.

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

28.18. $\int \frac{x^3dx}{\sqrt{x-7}}$.

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

28.20. $\int \frac{\sqrt{x+4}}{x}dx$.

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

28.22. $\int \frac{\sqrt{x}\ dx}{x+10}$.

28.23. $\int \frac{dx}{(x-1)\sqrt{x}}$.

28.24. $\int \frac{dx}{1+\sqrt{x-2}}$.

28.25. $\int \frac{dx}{x\sqrt{x-2}}$.

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

28.27. $\int \frac{(x-1)dx}{x\sqrt{x-2}}$.

28.28. $\int \frac{x^3dx}{\sqrt{x+6}}$.

28.29. $\int \frac{dx}{3+\sqrt{x-6}}$.

28.30. $\int \frac{dx}{2+\sqrt{x-8}}$.

29. Вычислить определенный интеграл.

29.1. $\int_0^1 (3x^2-2x+1)dx$.

29.2. $\int_4^9 \sqrt{x}(1+\sqrt{x})dx$.

29.3. $\int_1^4 \frac{dx}{x^2}$.

29.4. $\int_1^2 (\sqrt{x}-\sqrt[3]{x})dx$.

29.5. $\int_4^1 \frac{dx}{x^3}$.

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

29.7. $\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} (\cos x - 1)dx$.

29.8. $\int_1^8 \frac{dx}{\sqrt[3]{x^2}}$.

29.9. $\int_1^9 3(\sqrt{x} - x)dx$.

29.10. $\int_1^2 \left(x^2 + \frac{1}{x^4}\right)dx$.

29.11. $\int_1^2 \left(x + \frac{1}{x}\right)^2 dx$.

29.12. $\int_0^2 (x^2 - 2x)dx$.

29.13. $\int_1^8 \left(\sqrt[3]{x^2} + \frac{1}{\sqrt[3]{x^2}}\right)dx$.

29.14. $\int_0^3 e^{\frac{x}{3}}dx$.

29.15. $\int_0^4 (1+\sqrt{x})^2 dx$.

29.16. $\int_0^{\pi} (\sin x + 3)dx$.

29.17. $\int_0^{\frac{\pi}{4}} \sin 4x dx$.

29.18. $\int_a^2 \frac{dx}{\sqrt{2x}}$.

29.19. $\int_0^{\frac{\pi}{3}} \sin 3x dx$.

29.20. $\int_0^4 \left(e^{-\frac{x}{4}} - 2e^{2x}\right)dx$.

29.21. $\int_1^4 \frac{dx}{x-2}$.

29.22. $\int_1^2 \left(x^3 + \frac{1}{x^2}\right)dx$.

29.23. $\int_0^1 \frac{dx}{\sqrt{(1+x)^3}}$.

29.24. $\int_0^3 (e^{4x}+2x)dx$.

29.25. $\int_0^{\pi} (x^2-\sin 2x)dx$.

29.26. $\int_0^1 (\sqrt{3x}-\frac{\sqrt[4]{x}}{2})dx$.

29.27. $\int_{\frac{\pi}{4}}^{\frac{\pi}{3}} \left(\frac{1}{\cos^2 x}+1\right)dx$.

29.28. $\int_0^{\frac{\pi}{6}} \sin 6x dx$.

29.29. $\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} (\sin x-\cos x)dx$.

29.30. $\int_0^{\frac{\pi}{6}} \left(\frac{1}{\sin^2 x}+2\right)dx$.

30. Вычислить определенный интеграл.

30.1. $\int_0^2 \sqrt{4-x^2}dx$.

30.2. $\int_0^{1/\sqrt{2}} \frac{dx}{\left(1-x^2\right)\sqrt{1-x^2}}$.

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

30.4. $\int_{-\pi/2}^{\pi/2} \frac{dx}{1+\cos x}$.

30.5. $\int_0^2 \frac{x^2 dx}{\sqrt{16-x^2}}$.

30.6. $\int_0^{\pi/2} \frac{\sin x dx}{5+3\sin x}$.

30.7. $\int_1^2 \frac{\sqrt{x^2-1}}{x^4}dx$.

30.8. $\int_{-3}^3 x^2\sqrt{9-x^2}dx$.

30.9. $\int_0^{\pi/4} \frac{dx}{\cos x\left(1+\cos x\right)}$.

30.10. $\int_0^2 \frac{dx}{\left(4+x^2\right)\sqrt{4+x^2}}$.

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

30.12. $\int_{\sqrt{2}/2}^1 \frac{\sqrt{1-x^2}}{x^2}\,dx$.

30.13. $\int_0^{\frac{\pi}{2}} \frac{\sin x}{2+\sin x}dx$.

30.14. $\int_0^5 \frac{dx}{\left(25+x^2\right)\cdot\sqrt{25+x^2}}$.

30.15. $\int_0^1 \frac{dx}{(2-x)\sqrt{x+1}}$.

30.16. $\int_0^2 \frac{x^2}{\sqrt{16-x^2}}\,dx$.

30.17. $\int_{\frac{\pi}{2}}^{2arctg\,2} \frac{dx}{\sin x(1+\sin x)}$.

30.18. $\int_0^1 x^2\sqrt{1-x^2}\,dx$.

30.19. $\int_0^4 x^2\sqrt{16-x^2}\,dx$.

30.20. $\int_{-1}^1 \frac{x\,dx}{\sqrt{5-4x}}$.

30.21. $\int_3^8 \frac{\sqrt{x+1}+1}{\sqrt{x+1}-1}\,dx$.

30.22. $\int_1^2 \frac{x+\sqrt{3x-2}-10}{\sqrt{3x-2}+7}\,dx$.

30.23. $\int_0^{\pi/2} \frac{dx}{5\cos^2 x-1}$.

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

30.25. $\int_{-1}^1 \frac{x}{\sqrt{5-4x}}\,dx$.

30.26. $\int_0^{2\pi} \frac{dx}{5-3\cos x}$.

30.27. $\int_0^{\pi} \frac{dx}{3+2\cos x}$.

30.28. $\int_0^1 \frac{dx}{x+\sqrt{x+1}}$.

30.29. $\int_0^4 \frac{dx}{1+\sqrt{2x+1}}$.

30.30. $\int_0^{5/2} \frac{x^2}{\sqrt{25-x^2}}\,dx$.

31. Вычислить определенный интеграл.

31.1. $\int_0^{\pi/2} x\cos x\,dx.$

31.2. $\int_0^{e-1} \ln(x+1)\,dx.$

31.3. $\int_1^2 \ln(x+3)\,dx.$

31.4. $\int_0^{1/2} \arcsin x\,dx.$

31.5. $\int_0^{\sqrt{3}} x\,\mathrm{arctg}\,x\,dx.$

31.6. $\int_0^1 x e^{-x}\,dx.$

30.7. $\int_1^2 \ln(x+2)\,dx.$

31.8. $\int_1^2 e^x\,x\,dx.$

31.9. $\int_0^{\pi/3} x\sin 3x\,dx.$

31.10. $\int_1^2 x\ln x dx.$

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

31.12. $\int_{-1}^{1} (2x+1)\mathrm{e}^{\frac{x}{3}}\,dx.$

31.13. $\int_0^{\pi} (x+2)\sin x dx.$

31.14. $\int_0^{\pi} (x-4)\cos 3x dx.$

31.15. $\int_{\pi/2}^{\pi} x\sin 3x\,dx.$

31.16. $\int_{-\pi}^{\pi/3} (4x+3)\cos x dx.$

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

31.18. $\int_0^{1/2} \arccos x\,dx.$

31.19. $\int_{-2}^{0} (x+2)\mathrm{e}^{\frac{x}{2}}\,dx.$

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

31.21. $\int_0^1 (x+5)e^{3x}\,dx.$

31.22. $\int_0^{\pi/4} (x+2)\cos 3x dx.$

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

31.24. $\int_0^1 \operatorname{arctg}\ 3x\,dx.$

31.25. $\int_0^1 \arccos 3x\,dx.$

31.26. $\int_{-\pi}^0 (x+2)\sin 2x dx.$

31.27. $\int_0^{2\pi} (1-8x)\cos 4x dx.$

31.28. $\int_{-1}^3 (x+6)e^{3x}\,dx.$

31.29. $\int_0^{\frac{\pi}{2}} (1-5x)\sin x dx.$

31.30. $\int_{\frac{\pi}{4}}^0 (3-x)\sin 2x dx.$

32. Вычислить площадь фигуры, ограниченной графиками данных функций.

32.1. $y=4-x^2,\quad y=x+2.$

32.2. $y=x^2,\quad y=3-x.$

32.3. $y=4-x^2, y=x^2-2x.$

32.4. $y=\sqrt{x},\quad y=x^3.$

32.5. $xy=4,\quad y=5-x.$

32.6. $x=y^2-4,\quad y=-x-2.$

32.7. $y=x^2,\quad y-2-x^2.$

32.8. $y^2=2x+4,\quad x=0.$

32.9. $x=(y-2)^3,$
$x=4y-8.$

32.10. $x=4-y^2,$
$x=y^2-2y.$

32.11. $x=\sqrt{4-y^2},\quad x=0,$
$y=0,\quad y=1.$

32.12. $y=(x-1)^2,$
$y^2=x-1.$

32.13. $x = 4 - (y-1)^2$, $x = y^2 - 4y + 3$.

32.14. $y = \frac{1}{x}$, $y = 6e^x$, $y = 1$, $y = 6$.

32.15. $y = \frac{3}{x}, y = 4e^x$, $y = 3$, $y = 4$.

32.16. $y = 6x - x^2$, $y = 0$.

32.17. $y = \frac{3}{2}\sqrt{x}$, $y = \frac{3}{2x}$, $x = 4$.

32.18. $y = \sin x$, $y = \cos x$, $x = 0$, $(x \le 0)$.

32.19. $x = 8 - y^2$, $x = -2y$.

32.20. $x = 5 - y^2$, $x = -4y$.

32.21. $y = 32 - x^2$, $y = -4x$.

32.22. $x = 27 - y^2$, $x = -6y$.

32.23. $y = 3\sqrt{x}$, $y = \frac{3}{x}$, $x = 9$.

32.24. $y = \frac{3}{x}$, $y = 8e^x$, $y = 3$, $y = 8$.

32.25. $y = \frac{\sqrt{x}}{2}$, $y = \frac{1}{2x}$, $x = 16$.

32.26. $y = \sqrt{x}$, $y = \frac{1}{x}$, $x = 4$.

32.27. $y = \frac{25}{4} - x^2$, $y = x - \frac{5}{2}$.

32.28. $y = 11 - x^2$, $y = -10x$.

32.29. $y = \sqrt{24 - x^2}$, $2\sqrt{3}y = x^2$, $x = 0$ $(x \ge 0)$.

32.30. $y = \frac{2}{x}, y = 7e^x$, $y = 2$, $y = 7$.

33. Вычислить длину дуги кривой, заданной данным уравнением.

33.1. $y = \ln x, \quad \sqrt{3} \le x \le \sqrt{15}.$

33.2. $y = \ln \sin x + 2, \quad 0 \le x \le \pi/3.$

33.3. $y = \sqrt{1 - x^2} + \arcsin x, \quad 0 \le x \le 7/9.$

33.4. $y = \ln \dfrac{5}{2x}, \quad \sqrt{3} \le x \le \sqrt{8}.$

33.5. $y = -\ln \cos x, \quad 0 \le x \le \pi/6.$

33.6. $y = \mathrm{e}^x + 6, \quad \ln\sqrt{8} \le x \le \ln\sqrt{15}.$

33.7. $y = 2 + \arcsin\sqrt{x} + \sqrt{x - x^2}, \quad 1/4 \le x \le 1.$

33.8. $y = \ln\left(x^2 - 1\right), \quad 2 \le x \le 3.$

33.9. $y = \sqrt{1 - x^2} + \arccos x, \quad 0 \le x \le 8/9.$

33.10. $y = \ln\left(1 - x^2\right), \quad 0 \le x \le 1/4.$

33.11. $y = 1 - \ln \cos x, \quad 0 \le x \le \pi/6.$

33.12. $y = \mathrm{e}^x + 13, \quad \ln\sqrt{15} \le x \le \ln\sqrt{24}.$

33.13. $y = -\arccos\sqrt{x} + \sqrt{x - x^2}, \quad 0 \le x \le 1/4.$

33.14. $y = 2 - \mathrm{e}^x, \quad \ln\sqrt{3} \le x \le \ln\sqrt{8}.$

33.15. $y = \arcsin x - \sqrt{1 - x^2}, \quad 0 \le x \le 15/16.$

33.16. $y = 1 - \ln \sin x, \quad \pi/3 \le x \le \pi/2.$

33.17. $y = 1 - \ln\left(x^2 - 1\right), \quad 3 \le x \le 4.$

33.18. $y = \sqrt{x - x^2} - \arccos\sqrt{x} + 5, \quad 1/9 \le x \le 1.$

33.19. $y = -\arccos x + \sqrt{1 - x^2} + 1, \quad 0 \le x \le 9/16.$

33.20. $y = \ln\sin x, \quad \pi/3 \le x \le \pi/2.$

33.21. $y = \ln 7 - \ln x, \quad \sqrt{3} \le x \le \sqrt{8}.$

33.22. $y = 1 + \arcsin x - \sqrt{1 - x^2}, \quad 0 \le x \le 3/4.$

33.23. $y = \ln\cos x + 2, \quad 0 \le x \le \pi/6.$

33.24. $y = \mathrm{e}^x + 26, \quad \ln\sqrt{8} \le x \le \ln\sqrt{24}.$

33.25. $y = \dfrac{\mathrm{e}^x + \mathrm{e}^{-x}}{2} + 3, \quad 0 \le x \le 2.$

33.26. $y = \arccos\sqrt{x} - \sqrt{x - x^2} + 4, \quad 0 \le x \le 1/2.$

33.27. $y = \dfrac{\mathrm{e}^x + \mathrm{e}^{-x} + 3}{4}, \quad 0 \le x \le 2.$

33.28. $y = \mathrm{e}^x + \mathrm{e}, \quad \ln\sqrt{3} \le x \le \ln\sqrt{15}.$

33.29. $y = \dfrac{1 - \mathrm{e}^x - \mathrm{e}^{-x}}{2}, \quad 0 \le x \le 3.$

33.30. $y = \ln 2 - \ln x, \quad \sqrt{3} \le x \le \sqrt{8}.$

34. Вычислить несобственный интеграл или доказать его расходимость.

34.1. $\displaystyle\int_{-\infty}^{+\infty} \frac{dx}{x^2 + 1}.$

34.2. $\displaystyle\int_{1}^{\infty} \frac{dx}{x^2 + \sqrt[4]{x}}.$

34.3. $\displaystyle\int_{1}^{\infty} \frac{e^{-x}}{x}\,dx.$

34.4. $\displaystyle\int_{2}^{\infty} \frac{x}{\sqrt{x^4 + 1}}\,dx.$

34.5. $\int_0^{\infty} \frac{\sin x}{x^2}\,dx.$

34.6. $\int_{-\infty}^{\infty} \frac{dx}{x^4+4x+9}.$

34.7. $\int_1^{\infty} \frac{dx}{x^2\sqrt{x^2-1}}.$

34.8. $\int_1^{\infty} \frac{dx}{x^3+x}.$

34.9. $\int_{-\infty}^{\infty} \frac{dx}{x^2+2x+2}.$

34.10. $\int_2^{\infty} \frac{dx}{x\sqrt{x^2-1}}.$

34.11. $\int_1^{\infty} \frac{x^3+1}{x^4}\,dx.$

34.12. $\int_{-\infty}^{+\infty} \frac{dx}{x^2+2x+5}.$

34.13. $\int_1^{\infty} \frac{dx}{x^3+x}.$

34.14. $\int_0^{\infty} \frac{x+3}{x+2}\,dx.$

34.15. $\int_2^{\infty} \frac{dx}{x^2-4x+5}.$

34.16. $\int_{-\infty}^{\infty} \frac{2x}{x^2+1}\,dx.$

34.17. $\int_0^{\infty} \frac{dx}{x^3+4}.$

34.18. $\int_2^{\infty} \frac{\ln x}{x}\,dx.$

34.19. $\int_1^{\infty} \frac{dx}{x^3+x^2}.$

34.20. $\int_1^{\infty} \frac{dx}{x^2+\sqrt[4]{x}}.$

34.21. $\int_2^{+\infty} \frac{x}{x-1}\,dx.$

34.22. $\int_0^{\infty} \frac{dx}{\sqrt{x-1}}.$

34.23. $\int_{-\infty}^{+\infty} \frac{dx}{x^2-6x+10}.$

34.24. $\int_0^{\infty} \frac{x}{\sqrt{x^5+1}}\,dx.$

34.25. $\int_2^{\infty} \frac{dx}{x\sqrt{x^2-1}}.$

34.26. $\int_2^{\infty} \frac{x\,dx}{\sqrt{x^2+1}}.$

34.27. $\int\limits_{-\infty}^{\infty} \frac{dx}{x^2+4x+5}$.

34.28. $\int\limits_{0}^{\infty} x\sin x\,dx$.

34.29. $\int\limits_{0}^{\infty} \frac{dx}{\sqrt{1+x}}$.

34.30. $\int\limits_{1}^{\infty} \frac{dx}{x^2\sqrt{x^2-1}}$.

35. Вычислить несобственный интеграл или доказать его расходимость.

35.1. $\int\limits_{0}^{3} \frac{dx}{\sqrt{9-x^2}}$.

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

35.3. $\int\limits_{0}^{1} \frac{dx}{x^3-5x}$.

35.4. $\int\limits_{3}^{5} \frac{x}{(x-3)(5-x)}\,dx$.

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

35.6. $\int\limits_{2}^{4} \frac{dx}{x^2-5x+6}$.

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

35.8. $\int\limits_{1}^{2} \frac{x^2}{x^2-1}\,dx$.

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

35.10. $\int\limits_{0}^{2} \frac{dx}{x^2-4}$.

35.11. $\int\limits_{-4}^{0} \frac{dx}{\sqrt{16-x^2}}$.

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

35.13. $\int\limits_{-3/4}^{0} \frac{dx}{\sqrt{4x+3}}$.

35.14. $\int\limits_{0}^{3} \frac{dx}{x^2-3x+2}$.

35.15. $\int\limits_{1/2}^{1} \frac{dx}{\sqrt[7]{1-2x}}$.

35.16. $\int\limits_{-1}^{0} \frac{xdx}{\sqrt{1-x^2}}$.

35.17. $\int_0^3 \frac{dx}{x^2-9}$.

35.18. $\int_0^2 \frac{dx}{\sqrt{4-x^2}}$.

35.19. $\int_0^5 \frac{dx}{\sqrt[3]{x-5}}$.

35.20. $\int_{-3}^0 \frac{dx}{\sqrt{x+3}}$.

35.21. $\int_0^1 \frac{dx}{x^3+x}$.

35.22. $\int_1^2 \frac{x}{x-1}dx$.

35.23. $\int_3^5 \frac{dx}{(x-3)^2}$.

35.24. $\int_0^2 \frac{dx}{\sqrt{2-x}}$.

35.25. $\int_0^1 \frac{dx}{x^2+4x}$.

35.26. $\int_{-1}^0 \frac{dx}{x^3+1}$.

35.27. $\int_1^3 \frac{x\ dx}{(x-3)(x+2)}$.

35.28. $\int_0^1 \frac{dx}{x^2+2x}$.

35.29. $\int_0^2 \frac{xdx}{\sqrt{4-x^2}}$.

35.30. $\int_0^{\sqrt{3}} \frac{xdx}{\sqrt{x^2-3}}$.

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