

Анықталмаған интегралды табыңдар.

1. $\int x^2 \sqrt{4-x^2} dx.$ (Жауабы: $\frac{x}{4}(x^2-2)\sqrt{4-x^2} + 2\arcsin \frac{x}{2} + C.$)

2. $\int \frac{dx}{(x^2+4)\sqrt{4x^2+1}}.$ (Жауабы: $\frac{1}{4\sqrt{15}} \ln \left| \frac{x\sqrt{15}+2\sqrt{4x^2+1}}{x\sqrt{15}-2\sqrt{4x^2+1}} \right| + C.$)

3. $\int (x+1)\sqrt{x^2+2x} dx.$ (Жауабы: $\frac{1}{3}\sqrt{(x^2+3x)^3} + C.$)

4. $\int \ln(x+\sqrt{1+x^2}) dx.$ (Жауабы: $x \ln(x+\sqrt{1+x^2}) - \sqrt{1+x^2} + C.$)

5. $\int \arccos \sqrt{\frac{x}{x+1}} dx.$ (Жауабы: $\arccos \sqrt{\frac{x}{x+1}} + \sqrt{x} - \arctg \sqrt{x} + C.$)

6. $\int \frac{2xdx}{(x+1)(x^2+1)^2}.$ (Жауабы: $\frac{x-1}{2(x^2+1)} - \frac{1}{2} \ln|x+1| + \frac{1}{4} \ln(1+x^2) + C.$)

7. $\int \frac{\ln(x+1)}{\sqrt{x+1}} dx.$ (Жауабы: $2\sqrt{x+1}(\ln(x+1)-2) + C.$)

8. $\int e^{\sqrt[3]{x}} dx.$ (Жауабы: $3e^{\sqrt[3]{x}}(\sqrt[3]{x^2}-2\sqrt[3]{x}+2) + C.$)

Анықталмаған интегралдарды табыңыз

(№ 1-5 тапсырмаларда интегралдау нәтижесін дифференциалдау арқылы тексеріңіз)

1.

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

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

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

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

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

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

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

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

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

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

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

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

$$1.13. \int \left(x^2 - \frac{\sqrt[6]{x}}{x} - 3 \right) dx.$$

$$1.15. \int \left(\frac{\sqrt[3]{x}}{x} + 2x^3 - 4 \right) dx.$$

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

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

$$1.21. \int \left(\sqrt[5]{x^2} - \frac{2}{x^3} + 4 \right) dx.$$

$$1.23. \int \frac{\sqrt[5]{x} - 2x^3 + 4}{x^2} dx.$$

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

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

$$1.29. \int \left(\frac{\sqrt[3]{x^2}}{x} - \frac{7}{x^3} + 5 \right) dx.$$

$$1.14. \int \frac{\sqrt[3]{x^2} - 2x^5 + 3}{x} dx.$$

$$1.16. \int \frac{\sqrt{x^3} - 3x^4 + 2}{x} dx.$$

$$1.18. \int \frac{2x^3 - \sqrt{x^5} + 5}{x^2} dx.$$

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

$$1.22. \int \frac{\sqrt{x} - 2x^3 + 6}{x} dx.$$

$$1.24. \int \left(\sqrt{x} - \frac{3x^2}{\sqrt{x^3}} + 2 \right) dx.$$

$$1.26. \int \frac{\sqrt[7]{x^6} - 2x^2 + 3}{x} dx.$$

$$1.28. \int \left(\frac{2x^2}{\sqrt{x}} - \frac{5}{x} + 6 \right) dx.$$

$$1.30. \int \left(\frac{5x^2}{\sqrt{x}} - \sqrt[3]{x^2} + 2 \right) dx.$$

$$2.1. \int \sqrt{3+x} \, dx.$$

$$2.3. \int \sqrt[3]{(1+x)^2} \, dx.$$

$$2.2. \int \sqrt[3]{1+x} \, dx.$$

$$2.4. \int \frac{dx}{\sqrt{1+x}}.$$

$$2.5. \int \frac{dx}{\sqrt{(1-x)^3}}.$$

$$2.7. \int (1-4x)^7 dx.$$

$$2.9. \int (1-3x)^4 dx.$$

$$2.11. \int \sqrt{5-4x} dx.$$

$$2.13. \int \frac{dx}{\sqrt[3]{(1-4x)^5}}.$$

$$2.15. \int \frac{dx}{\sqrt[3]{2-5x}}.$$

$$2.17. \int \sqrt[4]{1+3x} dx.$$

$$2.19. \int \frac{dx}{\sqrt{(3-x)^5}}.$$

$$2.21. \int \frac{dx}{(2+x)^3}.$$

$$2.23. \int \sqrt{5-4x} dx.$$

$$2.25. \int \sqrt[4]{2-5x} dx.$$

$$2.27. \int \sqrt{3-4x} dx.$$

$$2.29. \int \sqrt[4]{(3+5x)^3} dx.$$

$$2.6. \int \frac{dx}{\sqrt[3]{2+x}}.$$

$$2.8. \int (1+4x)^5 dx.$$

$$2.10. \int \sqrt{1+3x} dx.$$

$$2.12. \int \frac{dx}{\sqrt[3]{5+3x}}.$$

$$2.14. \int \frac{dx}{\sqrt[3]{(3-4x)^2}}.$$

$$2.16. \int \sqrt[5]{3-2x} dx.$$

$$2.18. \int \sqrt[3]{1+3x} dx.$$

$$2.20. \int \frac{dx}{\sqrt[3]{3+x}}.$$

$$2.22. \int \sqrt[3]{5-2x} dx.$$

$$2.24. \int \sqrt[5]{(6-5x)^2} dx.$$

$$2.26. \int \sqrt[3]{4-2x} dx.$$

$$2.28. \int \sqrt[5]{3+2x} dx.$$

$$2.30. \int \sqrt[3]{(2-x)^2} dx.$$

3.

3.1. $\int \frac{dx}{3-x}$.

3.2. $\int \frac{dx}{3x+9}$.

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

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

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

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

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

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

3.9. $\int \frac{dx}{3x-4}$.

3.10. $\int \frac{dx}{4-3x}$.

3.11. $\int \frac{dx}{3x+4}$.

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

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

3.14. $\int \frac{dx}{4-7x}$.

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

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

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

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

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

3.20. $\int \frac{dx}{6-3x}$.

3.21. $\int \frac{dx}{6+5x}$.

3.22. $\int \frac{dx}{1-7x}$.

3.23. $\int \frac{dx}{1+6x}$.

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

3.25. $\int \frac{dx}{7-3x}$.

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

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

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

3.29. $\int \frac{dx}{7x-3}$.

3.30. $\int \frac{dx}{6x+1}$.