Варианты задач:

Вариант №1.

1. $\int \sqrt{1+x^2}\,x\,dx$
2. $\int (2x+1)e^{-2x}\,dx$
3. $\int e^{-2x}\sin x\,dx$
4. $\int \frac{2x-3}{\sqrt{4x-x^2}}\,dx$
5. $\int \frac{2e^{2x}}{e^{2x}+4e^{x}+5}\,dx$
6. $\int \frac{6x-4}{(x-2)^2(x+2)}\,dx$
7. $\int \frac{6x+2}{(x^2-2x+2)(x+2)}\,dx$
8. $\int \sin 7x\cos 3x\,dx$
9. $\int \frac{\sin x}{1+\sin x+\cos x}\,dx$
10. $\int \frac{1}{\sqrt{(1-x^2)^3}}\,dx$

Вариант №2

1. $\int \sqrt{1+x^3}\,x^2\,dx$
2. $\int x^2 \sin 2x dx$
3. $\int e^{-x} \sin 2x dx$
4. $\int \frac{2x-3}{\sqrt{x^2+4x}}\,dx$
5. $\int \frac{2e^{2x}}{e^{2x}+4e^{x}+3}\,dx$
6. $\int \frac{6x+4}{(x+2)^2(x-2)}\,dx$
7. $\int \frac{6x}{(x^3+8)}\,dx$
8. $\int \sin 7x \sin 3x dx$
9. $\int \frac{\cos x}{1+\sin x+\cos x}\,dx$
10. $\int \frac{1}{\sqrt{(x^2-1)^3}}$

Вариант №3

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

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

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

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

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

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

7. $\int \frac{6x+12}{(x^3-8)} dx$

8. $\int \cos 7x \cos 3x dx$

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

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

Вариант №4.

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

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

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

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

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

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

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

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

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

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

Вариант №5.

1. $\int \frac{e^{\frac{1}{x}}}{x^2} dx$
2. $\int (x^2 + 2x)\sin x dx$
3. $\int e^{-x} \sin x dx$
4. $\int \frac{2x-3}{\sqrt{x^2+6x}} dx$
5. $\int \frac{2e^{2x}}{e^{2x} - 4e^x + 5} dx$
6. $\int \frac{6x-4}{(x+1)^2(x-1)} dx$
7. $\int \frac{6x}{(x^3+1)} dx$
8. $\int \sin^4 x dx$
9. $\int \frac{\cos x}{\sin x + 2\cos x} dx$
10. $\int \frac{1}{\sqrt{(x^2-4)^3}} dx$

Вариант №6.

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

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

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

4. $\int \frac{2x-5}{\sqrt{x^2+6x+25}} dx$

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

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

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

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

9. $\int \frac{\cos x}{\sin x - 2\cos x} dx$

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

Вариант №7.

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

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

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

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

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

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

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

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

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

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

Вариант №8.

1. $\int \frac{x}{4+x^4}dx$
2. $\int (x^2+2x)\cos 2x dx$
3. $\int e^x \sin 2x dx$
4. $\int \frac{4x-3}{x^2+4x+3}dx$
5. $\int \frac{2e^{2x}}{\sqrt{5-4e^x-e^{2x}}}dx$
6. $\int \frac{6x+3}{(x-2)^2(x+1)}dx$
7. $\int \frac{6x+4}{(x^2+4)(x-1)}dx$
8. $\int \sin 4x \sin 2x dx$
9. $\int \frac{\cos x}{\sin x+\cos x}dx$
10. $\int \frac{1}{\sqrt{(x^2-9)^3}}dx$

Вариант №9.

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

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

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

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

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

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

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

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

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

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

Вариант №10.

1. $\int \frac{\ln^2 x}{x} dx$
2. $\int x^2 \ln x dx$
3. $\int e^{2x} \sin 2x dx$
4. $\int \frac{2x-3}{\sqrt{8x-x^2}} dx$
5. $\int \frac{2e^x}{e^{2x}+6e^x+10} dx$
6. $\int \frac{6x-2}{(x-1)^2(x-3)} dx$
7. $\int \frac{4x+10}{(x^2+2x+10)(x-2)} dx$
8. $\int \sin^3 x \cos^2 x dx$
9. $\int \frac{\sqrt[3]{x}}{\sqrt[3]{x}+\sqrt{x}} dx$
10. $\int \sqrt{(4-x^2)^3} dx$

Вариант №11.

1. $\int \frac{\sin \ln x}{x} dx$

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

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

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

5. $\int \frac{2e^x}{e^{2x} - 6e^x + 10} dx$

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

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

8. $\int \sin^6 x dx$

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

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

Вариант №12.

1. $\int \frac{e^{tgx}}{\cos^2 x} dx$
2. $\int (x^2 + x) \ln x dx$
3. $\int e^x \cos 3x dx$
4. $\int \frac{6x-5}{\sqrt{x^2+4x+8}} dx$
5. $\int \frac{2e^x}{e^{2x} - 6e^x + 8} dx$
6. $\int \frac{6x-9}{x(x+1)(x+3)} dx$
7. $\int \frac{6}{(x^3-1)} dx$
8. $\int \cos^6 x dx$
9. $\int \frac{\sqrt{x}}{\sqrt[3]{x+1}} dx$
10. $\int \sqrt{(9-x^2)^3} dx$

Вариант №13.

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

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

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

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

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

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

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

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

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

10. $\int \frac{1}{\sqrt{(16-x^2)^3}}dx$

Вариант №14.

1. $\int \frac{x^3}{4+x^8}dx$

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

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

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

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

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

7. $\int \frac{6x+4}{(x^2+9)(x-1)}dx$

8. $\int \sin x \sin 9x dx$

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

10. $\int \frac{1}{\sqrt{(x^2-16)^3}}dx$

Вариант №15.

1. $\int \frac{x^4}{\sqrt{1-x^{10}}}dx$

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

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

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

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

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

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

8. $\int \cos 3x\cos 2x dx$

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

10. $\int \frac{1}{\sqrt{(x^2+16)^3}}dx$

Вариант №16.

1. $\int \frac{arctgx}{1+x^2}dx$
2. $\int \sqrt{x}\ln x dx$
3. $\int e^{-2x}\sin 4x dx$
4. $\int \frac{6x-2}{\sqrt{2x-x^2}}dx$
5. $\int \frac{2x^5}{x^6+6x^3+10}dx$
6. $\int \frac{6x-2}{(x-1)^2(x+1)}dx$
7. $\int \frac{4x+5}{(x^2+2x+10)(x+1)}dx$
8. $\int \sin^3 x dx$
9. $\int \frac{\sqrt[3]{x+1}}{\sqrt[3]{x+1}+\sqrt{x+1}}dx$
10. $\int x^2\sqrt{(4-x^2)^3}dx$

Вариант №17.

1. $\int \frac{arctg2x}{1+4x^2}dx$

2. $\int \sqrt{x^3}\ln x dx$

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

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

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

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

7. $\int \frac{12}{(x^3+8)}dx$

8. $\int \sin^5 x dx$

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

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

Вариант №18.

1. $\int \frac{tg^3 x}{\cos^2 x} dx$
2. $\int \sqrt{x^5} \ln x dx$
3. $\int e^{-4x} \cos 3x dx$
4. $\int \frac{8x-5}{\sqrt{x^2+4x+5}} dx$
5. $\int \frac{2e^{2x}}{e^{2x}-6e^x+10} dx$
6. $\int \frac{6x-2}{x(x-1)(x+3)} dx$
7. $\int \frac{12}{(x^3-8)} dx$
8. $\int \cos^5 x dx$
9. $\int \frac{\sqrt{x}}{\sqrt[3]{x}-1} dx$
10. $\int x^2 \sqrt{(9-x^2)^3} dx$

Вариант №19.

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

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

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

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

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

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

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

8. $\int \sin x \cos 2x dx$

9. $\int \frac{1}{4+2\sin x+3\cos x}dx$

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

Вариант №20.

1. $\int \frac{x}{9+x^4}dx$
2. $\int (x^2+2x)\cos 4x dx$
3. $\int e^x \sin 7x dx$
4. $\int \frac{4x-3}{x^2+8x+12}dx$
5. $\int \frac{2e^{2x}}{\sqrt{7-6e^x-e^{2x}}}dx$
6. $\int \frac{x^2+6x+3}{(x-2)^2(x-1)}dx$
7. $\int \frac{6x+1}{(x^2+4)(x+1)}dx$
8. $\int \sin 4x \sin 3x dx$
9. $\int \frac{1}{5+2\sin x+3\cos x}dx$
10. $\int \frac{1}{\sqrt{(x^2-25)^3}}dx$

Вариант №21.

1. $\int \frac{x}{\sqrt{16-x^4}}dx$

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

3. $\int e^{2x}\cos 4x dx$

4. $\int \frac{6x+5}{x^2-8x+12}dx$

5. $\int \frac{2e^x}{\sqrt{7-6e^x-e^{2x}}}dx$

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

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

8. $\int \cos 6x \cos x dx$

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

10. $\int \frac{1}{\sqrt{(x^2+25)^3}}dx$

Вариант №22.

1. $\int \frac{\ln^3 x}{x} dx$
2. $\int x^2 \cos 4x dx$
3. $\int e^{2x} \sin 6x dx$
4. $\int \frac{2x-3}{\sqrt{10x-x^2}} dx$
5. $\int \frac{2e^{2x}}{e^{2x}+4e^x+13} dx$
6. $\int \frac{x^2+x+4}{(x+1)^2(x-3)} dx$
7. $\int \frac{8x+2}{(x^2+2x+10)(x-2)} dx$
8. $\int \sin^3 x \cos^3 x dx$
9. $\int \frac{\sqrt[3]{x}}{\sqrt[3]{x}-\sqrt{x}} dx$
10. $\int \sqrt{(64-x^2)^3}\, dx$

Вариант №23.

1. $\int \frac{\sin\sqrt{x}}{\sqrt{x}}dx$

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

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

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

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

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

7. $\int \frac{6}{(x^3+27)}dx$

8. $\int \sin^5 x dx$

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

10. $\int \frac{1}{5+2\sin x+4\cos x}dx$

Вариант №24.

1. $\int \frac{e^{ctgx}x}{\sin^2 x}dx$
2. $\int (3x^2+2x)\ln x dx$
3. $\int e^{2x}\cos 4x dx$
4. $\int \frac{6x-5}{\sqrt{x^2+4x+5}}dx$
5. $\int \frac{2e^{2x}}{e^{2x}-6e^x+5}dx$
6. $\int \frac{x^2+6x-9}{x(x+1)(x+3)}dx$
7. $\int \frac{6}{(x^3-27)}dx$
8. $\int \cos^3 x dx$
9. $\int \frac{6x+1}{(x^2+4)(x+1)}dx$
10. $\int \sqrt{(36-x^2)^3}dx$

Вариант №25.

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

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

3. $\int e^{-2x} \sin 6x dx$

4. $\int \frac{2x-3}{x^2+8x+20} dx$

5. $\int \sqrt{4e^x - e^{2x}}\, e^x dx$

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

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

8. $\int \sin 6x \cos x dx$

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

10. $\int \frac{1}{\sqrt{(36-x^2)^3}} dx$

Вариант №26.

1. $\int x\cos x^2 dx$
2. $\int (x^2+8x)\cos 4x dx$
3. $\int e^{-x}\sin 3x dx$
4. $\int \frac{4x-3}{x^2+8x+7} dx$
5. $\int \sqrt{5-4e^x-e^{2x}}\, e^x dx$
6. $\int \frac{x^2+6x+2}{(x-2)^2(x+1)} dx$
7. $\int \frac{x^2+6x+3}{(x^2+4)(x-1)} dx$
8. $\int \sin 4x \sin x dx$
9. $\int \frac{\cos x}{1-2\sin x+\cos x} dx$
10. $\int \frac{1}{\sqrt{(x^2-36)^3}} dx$

Вариант №27.

1. $\int x^2 \sin x^3 dx$

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

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

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

5. $\int \sqrt{12-4e^x-e^{2x}}\, e^x dx$

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

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

8. $\int \cos 3x \cos x dx$

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

10. $\int \frac{1}{\sqrt{(36+x^2)^3}} dx$

Вариант №28.

1. $\int \frac{\sqrt{\ln x}}{x} dx$
2. $\int x^2 e^{-4x} dx$
3. $\int e^{2x} \sin 5x dx$
4. $\int \frac{4x-3}{\sqrt{8x-x^2}} dx$
5. $\int \frac{2e^{2x}}{e^{2x}+6e^{x}+13} dx$
6. $\int \frac{6x^2-2}{(x-1)^2(x-3)} dx$
7. $\int \frac{4x^2+8}{(x^2+2x+10)(x-2)} dx$
8. $\int \sin^2 x \cos^3 x dx$
9. $\int \frac{\sqrt[3]{x+1}}{\sqrt[3]{x+1}-\sqrt{x+1}} dx$
10. $\int x^2 \sqrt{(4-x^2)^3} dx$

Вариант №29.

1. $\int \sqrt{\sin x}\cos x dx$

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

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

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

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

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

7. $\int \frac{12}{(x^3+64)} dx$

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

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

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

Вариант №30.

1. $\int \sqrt{\cos x}\sin x dx$

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

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

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

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

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

7. $\int \frac{12}{(x^3-64)} dx$

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

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

10. $\int x^2\sqrt{(9-x^2)^3}\, dx$