

Integrujte pomocí vzorců:

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

Výsledky:

1.  $2x + \frac{x^4}{4} - \frac{\sqrt{(2x+1)^3}}{3} - \frac{1}{9x-6} - \frac{3\sqrt[3]{x^2}}{\sqrt[3]{4}} - \frac{(1-x)^3}{3} + C$
2.  $3x - \frac{2x^5}{5} - 2\sqrt[3]{(2-x)^2} + \frac{3}{4(1-2x)^2} + 2\sqrt{x-3} - \frac{(4x+5)^4}{16} + C$
3.  $\frac{1}{2} \ln|x| + \frac{1}{3} \ln|3x+2| + 2 \ln|1-x| + \ln|x^3+5| - \frac{1}{4} \ln|2x^2-1| - \ln|\cos x| + C$
4.  $3 \ln|x| - \frac{1}{2} \ln|2x+5| - \frac{1}{3} \ln|2-3x| + \frac{1}{3} \ln|x^3-2| - \frac{1}{2} \ln|1-x^2| + \ln|\sin x| + C$
5.  $-\frac{1}{3} \cos 3x + \cos(1-x) - \frac{1}{2} \sin 2x + \frac{1}{3} \sin(3x+1) + \frac{1}{4} \operatorname{tg} 4x - \frac{3}{2} \operatorname{cotg}(2x-1) + C$
6.  $\cos(2x+1) + \frac{1}{2} \cos(3-2x) - \sin(1-x) + \frac{1}{3} \sin 3x + \operatorname{tg}(2x-1) + \operatorname{cotg}(3-x) + C$
7.  $\frac{1}{2} e^{2x+1} - e^{-x} - 2e^{\frac{x}{2}} + \frac{2^x}{\ln 2} - \frac{2^{3x+5}}{3 \ln 2} - \frac{3^{1-2x}}{2 \ln 3} + C$
8.  $-\frac{1}{3} e^{1-3x} - \frac{1}{5} e^{5x} + \frac{3}{2} e^{\frac{2x}{3}} - \frac{4^{x+1}}{\ln 4} + \frac{3^{4x-2}}{4 \ln 3} - \frac{2^{2-x}}{\ln 2} + C$
9.  $\frac{1}{3} \operatorname{arctg} \frac{x}{3} + \frac{3}{2} \operatorname{arctg} 2x - \arcsin \frac{x}{2} + 2 \ln|x + \sqrt{x^2+9}| + C$
10.  $\operatorname{arctg} \frac{x}{2} - 3 \operatorname{arctg} x + 3 \arcsin \frac{x}{3} + \ln|x + \sqrt{x^2+5}| - \frac{1}{6} \operatorname{arctg} \frac{3x}{2} + C$