Potence, koreni

$$\int x^n\,dx = \frac{x^{n+1}}{n+1} + C \qquad \text{pri } n \neq -1$$
$$\int x^{-1}\,dx = \int \frac{dx}{x} = \ln|x| + C$$
$$\int \sqrt{x}\,dx = \frac{2}{3}x\sqrt{x} + C$$
$$\int \frac{1}{\sqrt{x}}\,dx = 2\sqrt{x} + C$$
$$\int \frac{1}{\sqrt{1-x^2}}\,dx = \arcsin x + C$$
$$\int \frac{x}{\sqrt{x^2-1}}\,dx = \operatorname{arcsec} x + C$$

Polinomi, racionalne funkciie

$$\int (ax+b)\,dx = \frac{ax^2}{2} + bx + C$$
$$\int (ax^2+bx+c)\,dx = \frac{a}{3}x^3 + \frac{b}{2}x^2 + cx + C$$
$$\int (ax+b)^n\,dx = \frac{(ax+b)^{n+1}}{a(n+1)} + C$$
$$\int \frac{dx}{ax+b} = \frac{1}{a}\ln|ax+b| + C$$
$$\int \frac{1}{x^2+1}\,dx = \arctan x + C$$
$$\int \frac{dx}{x^2+a^2} = \frac{1}{a}\arctan\frac{x}{a} + C$$
$$\int \frac{f'(x)}{f(x)}\,dx = \ln|f(x)| + C$$

Eksponentne, logaritemske funkcije

$$\int e^x\,dx = e^x + C$$
$$\int a^x\,dx = \frac{a^x}{\ln a} + C$$
$$\int xe^x\,dx = e^x(x-1) + C$$
$$\int \frac{dx}{e^x} = -\frac{1}{e^x} + C$$
$$\int \frac{x}{e^x}\,dx = -\frac{x+1}{e^x} + C$$
$$\int \frac{e^x}{x}\,dx = -\mathrm{Ei}(-x) + C$$ Opomba: Ei = eksponen
$$\int \ln x\,dx = x\ln x - x + C$$
$$\int \log_a x\,dx = x\log_a x - \frac{x}{\ln a} + C$$

Trigonometrične funkcije

$$\int \cos x\,dx = \sin x + C$$
$$\int \cos(nx)\,dx = \frac{sin(nx)}{n} + C$$
$$\int \sin x\,dx = -\cos x + C$$
$$\int \sin(nx)\,dx = -\frac{cos(nx)}{n} + C$$
$$\int \tan x\,dx = -\ln|\cos x| + C$$
$$\int \csc x\,dx = -\ln|\csc x + \cot x| + C$$
$$\int \sec x\,dx = \ln|\sec x + \tan x| + C$$
$$\int \cot x\,dx = \ln|\sin x| + C$$
$$\int \frac{dx}{\cos^2 x} = \int \sec^2 x\,dx = \tan x + C$$
$$\int \frac{dx}{\sin^2 x} = \int \csc^2 x\,dx = -\cot x + C$$
$$\int \sin^2 x\,dx = \frac{2x - \sin 2x}{4} + C = \frac{x}{2} - \frac{sin2x}{4} + C$$
$$\int \cos^2 x\,dx = \frac{2x + \sin 2x}{4} + C = \frac{x}{2} + \frac{sin2x}{4} + C$$

$$\int_0^\infty \frac{1}{x^2+a^2}\,dx = \frac{\pi}{2a}$$
$$\int_0^\infty \frac{1}{(1+x)x^a}\,dx = \frac{\pi}{\sin(a\pi)}, \quad (a<1)$$
$$\int_0^\infty \frac{x^{a-1}}{1+x}\,dx = \frac{\pi}{\sin(a\pi)}, \quad (0<a<1)$$
$$\int_0^\infty \frac{1}{(1-x)x^a}\,dx = -\pi\operatorname{ctg}, \quad (a<1)$$
$$\int_{-\infty}^\infty \frac{1}{(1+x^2/a)^{(a+1)/2}}\,dx = \frac{\sqrt{a\pi}\,\Gamma(a/2)}{\Gamma\left[(a+1)/2\right]}, \quad (a>0)$$ (povezava z gostoto verjetnosti Studentove t-por
$$\int_0^\infty \frac{x^{a-1}}{1+x^b}\,dx = \frac{\pi}{b\sin(a\pi/b)}, \quad (0<a<b)$$
$$\int_0^\infty \frac{x^a}{x^b+c^b}\,dx = \frac{\pi c^{a+1-b}}{b\sin\left[(a+1)\pi/b\right]}, \quad (0<a+1<b)$$
$$\int_0^\infty \frac{x^a}{(x^b+c^b)^d}\,dx = \frac{(-1)^{d-1}\pi c^{a+1-bd}}{b\sin\left[(a+1)\pi/b\right](d-1)!\,\Gamma\left[(a+1)/(b-d+1)\right]}, \quad (0<a+1<bd)$$
$$\int_0^\infty \frac{1}{1+2x\cos(a)+x^2}\,dx = \frac{a}{\sin a}$$
$$\int_0^\infty \frac{x^b}{1+2x\cos(a)+x^2}\,dx = \frac{\pi}{\sin(b\pi)}\frac{\sin(ab)}{\sin a}, \quad \left(0<a<\frac{\pi}{2}\right)$$

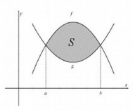
If $u = f(x)$, $v = g(x)$, and the differentials $du = f'(x)\,dx$ and $dv = g'(x)\,dx$, then the product rule in its simplest form is:

$$\int u\frac{dv}{dx}\,dx = uv - \int v\frac{du}{dx}\,dx$$

Prostornina:

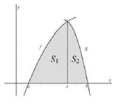
$$V = \pi\int_a^b f^2(x)\,dx$$

Ploščina lika med dvema krivuljama



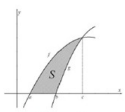
$$S = \int_a^b (f(x) - g(x))dx$$

Ploščina lika kot vsota dveh ploščin likov



$$S = S_1 + S_2 = \int_a^c f(x)dx + \int_c^b g(x)dx$$

ščina lika med dvema krivuljama in x osjo



$$S = \int_a^c f(x)dx - \int_a^c g(x)dx$$