Goniometrické vzorce

- $\sin(\alpha+\beta) = \sin\alpha\cos\beta + \cos\alpha\sin\beta$,
- $\cos(\alpha+\beta) = \cos\alpha\cos\beta - \sin\alpha\sin\beta$,
- $\sin 2\alpha = 2\sin\alpha\cos\alpha, \quad \cos 2\alpha = \cos^2\alpha - \sin^2\alpha, \quad \cos^2\alpha + \sin^2\alpha = 1$,
- $\cos^2\alpha = \dfrac{1+\cos 2\alpha}{2}, \quad \sin^2\alpha = \dfrac{1-\cos 2\alpha}{2}$,
- $\cos\alpha\cos\beta = \frac{1}{2}\left(\cos(\alpha+\beta) + \cos(\alpha-\beta)\right)$,
- $\sin\alpha\sin\beta = \frac{1}{2}\left(\cos(\alpha-\beta) - \cos(\alpha+\beta)\right)$,
- $\sin\alpha\cos\beta = \frac{1}{2}\left(\sin(\alpha-\beta) + \sin(\alpha+\beta)\right)$.
- $\sin 0 = \cos\dfrac{\pi}{2} = \dfrac{\sqrt{0}}{2}, \quad \sin\dfrac{\pi}{6} = \cos\dfrac{\pi}{3} = \dfrac{\sqrt{1}}{2}, \quad \sin\dfrac{\pi}{4} = \cos\dfrac{\pi}{4} = \dfrac{\sqrt{2}}{2}$,
- $\sin\dfrac{\pi}{3} = \cos\dfrac{\pi}{6} = \dfrac{\sqrt{3}}{2}, \quad \sin\dfrac{\pi}{2} = \cos 0 = \dfrac{\sqrt{4}}{2}$,
- $\cos n\pi = (-1)^n,\ \sin(2k-1)\dfrac{\pi}{2} = (-1)^{k+1},\ \cos(2k-1)\dfrac{\pi}{2} = 0$,

Integrály

- $\int e^{\alpha x}\cos\beta x\, dx = \dfrac{e^{\alpha x}}{\alpha^2+\beta^2}\left(\alpha\cos\beta x + \beta\sin\beta x\right)$,
- $\int e^{\alpha x}\sin\beta x\, dx = \dfrac{e^{\alpha x}}{\alpha^2+\beta^2}\left(\alpha\sin\beta x - \beta\cos\beta x\right)$,

Substitúcie

- $\mathrm{tg}\frac{x}{2} = t,\ x = 2\mathrm{arctg}\, t,\ dx = \frac{2\,dx}{1+t^2},\ \sin x = \frac{2t}{t^2+1},\ \cos x = \frac{1-t^2}{t^2+1}$,
- $\mathrm{tg}\, x = t,\ x = \mathrm{arctg}\, t,\ dx = \frac{dx}{1+t^2},\ \sin^2 x = \frac{t^2}{t^2+1},\ \cos^2 x = \frac{1}{t^2+1},\ \sin 2x = \frac{2t}{t^2+1}$,
- $\sqrt[k]{\dfrac{ax+b}{cx+d}} = t,\ \dfrac{ax+b}{cx+d} = t^k,\ x = ?,\ dx = ?$,
- $a > 0,\ \sqrt{ax^2+bx+c} = \sqrt{a}x \pm t,\ ax^2+bx+c = ax^2 \pm 2\sqrt{a}xt + t^2,\ x = ?,\ dx = ?\ \sqrt{ax^2+bx+c} = ?$
- $c > 0,\ \sqrt{ax^2+bx+c} = \sqrt{c} \pm xt,\ ax^2+bx+c = c \pm 2\sqrt{c}xt + x^2t^2,\ x = ?,\ dx = ?\ \sqrt{ax^2+bx+c} = ?$
- $x = \varrho\cos\varphi,\ y = \varrho\sin\phi,\ J_g(\varrho,\varphi) = \varrho$,
- $x = \varrho\cos\varphi,\ y = \varrho\sin\varphi,\ z = u, \quad J_g(\varrho,\varphi,u) = \varrho$,
- $x = \varrho\cos\varphi\cos\vartheta,\ y = \varrho\sin\varphi\cos\vartheta,\ z = \varrho\sin\vartheta, \quad J_g(\varrho,\varphi,\vartheta) = \varrho^2\cos\vartheta$.