Integriranje

$$\int dx = x + C$$

$$\int x^r dx = \frac{x^{r+1}}{r+1} + C$$

$$\int \frac{dx}{x} = \ln|x| + C$$

$$\int e^x dx = e^x + C$$

$$\int a^x dx = \frac{a^x}{\ln a} + C$$

$$\int \cos x dx = \sin x + C$$

$$\int \sin x dx = -\cos x + C$$

$$\int \frac{1}{\cos^2 x} = \operatorname{tg} x + C$$

$$\int \frac{1}{\sin^2 x} = -\operatorname{ctg} x + C$$

$$\int \frac{1}{\sqrt{a^2-x^2}} = \arcsin\frac{x}{a} + C \qquad a > 0,\ |x| < a$$

$$\int \frac{1}{a^2-x^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C \qquad a > 0$$

$\lesssim \frac{1}{n^p}$ p>1 konvergira

p≤1 divergira

Ako u desnom konvergira, onda i u lijevom!

$\lesssim \rightarrow \frac{a_n}{a_{n+1}} \rightarrow \lim \frac{a_n}{a_{n+1}}$ =rezultatx

| rezultatx | < 1 → ubaciti u $\lesssim$

hom. dif. jedn. desnu str. izjedn. s nulom

$$y_o = c_1 e^{\lambda_1 x} + c_2 e^{\lambda_2 x}$$

$$\lambda_{1,2} = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$$

Osnovne derivacije

c	0
x	1
x^2	$2x$
x^n	nx^{n-1} $n\neq 0$
e^x	e^x
a^x	$a^x \ln a$
$\ln x$	$\frac{1}{x}$
$\sqrt{x}$	$\frac{1}{2\sqrt{x}}$
$\log_a x$	$\frac{\log_a e}{x} = \frac{1}{x \ln a}$
$\sin x$	$\cos x$
$\cos x$	$-\sin x$
$\operatorname{tg} x$	$\frac{1}{\cos^2 x}$
$\operatorname{ctg} x$	$\frac{-1}{\sin^2 x}$
$\arcsin x$	$\frac{1}{\sqrt{1-x^2}}$
$\arccos x$	$\frac{-1}{\sqrt{1-x^2}}$
$\operatorname{arctg} x$	$\frac{1}{\sqrt{1+x^2}}$
$\operatorname{arcctg} x$	$\frac{-1}{\sqrt{1+x^2}}$

Svojstva deriviranja - pravila

$(f \pm g)' = f' \pm g'$

$(f \cdot g)' = f' \cdot g + f \cdot g'$

$(c \cdot f)' = c \cdot f'$

$\left(\frac{f}{g}\right)' \quad \frac{f' \cdot g - f \cdot g'}{g^2}$

$[f(g(x))]' = f'(g(x)) \cdot g'(x)$

$f^{-1}(x) = \frac{1}{f'(f^{-1}(x))}$