

Matematika

| | | |
|---------------|--------------------------|----------------------|
| \doteq | <code>\doteq</code> | Přibližně |
| \neq | <code>\neq</code> | Nerovná se |
| \geq | <code>\ge</code> | Větší nebo rovno |
| \leq | <code>\le</code> | Menší nebo rovno |
| \sum | <code>\sum</code> | Suma |
| \rightarrow | <code>\to</code> | Do |
| \pm | <code>\pm</code> | Plus mínus |
| $\sqrt{2}$ | <code>\sqrt{2}</code> | Odmocnina |
| $\sqrt[3]{2}$ | <code>\sqrt[3]{2}</code> | N-tá odmocnina |
| \lim | <code>\lim_{}{}</code> | Limita x jdoucí k n. |

Množiny

| | | |
|-------------|------------------------|---------------------|
| \cap | <code>\cap</code> | Průnik (a současně) |
| \cup | <code>\cup</code> | Sjednoceno (nebo) |
| \in | <code>\in</code> | Náleží |
| \emptyset | <code>\emptyset</code> | Prázdná množina |

Logika

| | | |
|-------------------|------------------------------|---------------------------------|
| \wedge | <code>\wedge</code> | Konjunkce (AND) |
| \vee | <code>\vee</code> | Disjunkce (OR) |
| \Rightarrow | <code>\Rightarrow</code> | Implikace (jestliže, pak) |
| \Leftrightarrow | <code>\Leftrightarrow</code> | Ekvivalence (právě tehdy, když) |
| \neg | <code>\neg</code> | Negace |
| \forall | <code>\forall</code> | Pro každé |
| \exists | <code>\exists</code> | Existuje |

Zkratky

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\newcommand{\mbf}[1]{\mathbf{#1}}
\newcommand{\dlim}{\displaystyle\lim}
\newcommand{\hr}{\hrule}
\newcommand{\hl}{\hline}

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Odkazy

- Matematický korespondenční seminář MUNI
- Wikipedia - Matematický symbol
- Art of problem solving
- ČVUT Stručný popis
- VŠB Matematické prostředí
- CSTug symbols
- mff.lokiware
- Detexify²

| A | B | $A \wedge B$ | $A \vee B$ | $A \Rightarrow B$ | $A \Leftrightarrow B$ |
|---|---|--------------|------------|-------------------|-----------------------|
| 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 | 0 | 0 |
| 0 | 1 | 0 | 1 | 1 | 0 |
| 0 | 0 | 0 | 0 | 1 | 1 |

Diferenciální počet

- $(konst.)' = 0$
- $(x^a)' = a \cdot x^{a-1}$
- $(a^x)' = a^x \cdot \ln(a)$
- $\log_a(x)' = \frac{1}{x \cdot \ln(a)}$
- $(e^x)' = e^x$
- $(\ln x)' = \frac{1}{x}$
- $(u \pm v)' = u' \pm v'$
- $[f(g(x))]' = f'(g(x)) \cdot g'(x)$
- $\sin(x)' = \cos(x)$
- $\cos(x)' = -\sin(x)$
- $\tan(x)' = \frac{1}{\cos^2 x}$
- $\cot(x)' = \frac{1}{\sin^2 x}$
- $(x)' = 1$
- $(\frac{1}{x})' = -\frac{1}{x^2}$
- $(u \cdot v)' = u' \cdot v + v \cdot u'$
- $f(x)^{g(x)} = e^{g(x) \cdot \ln f(x)}$
- $\arcsin(x)' = \frac{1}{\sqrt{1-x^2}}$
- $\arccos(x)' = -\frac{1}{\sqrt{1-x^2}}$
- $\arctan(x)' = \frac{1}{1+x^2}$
- $\operatorname{arccot}(x)' = -\frac{1}{1+x^2}$
- $(\sqrt{x})' = \frac{1}{2 \cdot \sqrt{x}}$
- $(\log x)' = \frac{1}{x \cdot \ln 10}$
- $(\frac{u}{v})' = \frac{u' \cdot v - u \cdot v'}{v^2}$
- $(k \cdot f(x))' = k \cdot f'(x)$

Goniometrické funkce

| | 0 | $\frac{\pi}{6}$ | $\frac{\pi}{4}$ | $\frac{\pi}{3}$ | $\frac{\pi}{2}$ | • $\sin(x \pm 2k\pi) = \sin x$ | • $\sin(-x) = -\sin x$ | • $\tan x = \frac{\sin x}{\cos x}$ |
|----------|---|----------------------|----------------------|----------------------|-----------------|--------------------------------|------------------------|------------------------------------|
| $\sin x$ | 0 | $\frac{1}{2}$ | $\frac{\sqrt{2}}{2}$ | $\frac{\sqrt{3}}{2}$ | 1 | • $\cos(x \pm 2k\pi) = \cos x$ | • $\cos(-x) = \cos x$ | • $\cot x = \frac{\cos x}{\sin x}$ |
| $\cos x$ | 1 | $\frac{\sqrt{3}}{2}$ | $\frac{\sqrt{2}}{2}$ | $\frac{1}{2}$ | 0 | • $\tan(x \pm k\pi) = \tan x$ | • $\tan(-x) = -\tan x$ | • $\tan x \cdot \cot x = 1$ |
| $\tan x$ | 0 | $\frac{\sqrt{3}}{3}$ | 1 | $\sqrt{3}$ | * | • $\cot(x \pm k\pi) = \cot x$ | • $\cot(-x) = -\cot x$ | • $\sin^2 x \cdot \cos^2 x = 1$ |
| $\cot x$ | * | $\sqrt{3}$ | 1 | $\frac{\sqrt{3}}{3}$ | 0 | | | |

Závorky

- $(a + b)^2 = a^2 + 2ab + b^2$
- $(a - b)^2 = a^2 - 2ab + b^2$
- $a^2 + b^2 = (a + b)(a + b)$
- $a^2 - b^2 = (a + b)(a - b)$
- $(a + b)^3 = a^3b^0 + 3a^2b^1 + 3a^1b^2 + a^0b^3$
- $(a - b)^3 = a^3b^0 - 3a^2b^1 + 3a^1b^2 - a^0b^3$
- $a^3 + b^3 = (a + b)(a^2 - ab + b^2)$
- $a^3 - b^3 = (a - b)(a^2 + ab + b^2)$

Mocniny

- $a^{-n} = \frac{1}{a^n}$
- $a^{\frac{m}{n}} = \sqrt[n]{a^m}$
- $(a * b)^n = a^n * b^n$
- $a^m * a^n = a^{m+n}$
- $\frac{a^m}{a^n} = a^{m-n}$
- $(a^m)^n = a^{m*n}$
- $\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}$

Odmocniny

- $\sqrt[n]{a} * \sqrt[n]{b} = \sqrt[n]{a * b}$
- $\frac{\sqrt[n]{a}}{\sqrt[n]{b}} = \sqrt[n]{\frac{a}{b}}$
- $\sqrt[n]{a^m} = \sqrt[n]{a^m}$
- $\sqrt[n]{\sqrt[m]{a}} = \sqrt[n*m]{a}$

Logaritmy

- $y = \log_a x \Leftrightarrow a^y = x$
- $\log_a \{x_1 * x_2\} = \log_a x_1 + \log_a x_2$
- $\log_a \left(\frac{x_1}{x_2}\right) = \log_a x_1 - \log_a x_2$
- $\log_a x^n = n * \log_a x$