Allgemein

Seitenumbruch	`\clearpage`
$\alpha, \beta, \gamma, \delta, \varepsilon$	`\alpha, \beta, \gamma, \delta, \varepsilon`
φ, χ, ψ	`\varphi, \chi, \psi`
Σ, Γ	`\Sigma, \Gamma`
✓	`\checkmark`
$x_1, \ldots, x_n$	`x_1, \dots, x_n`
$\leadsto$	`\leadsto`
$\Leftarrow$	`\Leftarrow`
$\Rightarrow$	`\Rightarrow`
$\Longleftrightarrow$	`\Longleftrightarrow`
$x \stackrel{(*)}{=} y$	`x \stackrel{(*)}{=} y`
kursiv	`\textit{kursiv}`
`code`	`\texttt{code}`
Symbol	`\textup{Symbol}`

Kapitel A

$\sum_{i \in \mathbb{N}} i \geq 3$	`\sum_{i \in \mathbb{N}} i \ge 3`
$A = \{x \cdot x \mid x \in \mathbb{Z}, x \leq 3\}$	`A = \{x \cdot x \mid x \in \mathbb{Z}, x \le 3\}`
$x \in A$	`x \in A`
$x \notin \emptyset$	`x \notin \emptyset`
$A \cup B$	`A \cup B`
$A \cap B$	`A \cap B`
$A \setminus B$	`A \setminus B`
$A \subset B$	`A \subset B`
$A \subseteq B$	`A \subseteq B`
$A \supset B$	`A \supset B`
$A \supseteq B$	`A \supseteq B`
$A \times B$	`A \times B`
$\bigcup_{i=1}^{n} A_n$	`\bigcup_{i = 1}^n A_n`
$3 \neq \max(\{1,2,3,4\})$	`3 \neq \max(\{1,2,3,4\})`
$f : \{x, y\} \to_{\mathrm{p}} \mathbb{N}$	`f : \{x, y\} \to_\textup{p} \mathbb{N}`
$f = \{x \mapsto \sqrt{4}\}$	`f = \{x \mapsto \sqrt{4}\}`
$\langle L, \bigcirc, R\rangle = \langle \square, \bigcirc, \square\rangle$	`\langle L, \bigcirc, R\rangle = \langle \square, \bigcirc, \square\rangle`

Kapitel B

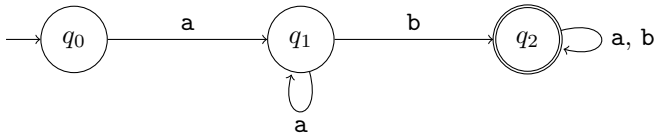
$x \circ e$	`x \circ e`
$(\mathrm{A} \land \mathrm{B})$	`(\textup{A} \land \textup{B})`
$(\mathrm{A} \lor \mathrm{B})$	`(\textup{A} \lor \textup{B})`
$\neg \mathrm{A}$	`\lnot \textup{A}`
$(\mathrm{A} \to \mathrm{B})$	`(\textup{A} \rightarrow \textup{B})`
$(\mathrm{A} \leftrightarrow \mathrm{B})$	`(\textup{A} \leftrightarrow \textup{B})`
$\bigvee_{i=1}^{n} \mathrm{X}_i$	`\bigvee_{i = 1}^n \textup{X}_i`
$\bigwedge_{i=1}^{n} \mathrm{X}_i$	`\bigwedge_{i = 1}^n \textup{X}_i`
$\chi \equiv \psi$	`\chi \equiv \psi`
$\mathcal{I} \models \varphi$	`\mathcal I \models \varphi`
$\mathcal{I} \not\models \Phi$	`\mathcal I \not\models \Phi`
$\mathcal{I}, \alpha \models \varphi$	`\mathcal I, \alpha \models \varphi`
$\Phi \models \Psi$	`\Phi \models \Psi`
$\exists x \forall y \, \phi$	`\exists x \forall y\, \phi`
$ar(\mathrm{P}) = 2$	`\textit{ar}(\textup{P}) = 2`

$$
\begin{aligned}
\varphi &= ((\mathrm{A} \land \mathrm{B}) \lor \mathrm{C}) \\
&\equiv (\mathrm{C} \lor (\mathrm{A} \land \mathrm{B})) && \text{(Kommutativität)} \\
&\equiv ((\mathrm{C} \lor \mathrm{A}) \land (\mathrm{C} \lor \mathrm{B})) && \text{(Distributivität)}
\end{aligned}
$$

```
\begin{alignat*}{3}
    \varphi
    &= ((\textup{A} \land \textup{B}) \lor \textup{C}) &&\\
    &\equiv (\textup{C} \lor (\textup{A} \land \textup{B}))
    &\quad
    &\text{(Kommutativität)}\\
    &\equiv ((\textup{C} \lor \textup{A}) \land (\textup{C} \lor \textup{B}))
    &\quad
    &\text{(Distributivität)}
\end{alignat*}
```

Kapitel C

$\Sigma = \{\mathtt{a}, \mathtt{b}, \mathtt{c}\}$	`\Sigma = \{\texttt{a}, \texttt{b}, \texttt{c}\}`
Σ^*	`\Sigma^*`
$\mathcal{L}(\gamma) = \{\mathtt{a}^{2n} \mid n > 0\}$	`\mathcal L(\gamma) = \{\texttt{a}^{2n} \mid n > 0\}`
$\mathtt{01}\varepsilon\|(\mathtt{10})^*\|\emptyset$	`\texttt{01}\varepsilon|(\texttt{10})^*|\emptyset`
$\delta : Q \times \Sigma \to \mathcal{P}(Q)$	`\delta: Q \times \Sigma \to \mathcal{P}(Q)`
$\delta : Q \setminus \{q_\mathrm{e}\} \times \Gamma \to Q \times \Gamma \times \{\mathrm{L}, \mathrm{R}, \mathrm{N}\}$	`\delta: Q\setminus\{q_\textup{e}\}\times\Gamma\to Q\times\Gamma\times\{\textup{L},\textup{R},\textup{N}\}`
$\|\varepsilon\| = 0$	`|\varepsilon| = 0`
$\mathrm{P}_\emptyset, \mathrm{P}_\in$	`\mathrm{P}_\emptyset, \mathrm{P}_\in`
$M = \langle Q, \Sigma, \Gamma, \delta, q_0, \#\rangle$	`M=\langle Q,\Sigma,\Gamma,\delta,q_0,\texttt{\#}\rangle`
$\mathtt{a}, \# \to \mathtt{AB\#}$	`\texttt{a}, \texttt{\#} \to \texttt{AB}\texttt{\#}`
$c \vdash c', c \vdash_M c', c \vdash_M^* c'$	`c\vdash c', c\vdash_M c', c\vdash_M^* c'`
$\langle q, A, q'\rangle \Rightarrow_G^* x$	`\langle q,A,q'\rangle \Rightarrow^*_G x`
$\Box \in \Gamma \setminus \Sigma$	`\Box \in \Gamma \setminus \Sigma`
$\Sigma \cup \{\hat{a} \mid a \in \Sigma\}$	`\Sigma \cup \{\hat a \mid a \in \Sigma\}`



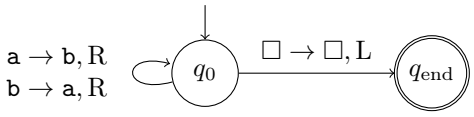

```
\usepackage{tikz}
\usetikzlibrary{automata,arrows}

\begin{tikzpicture}[->,auto,node distance=3cm]
    \node[initial left, initial text=, state] (q0) {$q_0$};
    \node[state]  (q1) [right of=q0] {$q_1$};
    \node[state, accepting]  (q2) [right of=q1] {$q_2$};

    \path (q0) edge node {\texttt{a}} (q1)
          (q1) edge[loop below] node {\texttt{a}} (q1)
          (q1) edge node {\texttt{b}} (q2)
          (q2) edge[loop right] node {\texttt{a}, \texttt{b}} (q2);
\end{tikzpicture}
```

Kapitel D

$f^{\text{code}} : \Sigma^* \to \Sigma^*$	`f^{\textup{code}}: \Sigma^* \to \Sigma^*`
$bin(n_1)\#\ldots\#bin(n_k)$	`\textit{bin}(n_1)\texttt{\#}\dots\texttt{\#}\textit{bin}(n_k)`
$null$, $succ$, $pred_1$, $pred_2$	`\textit{null}, \textit{succ}, \textit{pred}_1, \textit{pred}_2`
$pred_1(n) := \begin{cases} n-1 & \text{if } n \geq 1 \\ 0 & \text{if } n = 0 \end{cases}$	`\textit{pred}_1(n) := \begin{cases} n - 1 & \text{if~} n \ge 1 \\ 0 & \text{if~} n = 0 \end{cases}`
$\left\lceil \frac{n_1}{n_2} \right\rceil$	`\left\lceil \frac{n_1}{n_2} \right\rceil`
LOOP x_2 DO $x_0 := x_0 + 1$ END	`\textup{LOOP $x_2$ DO $x_0 := x_0 + 1$ END}`
μ-recursive	`\text{$\mu$-recursive}`
$\pi^i_j : \mathbb{N}_0^i \to \mathbb{N}_0$	`\pi^i_j: \mathbb N_0^i \to \mathbb N_0`
$binom_2(x) = \binom{x}{2}$	`\textit{binom}_2(x) = \binom{x}{2}`
$pred(x) = x \ominus 1$	`\textit{pred}(x) = x \ominus 1`
$(\mu f)(x) = \min\{n \in \mathbb{N}_0 \mid f(n,x) = 0\}$	`(\mu f)(x) = \min\{n \in \mathbb N_0 \mid f(n, x) = 0\}`
χ_A, χ'_A	`\chi_A, \chi'_A`
$x \bmod 3 = 2$	`x\textrm{\,mod\,}3 = 2`
$(\chi_B \circ f)(x)$	`(\chi_B \circ f)(x)`
$H \leq H_0$	`H \le H_0`
$\mathcal{S} \neq \mathcal{R}$	`\mathcal S \neq \mathcal R`
$\overline{C(\mathcal{S})}$	`\overline{C(\mathcal S)}`
$\Omega \in \mathcal{S}$	`\Omega \in \mathcal S`




```
\usepackage{tikz}
\usetikzlibrary{automata,arrows}

\begin{tikzpicture}[->,auto,node distance=3cm]
  \node[initial above, initial text=, state] (q0) {$q_0$};
  \node[state, accepting]  (qend) [right of=q0] {$q_\text{end}$};
  \path (q0) edge[loop left] node[text width=1.55cm] {
              $\texttt{a}\to\texttt{b},\textup{R}$\\
              $\texttt{b}\to\texttt{a},\textup{R}$} (q0)
        (q0) edge node {$\Box\to\Box,\textup{L}$} (qend);
\end{tikzpicture}
```

Kapitel E

DirHamiltonCycle	`\textsc{DirHamiltonCycle}`
GUESS, **REJECT**, **ACCEPT**	`\textbf{GUESS}, \textbf{REJECT}, \textbf{ACCEPT}`
$O(n \log n)$	`O(n \log n)`
$A \leq_{\mathrm{p}} B$	`A \le_{\textup{p}} B`
$g \circ f$	`g \circ f`