

Allgemein

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

Kapitel A

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

Kapitel B

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

$$\begin{aligned}
 \varphi &= ((A \wedge B) \vee C) \\
 &\equiv (C \vee (A \wedge B)) && \text{(Kommutativitat)} \\
 &\equiv ((C \vee A) \wedge (C \vee B)) && \text{(Distributivitat)}
 \end{aligned}$$

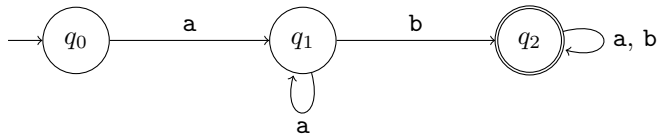
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\begin{alignat*}{3}
&\varphi \\
&\&= ((\textup{A} \land \textup{B}) \lor \textup{C}) \&\& \\
&\&\equiv (\textup{C} \lor (\textup{A} \land \textup{B})) \\
&\&\quad \\
&\&\text{(Kommutativitat)} \\
&\&\equiv (\textup{C} \lor \textup{A}) \land (\textup{C} \lor \textup{B}) \\
&\&\quad \\
&\&\text{(Distributivitat)} \\
\end{alignat*}

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Kapitel C

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



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

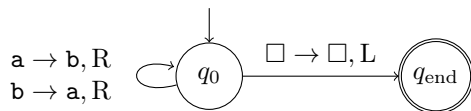
\begin{tikzpicture}[>=,auto,node distance=3cm]
  \node[initial left, initial text=, state] (q0) {\texttt{q}_0$};
  \node[state] (q1) [right of=q0] {\texttt{q}_1$};
  \node[state, accepting] (q2) [right of=q1] {\texttt{q}_2$};

  \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}

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Kapitel D

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



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\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}

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Kapitel E

DirHamiltonCycle	<code>\textsc{DirHamiltonCycle}</code>
$\mathbf{GUESS, REJECT, ACCEPT}$	<code>\textbf{GUESS}, \textbf{REJECT}, \textbf{ACCEPT}</code>
$O(n \log n)$	<code>O(n \log n)</code>
$A \leq_p B$	<code>A \le_{\textup{p}} B</code>
$g \circ f$	<code>g \circ f</code>