

We are proud to introduce the **mathabx** font series— extended and extendable series of mathematical symbols. Their creation has been motivated by the poor quality of some other well spread series. We first started to design anew a few symbols to reach a quite complete system. But completeness is a quite relative notion. It depends on previously available symbols, commonly used or not, on our very own needs, and, at last, on our personal whim. This work must be subject to any (friendly) remark and every (warm) encouragements. *This distribution is still (April 29, 2002) at a “merely for evaluation” level. It is so since a couple of years, but I still want to change a few symbols, especially some large ones.* Please check my home page at Poitiers (France) to get further informations:

<http://wwwmathlabo.univ-poitiers.fr/~phan>

About the quality of **mathabx**'s symbols, we based ourself mostly on **Computer Modern** to overpass it: more complex mathematical constructions and designs, careful digitness. Since this is an unbounded task, improvements are always conceivable, and observations are welcome.

The great problem is the encoding matter. We tried to build a coherent set. But this doesn't follow prescriptions of the two or three groups working on this kind of question. Our contribution is an element of reflection on this subject.

Let's go for the essential stuff. Thereafter will be loaded plain $\TeX$ definitions files related to these fonts families. Assigning any value to the control sequence `\proofmode` like `\let\proofmode=!`, for instance, the definition of every symbol will be made together with the print of the related informations. The control sequence `\proofmode` will be reset to `\undefined` at the end of the loading.

About the names of the different control sequences, we mostly tried to conform usual names. If in the following there is some apparent mismatch with **AMS** denomination, it is normally supported. Below, every already known mathematical symbol (**Computer Modern** or **AMS**) is printed before the new one and surrounded by parentheses.

Part of this documentation is in some poor english, the other in a not so better french. We do apologize for this.

Specials (**matha**/**mathb**)

`\notsign` (rel), `\varnotsign` (rel), `(\cdot) \cdot \cdotp` (punct),

Usual binary operators (**matha**)

`(+)` `+` `+` (bin), `(-)` `-` `-` (bin), `(\times)` `\times` `\times` (bin), `(\div)` `\div` `\div` (bin), `(\cdot)` `\cdot` `\cdot` (bin), `(\circ)` `\circ` `\circ` (bin), `(*)` `*` `*` (bin), `(*)` `*` `\ast` (bin), `*` `\asterisk` (ord), `*` `\coasterisk` (bin), `(\pm)` `\pm` `\pm` (bin), `(\mp)` `\mp` `\mp` (bin), `(\ltimes)` `\ltimes` (bin), `(\rtimes)` `\rtimes` (bin), `(\diamond)` `\diamond` (bin), `(\bullet)` `\bullet` (bin), `(\star)` `\star` (bin), `\varstar` (bin),

Unusual binary operators (mathb)

$(\dot{+}) \dot{+} \backslash\text{dotplus (bin)}, \dot{-} \backslash\text{dotdiv (bin)}, \dot{\times} \backslash\text{dottimes (bin)}, \dot{-} \backslash\text{divdot (bin)}, \cdot \backslash\text{udot (bin)}, (\square) \square \backslash\text{square (bin)}, * \backslash\text{Asterisk (bin)}, * \backslash\text{bigast (op)}, * \backslash\text{coAsterisk (bin)}, * \backslash\text{bigcoast (op)}, \overset{+}{\circ} \backslash\text{circplus (bin)}, \oplus \backslash\text{pluscirc (bin)}, * \backslash\text{convolution (bin)}, (*) * \backslash\text{divideontimes (bin)}, \blacklozenge \backslash\text{blackdiamond (bin)}, \blacksquare \backslash\text{sqbullet (bin)}, (\bigstar) \bigstar \backslash\text{bigstar (bin)}, \bigstar \backslash\text{bigvarstar (bin)},$

Usual relations (matha)

$(=) = \backslash\text{= (rel)}, (\equiv) \equiv \backslash\text{equiv (rel)}, (\sim) \sim \backslash\text{sim (rel)}, (\approx) \approx \backslash\text{approx (rel)}, (\simeq) \simeq \backslash\text{simeq (rel)}, (\cong) \cong \backslash\text{cong (rel)}, (\asymp) \asymp \backslash\text{asympt (rel)}, (\mid) \mid \backslash\text{divides (rel)}, (\neq) \neq \backslash\text{neq (rel)}, (\not\equiv) \not\equiv \backslash\text{notequiv (rel)}, (\nsim) \nsim \backslash\text{nsim (rel)}, (\napprox) \napprox \backslash\text{napprox (rel)}, (\nsimeq) \nsimeq \backslash\text{nsimeq (rel)}, (\ncong) \ncong \backslash\text{ncong (rel)}, (\notasymp) \notasymp \backslash\text{notasympt (rel)}, (\nmid) \nmid \backslash\text{notdivides (rel)},$

Unusual relations (mathb)

$\dot{=} \backslash\text{topdoteq (rel)}, \dot{=} \backslash\text{botdoteq (rel)}, \dot{=} \backslash\text{dotseq (rel)}, (\risingdotseq) \risingdotseq \backslash\text{risingdotseq (rel)}, (\fallingdotseq) \fallingdotseq \backslash\text{fallingdotseq (rel)}, \coloneq \backslash\text{coloneq (rel)}, \eqcolon \backslash\text{eqcolon (rel)}, \bumpeq \backslash\text{bumpedeq (rel)}, \eqbumped \backslash\text{eqbumped (rel)}, \Bumpeq \backslash\text{Bumpedeq (rel)}, (\circeq) \circeq \backslash\text{circeq (rel)}, (\eqcirc) \eqcirc \backslash\text{eqcirc (rel)}, (\trianglelefteq) \trianglelefteq \backslash\text{trianglelefteq (rel)}, \corresponds \backslash\text{corresponds (rel)},$

Miscellaneous (matha)

$(\neg) \neg \backslash\text{neg (ord)}, (\ll) \ll \backslash\text{ll (rel)}, (\gg) \gg \backslash\text{gg (rel)}, (\#) \# \backslash\text{hash (ord)}, (\vdash) \vdash \backslash\text{vdash (rel)}, (\dashv) \dashv \backslash\text{dashv (rel)}, (\nvdash) \nvdash \backslash\text{nvdash (rel)}, (\dashv) \dashv \backslash\text{ndashv (rel)}, (\models) \models \backslash\text{vDash (rel)}, (\Dashv) \Dashv \backslash\text{Dashv (rel)}, (\nvDash) \nvDash \backslash\text{nvDash (rel)}, (\nDashv) \nDashv \backslash\text{nDashv (rel)}, (\Vdash) \Vdash \backslash\text{Vdash (rel)}, (\dashV) \dashV \backslash\text{dashV (rel)}, (\nVdash) \nVdash \backslash\text{nVdash (rel)}, (\nDashV) \nDashV \backslash\text{nDashV (rel)}, (\Vdash) \Vdash \backslash\text{Vdash (rel)}, (\dashV) \dashV \backslash\text{dashV (rel)}, (\nVdash) \nVdash \backslash\text{nVdash (rel)}, (\nDashV) \nDashV \backslash\text{nDashV (rel)}, (\circ) \circ \backslash\text{degree (ord)}, (\prime) \prime \backslash\text{prime (ord)}, (\prime) \prime \backslash\text{second (ord)}, (\prime) \prime \backslash\text{third (ord)}, (\prime) \prime \backslash\text{fourth (ord)}, (\flat) \flat \backslash\text{flat (ord)}, (\natural) \natural \backslash\text{natural (ord)}, (\sharp) \sharp \backslash\text{sharp (ord)}, (\infty) \infty \backslash\text{infty (ord)}, (\propto) \propto \backslash\text{propto (ord)}, (\dagger) \dagger \backslash\text{dagger (ord)}, (\ddagger) \ddagger \backslash\text{ddagger (ord)},$

Miscellaneous (mathb)

$(\between) \between \backslash\text{between (rel)}, (\smile) \smile \backslash\text{smile (rel)}, (\frown) \frown \backslash\text{frown (rel)}, (\varhash) \varhash \backslash\text{varhash (ord)}, (\leftthreetimes) \leftthreetimes \backslash\text{leftthreetimes (ord)}, (\rightthreetimes) \rightthreetimes \backslash\text{rightthreetimes (ord)}, (\pitchfork) \pitchfork \backslash\text{pitchfork (ord)}, (\bowtie) \bowtie \backslash\text{bowtie (rel)}, (\VDash) \VDash \backslash\text{VDash (rel)}, (\DashV) \DashV \backslash\text{DashV (rel)}, (\nVDash) \nVDash \backslash\text{nVDash (rel)}, (\nDashV) \nDashV \backslash\text{nDashV (rel)}, (\Vdash) \Vdash \backslash\text{Vdash (rel)}, (\dashV) \dashV \backslash\text{dashV (rel)}, (\nVdash) \nVdash \backslash\text{nVdash (rel)}, (\nDashV) \nDashV \backslash\text{nDashV (rel)}, (\therefore) \therefore \backslash\text{therefore (rel)}, (\because) \because \backslash\text{because (rel)}, (\ring) \ring \backslash\text{ring. (???)}, (\dot) \dot \backslash\text{dot. (???)}, (\ddot) \ddot \backslash\text{ddot. (???)}, (\ddd) \ddd \backslash\text{ddd. (???)}, (\angle) \angle \backslash\text{angle (ord)}, (\measuredangle) \measuredangle \backslash\text{measuredangle (ord)}, (\sphericalangle) \sphericalangle \backslash\text{sphericalangle (ord)},$

Delimiters as symbols (matha and mathb)

$(() (((open), ())) (close), ([[[(open), (]]] (close), (\setminus) \setminus \backslash\text{setminus (ord)}, (/) (/ (/ (ord), (|) | | (ord), (|) | \backslash\text{mid (rel)}, (\lcorner) \lcorner \backslash\text{lcorner (open)}, (\lrcorner) \lrcorner \backslash\text{lrcorner (close)}, (\ulcorner) \ulcorner \backslash\text{ulcorner (open)}, (\urcorner) \urcorner \backslash\text{urcorner (close)}, (\llcorner) \llcorner \backslash\text{llcorner (open)}, (\lrcorner) \lrcorner \backslash\text{lrcorner (close)},$

Astronomical symbols (mathb)

$(\odot) \odot \backslash\text{Sun (ord)}, (\mercury) \mercury \backslash\text{Mercury (ord)}, (\venus) \venus \backslash\text{Venus (ord)}, (\oplus) \oplus \backslash\text{Earth (ord)}, (\mars) \mars \backslash\text{Mars (ord)}, (\jupiter) \jupiter \backslash\text{Jupiter (ord)}, (\satur) \satur \backslash\text{Saturn (ord)}, (\uranus) \uranus \backslash\text{Uranus (ord)}, (\neptune) \neptune \backslash\text{Neptune (ord)}, (\pluto) \pluto \backslash\text{Pluto (ord)}, (\varEarth) \varEarth \backslash\text{varEarth (ord)}, (\leftmoon) \leftmoon \backslash\text{leftmoon (ord)}, (\rightmoon) \rightmoon \backslash\text{rightmoon (ord)}, (\fullmoon) \fullmoon \backslash\text{fullmoon (ord)}, (\newmoon) \newmoon \backslash\text{newmoon (ord)}, (\rip) \rip \backslash\text{rip (ord)}, (\aries) \aries \backslash\text{Aries (ord)}, (\taurus) \taurus \backslash\text{Taurus (ord)}, (\gemini) \gemini \backslash\text{Gemini (ord)},$

Letter like symbols (matha)

($\forall$) $\forall$ \forallforall (ord), ($\mathbb{C}$) $\mathbb{C}$ \complement (ord), (∂) ∂ \partialpartial (ord), (∂) ∂ \partialpartialslash (ord), ($\exists$) $\exists$ \existsexists (ord), ($\nexists$) $\nexists$ \nexistsexists (ord), ($\exists!$) $\exists!$ \Finv (ord), ($\mathcal{O}$) $\mathcal{O}$ \Game (ord), ($\emptyset$) $\emptyset$ \emptysetset (ord), ($\varnothing$) $\varnothing$ \diameter (ord), ($\top$) $\top$ \top (ord), ($\perp$) $\perp$ \bot (ord), ($\perp$) $\perp$ \perp (rel), ($\nottop$) $\nottop$ (ord), ($\notbot$) $\notbot$ (ord), ($\notperp$) $\notperp$ (rel), ($\curlywedge$) $\curlywedge$ (bin), ($\curlyvee$) $\curlyvee$ (bin), ($\in$) $\in$ \in (rel), ($\owns$) $\owns$ (rel), ($\notin$) $\notin$ \notin (rel), ($\nowner$) $\nowner$ (rel), ($\varnotin$) $\varnotin$ (rel), ($\varnowner$) $\varnowner$ (rel), ($\bar{\in}$) $\bar{\in}$ \barin (rel), ($\ownsbar$) $\ownsbar$ (rel), ($\cap$) $\cap$ \cap (bin), ($\cup$) $\cup$ \cup (bin), ($\uplus$) $\uplus$ \uplus (bin), ($\sqcap$) $\sqcap$ \sqcap (bin), ($\sqcup$) $\sqcup$ \sqcup (bin), ($\squplus$) $\squplus$ (bin), ($\wedge$) $\wedge$ \wedge (bin), ($\vee$) $\vee$ \vee (bin),

Letter like symbols (mathb)

($\bar{\wedge}$) $\bar{\wedge}$ \barwedge (bin), ($\bar{\vee}$) $\bar{\vee}$ \veebar (bin), ($\bar{\bar{\wedge}}$) $\bar{\bar{\wedge}}$ \doublebarwedge (bin), ($\bar{\vee}$) $\bar{\vee}$ \veedoublebar (bin), ($\bar{\cap}$) $\bar{\cap}$ \doublecap (bin), ($\bar{\cup}$) $\bar{\cup}$ \doublecup (bin), ($\sqcap$) $\sqcap$ \sqdoublecap (bin), ($\sqcup$) $\sqcup$ \sqdoublecup (bin),

Subset's and superset's signs (matha)

($\subset$) $\subset$ \subset (rel), ($\supset$) $\supset$ \supset (rel), ($\subsetneq$) $\subsetneq$ \subsetneq (rel), ($\supsetneq$) $\supsetneq$ \supsetneq (rel), ($\subseteq$) $\subseteq$ \subseteq (rel), ($\supseteq$) $\supseteq$ \supseteq (rel), ($\not\subset$) $\not\subset$ \notsubset (rel), ($\not\supset$) $\not\supset$ \notsupset (rel), ($\not\subseteq$) $\not\subseteq$ \notsubseteq (rel), ($\not\supseteq$) $\not\supseteq$ \notsupseteq (rel), ($\varsubsetneq$) $\varsubsetneq$ \varsubsetneq (rel), ($\varsupsetneq$) $\varsupsetneq$ \varsupsetneq (rel), ($\subseteq$) $\subseteq$ \subseteqeq (rel), ($\supseteq$) $\supseteq$ \supseteqeq (rel), ($\not\subseteq$) $\not\subseteq$ \notsubseteqeq (rel), ($\not\supseteq$) $\not\supseteq$ \notsupseteqeq (rel), ($\varsubseteq$) $\varsubseteq$ \varsubseteqeq (rel), ($\varsupseteq$) $\varsupseteq$ \varsupseteqeq (rel), ($\varsubsetneqq$) $\varsubsetneqq$ \varsubsetneqq (rel), ($\varsupsetneqq$) $\varsupsetneqq$ \varsupsetneqq (rel), ($\varsubseteq$) $\varsubseteq$ \varsubseteqeq (rel), ($\varsupseteq$) $\varsupseteq$ \varsupseteqeq (rel), ($\varsubsetneqq$) $\varsubsetneqq$ \varsubsetneqqeq (rel), ($\varsupsetneqq$) $\varsupsetneqq$ \varsupsetneqqeq (rel), ($\subset$) $\subset$ \Subset (rel), ($\supset$) $\supset$ \Supset (rel), ($\subsetneq$) $\subsetneq$ \nSubset (rel), ($\supsetneq$) $\supsetneq$ \nSupset (rel),

Square subset's and superset's signs (mathb)

($\sqsubset$) $\sqsubset$ \sqsubset (rel), ($\sqsupset$) $\sqsupset$ \sqsupset (rel), ($\sqsubsetneq$) $\sqsubsetneq$ \sqsubsetneq (rel), ($\sqsupsetneq$) $\sqsupsetneq$ \sqsupsetneq (rel), ($\sqsubseteq$) $\sqsubseteq$ \sqsubseteq (rel), ($\sqsupseteq$) $\sqsupseteq$ \sqsupseteq (rel), ($\sqsubsetneq$) $\sqsubsetneq$ \sqsubsetneq (rel), ($\sqsupsetneq$) $\sqsupsetneq$ \sqsupsetneq (rel), ($\varsubsetneq$) $\varsubsetneq$ \varsubsetneq (rel), ($\varsupsetneq$) $\varsupsetneq$ \varsupsetneq (rel), ($\sqsubseteq$) $\sqsubseteq$ \sqsubseteqeq (rel), ($\sqsupseteq$) $\sqsupseteq$ \sqsupseteqeq (rel), ($\sqsubsetneqq$) $\sqsubsetneqq$ \sqsubsetneqq (rel), ($\sqsupsetneqq$) $\sqsupsetneqq$ \sqsupsetneqq (rel), ($\varsubsetneqq$) $\varsubsetneqq$ \varsubsetneqqeq (rel), ($\varsupsetneqq$) $\varsupsetneqq$ \varsupsetneqqeq (rel), ($\sqsubset$) $\sqsubset$ \sqSubset (rel), ($\sqsupset$) $\sqsupset$ \sqSupset (rel), ($\sqsubsetneq$) $\sqsubsetneq$ \nqSubset (rel), ($\sqsupsetneq$) $\sqsupsetneq$ \nqSupset (rel),

Triangles as relations (matha)

($\triangleleft$) $\triangleleft$ \triangleleft (bin), ($\triangleleft$) $\triangleleft$ \vartriangleleft (rel), ($\triangleright$) $\triangleright$ \triangleright (bin), ($\triangleright$) $\triangleright$ \vartriangleright (rel), ($\ntriangleleft$) $\ntriangleleft$ \ntriangleleft (rel), ($\ntriangleright$) $\ntriangleright$ \ntriangleright (rel), ($\trianglelefteq$) $\trianglelefteq$ \trianglelefteq (rel), ($\trianglerighteq$) $\trianglerighteq$ \trianglerighteq (rel), ($\ntrianglelefteq$) $\ntrianglelefteq$ \ntrianglelefteq (rel), ($\ntrianglerighteq$) $\ntrianglerighteq$ \ntrianglerighteq (rel),

Triangles as binary operators (mathb)

($\triangleup$) $\triangleup$ \smalltriangleup (bin), ($\triangledown$) $\triangledown$ \smalltriangledown (bin), ($\triangleleft$) $\triangleleft$ \smalltriangleleft (bin), ($\triangleright$) $\triangleright$ \smalltriangleright (bin), ($\blacktriangleup$) $\blacktriangleup$ \blacktriangleup (bin), ($\blacktriangledown$) $\blacktriangledown$ \blacktriangledown (bin), ($\blacktriangleleft$) $\blacktriangleleft$ \blacktriangleleft (bin), ($\blacktriangleright$) $\blacktriangleright$ \blacktriangleright (bin),

Inequalities (matha)

($<$) $<$ \< (rel), ($>$) $>$ \> (rel), ($\less$) $\less$ \less (rel), ($\ngtr$) $\ngtr$ \ngtr (rel), ($\leq$) $\leq$ \leq (rel), ($\geq$) $\geq$ \geq (rel), ($\nleq$) $\nleq$ \nleq (rel), ($\ngeq$) $\ngeq$ \ngeq (rel), ($\leq$) $\leq$ \varleq (rel),

$\geq \backslash \text{vargeq}(\text{rel})$, $\nless \backslash \text{nvarleq}(\text{rel})$, $\nless \backslash \text{nvargeq}(\text{rel})$, $(\lessdot) \lessdot \backslash \text{lneq}(\text{rel})$, $(\gtrdot) \gtrdot \backslash \text{gneq}(\text{rel})$, $(\leq) \leq \backslash \text{leqq}(\text{rel})$, $(\geq) \geq \backslash \text{geqq}(\text{rel})$, $(\nless) \nless \backslash \text{nleqq}(\text{rel})$, $(\ngtr) \ngtr \backslash \text{ngeqq}(\text{rel})$, $(\lessdot) \lessdot \backslash \text{lneqq}(\text{rel})$, $(\gtrdot) \gtrdot \backslash \text{gneqq}(\text{rel})$, $(\lessdot) \lessdot \backslash \text{lvertneqq}(\text{rel})$, $(\gtrdot) \gtrdot \backslash \text{gvertneqq}(\text{rel})$, $(\lessdot) \lessdot \backslash \text{eqslantless}(\text{rel})$, $(\gtrdot) \gtrdot \backslash \text{eqslantgtr}(\text{rel})$, $\nless \backslash \text{neqslantless}(\text{rel})$, $\ngtr \backslash \text{neqslantgtr}(\text{rel})$, $(\lessdot) \lessdot \backslash \text{lessgtr}(\text{rel})$, $(\gtrdot) \gtrdot \backslash \text{gtrless}(\text{rel})$, $(\lessdot) \lessdot \backslash \text{lesseqgtr}(\text{rel})$, $(\gtrdot) \gtrdot \backslash \text{gtreqless}(\text{rel})$, $(\lessdot) \lessdot \backslash \text{lesseqqgtr}(\text{rel})$, $(\gtrdot) \gtrdot \backslash \text{gtreqqless}(\text{rel})$, $(\lessdot) \lessdot \backslash \text{lesssim}(\text{rel})$, $(\gtrdot) \gtrdot \backslash \text{gtrsim}(\text{rel})$, $\nless \backslash \text{nlesssim}(\text{rel})$, $\ngtr \backslash \text{ngtrsim}(\text{rel})$, $(\lessdot) \lessdot \backslash \text{lnsim}(\text{rel})$, $(\gtrdot) \gtrdot \backslash \text{gnsim}(\text{rel})$, $(\lessdot) \lessdot \backslash \text{lessapprox}(\text{rel})$, $(\gtrdot) \gtrdot \backslash \text{gtrapprox}(\text{rel})$, $\nless \backslash \text{nlessapprox}(\text{rel})$, $\ngtr \backslash \text{ngtrapprox}(\text{rel})$, $(\lessdot) \lessdot \backslash \text{lnapprox}(\text{rel})$, $(\gtrdot) \gtrdot \backslash \text{gnapprox}(\text{rel})$, $(\lessdot) \lessdot \backslash \text{lessdot}(\text{rel})$, $(\gtrdot) \gtrdot \backslash \text{gtrdot}(\text{rel})$, $(\lll) \lll \backslash \text{lll}(\text{rel})$, $(\ggg) \ggg \backslash \text{ggg}(\text{rel})$,

Inequalities (**mathb**)

$(\prec) \prec \backslash \text{prec}(\text{rel})$, $(\succ) \succ \backslash \text{succ}(\text{rel})$, $(\nprec) \nprec \backslash \text{nprec}(\text{rel})$, $(\nsucc) \nsucc \backslash \text{nsucc}(\text{rel})$, $(\preccurlyeq) \preccurlyeq \backslash \text{preccurlyeq}(\text{rel})$, $(\succcurlyeq) \succcurlyeq \backslash \text{succcurlyeq}(\text{rel})$, $\nprec \backslash \text{npreccurlyeq}(\text{rel})$, $\nsucc \backslash \text{nsucccurlyeq}(\text{rel})$, $(\preceq) \preceq \backslash \text{preceq}(\text{rel})$, $(\succeq) \succeq \backslash \text{succeq}(\text{rel})$, $(\nprec) \nprec \backslash \text{npreceq}(\text{rel})$, $(\nsucc) \nsucc \backslash \text{nsucceq}(\text{rel})$, $\prec \backslash \text{precneq}(\text{rel})$, $\succ \backslash \text{succneq}(\text{rel})$, $(\prec) \prec \backslash \text{curlyeqprec}(\text{rel})$, $(\succ) \succ \backslash \text{curlyeqsucc}(\text{rel})$, $\nprec \backslash \text{ncurlyeqprec}(\text{rel})$, $\nsucc \backslash \text{ncurlyeqsucc}(\text{rel})$, $(\precsim) \precsim \backslash \text{precsim}(\text{rel})$, $(\succsim) \succsim \backslash \text{succsim}(\text{rel})$, $\nprec \backslash \text{nprecsim}(\text{rel})$, $\nsucc \backslash \text{nsuccsim}(\text{rel})$, $(\precsim) \precsim \backslash \text{precnsim}(\text{rel})$, $(\succsim) \succsim \backslash \text{succnsim}(\text{rel})$, $(\precsim) \precsim \backslash \text{precapprox}(\text{rel})$, $(\succsim) \succsim \backslash \text{succapprox}(\text{rel})$, $\nprec \backslash \text{nprecapprox}(\text{rel})$, $\nsucc \backslash \text{nsuccapprox}(\text{rel})$, $(\precsim) \precsim \backslash \text{precnapprox}(\text{rel})$, $(\succsim) \succsim \backslash \text{succnapprox}(\text{rel})$, $\prec \backslash \text{precdot}(\text{rel})$, $\succ \backslash \text{succdot}(\text{rel})$, $\llcurly \backslash \text{llcurly}(\text{rel})$, $\ggcurly \backslash \text{ggcurly}(\text{rel})$,

Arrows and harpoons (**matha**)

$(\leftarrow) \leftarrow \backslash \text{leftarrow}(\text{rel})$, $(\rightarrow) \rightarrow \backslash \text{rightarrow}(\text{rel})$, $(\nwarrow) \nwarrow \backslash \text{nwarrow}(\text{rel})$, $(\nearrow) \nearrow \backslash \text{nearrow}(\text{rel})$, $(\swarrow) \swarrow \backslash \text{swarrow}(\text{rel})$, $(\searrow) \searrow \backslash \text{searrow}(\text{rel})$, $(\leftrightarrow) \leftrightarrow \backslash \text{leftrightarrow}(\text{rel})$, $(\nleftarrow) \nleftarrow \backslash \text{nleftarrow}(\text{rel})$, $(\nrightarrow) \nrightarrow \backslash \text{nrightarrow}(\text{rel})$, $(\leftrightarrow) \leftrightarrow \backslash \text{nleftrightarrow}(\text{rel})$, $(-) - \backslash \text{relbar}(\text{rel})$, $(\mapsto) \mapsto \backslash \text{mapstochar}(\text{rel})$, $(\mapsto) \mapsto \backslash \text{mapsfromchar}(\text{rel})$, $(\leftharpoonup) \leftharpoonup \backslash \text{leftharpoonup}(\text{rel})$, $(\rightharpoonup) \rightharpoonup \backslash \text{rightharpoonup}(\text{rel})$, $(\leftharpoonup) \leftharpoonup \backslash \text{leftharpoonupdown}(\text{rel})$, $(\rightharpoonup) \rightharpoonup \backslash \text{rightharpoonupdown}(\text{rel})$, $(\upharpoonleft) \upharpoonleft \backslash \text{upharpoonleft}(\text{rel})$, $(\downharpoonleft) \downharpoonleft \backslash \text{downharpoonleft}(\text{rel})$, $(\upharpoonright) \upharpoonright \backslash \text{upharpoonright}(\text{rel})$, $(\restriction) \restriction \text{(ord)}$, $(\downharpoonright) \downharpoonright \backslash \text{downharpoonright}(\text{rel})$, $(\leftrightharpoons) \leftrightharpoons \backslash \text{leftrightharpoons}(\text{rel})$, $(\rightharpoonup) \rightharpoonup \backslash \text{rightleftharpoons}(\text{rel})$, $(\updownharpoonright) \updownharpoonright \backslash \text{updownharpoons}(\text{rel})$, $(\downupharpoonright) \downupharpoonright \backslash \text{downupharpoons}(\text{rel})$, $(\Leftarrow) \Leftarrow \backslash \text{Leftarrow}(\text{rel})$, $(\Rightarrow) \Rightarrow \backslash \text{Rightarrow}(\text{rel})$, $(\Leftrightarrow) \Leftrightarrow \backslash \text{Leftrightarrow}(\text{rel})$, $(\nLeftarrow) \nLeftarrow \backslash \text{nLeftarrow}(\text{rel})$, $(\nRightarrow) \nRightarrow \backslash \text{nRightarrow}(\text{rel})$, $(\nLeftrightarrow) \nLeftrightarrow \backslash \text{nLeftrightarrow}(\text{rel})$, $(=) = \backslash \text{Relbar}(\text{rel})$, $(\mapsto) \mapsto \backslash \text{Mapstochar}(\text{rel})$, $(\mapsto) \mapsto \backslash \text{Mapsfromchar}(\text{rel})$,

Arrows and harpoons (**mathb**)

$(\leftrightsquigarrow) \leftrightsquigarrow \backslash \text{leftrightsquigarrow}(\text{rel})$, $(\rightrightarrows) \rightrightarrows \backslash \text{rightrightarrows}(\text{rel})$, $(\Uparrow) \Uparrow \backslash \text{upuparrows}(\text{rel})$, $(\Downarrow) \Downarrow \backslash \text{downdownarrows}(\text{rel})$, $(\leftrightarrows) \leftrightarrows \backslash \text{leftrightharpoons}(\text{rel})$, $(\rightleftarrows) \rightleftarrows \backslash \text{rightleftharpoons}(\text{rel})$, $(\Updownarrow) \Updownarrow \backslash \text{updownarrows}(\text{rel})$, $(\Downuparrows) \Downuparrows \backslash \text{downuparrows}(\text{rel})$, $(\leftharpoonup) \leftharpoonup \backslash \text{leftharpoonup}(\text{rel})$, $(\rightharpoonup) \rightharpoonup \backslash \text{rightharpoonup}(\text{rel})$, $(\upharpoonleft) \upharpoonleft \backslash \text{upharpoonleft}(\text{rel})$, $(\downharpoonleft) \downharpoonleft \backslash \text{downharpoonleft}(\text{rel})$, $(\upharpoonright) \upharpoonright \backslash \text{upharpoonright}(\text{rel})$, $(\downharpoonright) \downharpoonright \backslash \text{downharpoonright}(\text{rel})$, $(\leftrightharpoonup) \leftrightharpoonup \backslash \text{leftharpoonup}(\text{rel})$, $(\rightharpoonup) \rightharpoonup \backslash \text{rightharpoonup}(\text{rel})$, $(\leftharpoonup) \leftharpoonup \backslash \text{leftharpoonup}(\text{rel})$, $(\rightharpoonup) \rightharpoonup \backslash \text{rightharpoonup}(\text{rel})$, $(\leftharpoonup) \leftharpoonup \backslash \text{leftharpoonup}(\text{rel})$, $(\rightharpoonup) \rightharpoonup \backslash \text{rightharpoonup}(\text{rel})$, $(\hookrightarrow) \hookrightarrow \backslash \text{rhook}(\text{rel})$, $(\hookleftarrow) \hookleftarrow \backslash \text{lhook}(\text{rel})$, $(\diagup) \diagup \backslash \text{diagup}(\text{rel})$, $(\diagdown) \diagdown \backslash \text{diagdown}(\text{rel})$, $(\lsh) \lsh \backslash \text{Lsh}(\text{rel})$, $(\rsh) \rsh \backslash \text{Rsh}(\text{rel})$, $(\dlsh) \dlsh \backslash \text{dlsh}(\text{rel})$, $(\drsh) \drsh \backslash \text{drsh}(\text{rel})$, $(\looparrowleft) \looparrowleft \backslash \text{looparrowleft}(\text{rel})$, $(\looparrowright) \looparrowright \backslash \text{looparrowright}(\text{rel})$,

Nous avons aussi défini la commande `\varnot` de fonctionnement semblable à celui de l'instruction `\not` : `\varnot\xxx` teste si `\varnotxxx` est défini et, si oui exécute cette dernière, sinon applique `\varnotsign\xxx`. Nous reprenons la formule précédente avec cette commande :

$$a \doteq b \not\equiv c \equiv d \not\equiv e \doteq f \not\equiv g \equiv h \not\equiv i \equiv j \not\equiv kSl \not\equiv m,$$

ou on ne voit aucune différence. En revanche,

$$a = b \neq c \equiv d \not\equiv e \sim f \not\sim g \approx h \not\approx i \simeq j \not\simeq k \cong l \not\cong m$$

emploie dans ce cas uniquement la méthode de juxtaposition.

Numération maya

La présence de chiffres mayas dans ces séries n'est lié qu'à l'histoire du développement de celles-ci. Nous désirions au départ conserver quelques ressemblances avec les séries destinées au texte (caractères alphabétiques et numéraux). L'absence ou la rareté de possibilité de composer selon des numérations anciennes nous aura poussé à nous y intéresser un peu. Le résultat est illustré ci-dessous :

$$\begin{bmatrix} \vdots \\ \vdots \\ \cdot|| \end{bmatrix} + \begin{bmatrix} | \\ \cdot| \\ ||| \end{bmatrix} = \begin{bmatrix} \cdot|| \\ \cdot|| \\ \cdot| \end{bmatrix} \neq \text{☉}.$$

Cette ligne aura été codée selon

```
\mayadelimiters([,])
\maya{1251}+\maya{2135}=\maya{3386}\neq\mayadigit{0}.
```

Maintenir les caractères et les commandes correspondantes dans cet ensemble est toujours sujet à questions.

La commande `\prime` et ses amies

Nous avons réintroduit les signes `\prime` multiples associés aux commandes `\prime`, `\second`, `\third` et `\fourth`. Une commande naturellement associée est `\degree` correspondant à un symbole semblable à celui appelé par `\circ`. Il est néanmoins différent car il doit être homogène à l'ensemble des symboles précédents (comparer 44° et 44°).

$$44^\circ + 36' + 89'' + 46''' + 99''''$$

La construction habituelle (*i.e.* `99''''''`) supporte une propriété de ligaturage sur les caractères correspondants. C'est ce que l'on voit ci-dessous :

$$44^\circ + 36' + 89'' + 46''' + 99''''', \quad \text{mais} \quad 99'''''' \quad \text{ou} \quad 99''''''''.$$

(Il faut y regarder de très près pour y voir ce qu'il faut voir...)

'12x	$\in$	$\ni$	$\notin$	$\nexists$	$\notin$	$\nexists$	$\bar{\in}$	$\bar{\ni}$	"5x
'13x	$\cap$	$\cup$	$\oplus$	$\sqcap$	$\sqcup$	$\boxplus$	$\wedge$	$\vee$	
'14x	$\oplus$	$\ominus$	$\otimes$	$\oplus$	$\odot$	$\odot$	$\otimes$	$\otimes$	"6x
'15x	$\oplus$	$\oplus$	$\oplus$	$\oplus$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	
'16x	$($	$)$	$[$	$]$	$\{$	$\}$	$\llbracket$	$\rrbracket$	"7x
'17x	$\langle$	$\rangle$	$\backslash$	$/$	$ $	$\parallel$	$\parallel$	$ $	
'20x	$\subset$	$\supset$	$\not\subset$	$\not\supset$	$\subseteq$	$\supseteq$	$\not\subseteq$	$\not\supseteq$	"8x
'21x	$\subsetneq$	$\supsetneq$	$\not\subsetneq$	$\not\supsetneq$	$\subseteq$	$\supseteq$	$\not\subseteq$	$\not\supseteq$	
'22x	$\subsetneq$	$\supsetneq$	$\not\subsetneq$	$\not\supsetneq$	$\subseteq$	$\supseteq$	$\not\subseteq$	$\not\supseteq$	"9x
'23x	$\triangleleft$	$\triangleright$	$\ntriangleleft$	$\ntriangleright$	$\trianglelefteq$	$\trianglerighteq$	$\ntrianglelefteq$	$\ntrianglerighteq$	
'24x	$<$	$>$	$\nless$	$\ngtr$	$\leq$	$\geq$	$\nless$	$\ngtr$	"Ax
'25x	$\leq$	$\geq$	$\nless$	$\ngtr$	$\leq$	$\geq$	$\leq$	$\geq$	
'26x	$\nless$	$\ngtr$	$\nless$	$\ngtr$	$\nless$	$\ngtr$	$\nless$	$\ngtr$	"Bx
'27x	$\nless$	$\ngtr$	$\nless$	$\ngtr$	$\nless$	$\ngtr$	$\nless$	$\ngtr$	
'30x	$\lesssim$	$\gtrsim$	$\nless$	$\ngtr$	$\lesssim$	$\gtrsim$	$\lesssim$	$\gtrsim$	"Cx
'31x	$\nless$	$\ngtr$	$\nless$	$\ngtr$	$\nless$	$\ngtr$	$\nless$	$\ngtr$	
'32x	$\leftarrow$	$\rightarrow$	$\uparrow$	$\downarrow$	$\nearrow$	$\nwarrow$	$\swarrow$	$\searrow$	"Dx
'33x	$\leftrightarrow$	$\updownarrow$	$\nleftrightarrow$	$\nupdownarrow$	$\leftrightarrow$	$\nleftrightarrow$	$\nleftrightarrow$	$\nleftrightarrow$	
'34x	$\leftarrow$	$\rightarrow$	$\leftarrow$	$\rightarrow$	$\uparrow$	$\downarrow$	$\uparrow$	$\downarrow$	"Ex
'35x	$\rightleftarrows$	$\rightleftarrows$	$\rightleftarrows$	$\rightleftarrows$					
'36x	$\leftarrow$	$\rightarrow$	$\uparrow$	$\downarrow$	$\leftrightarrow$	$\updownarrow$	$\nleftrightarrow$	$\nleftrightarrow$	"Fx
'37x	$\nleftrightarrow$	$=$	$\vdash$	$\vdash$					
	"8	"9	"A	"B	"C	"D	"E	"F	

La série de symboles mineurs : mathb

mathb10	'0	'1	'2	'3	'4	'5	'6	'7	
'00x	$\dagger$	$\div$	$\times$	$\div$	$\cdot$	$\square$	$*$	$*$	"0x
'01x	$\ddagger$	Φ	$*$	$*$	$\blacklozenge$	$\blacksquare$	$\star$	$\star$	
'02x	$\doteq$	$=$	$\div$	$\doteq$	$\doteq$	$\doteq$	$\doteq$	$\doteq$	"1x
'03x	$\approx$	$\approx$	$\approx$	$\approx$	$\approx$	$\approx$			
'04x	$\propto$	$\smile$	$\frown$	$\#$	$\backslash$	$\swarrow$	$\hookrightarrow$	$\bowtie$	"2x
'05x	$\Vdash$	$\Vdash$	$\nVdash$	$\nVdash$	$\Vdash$	$\nVdash$	$\nVdash$	$\nVdash$	
'06x	$\mathbb{E}$	$\cdot$	$:$	$:$	$:$	$ $	$\therefore$	$\therefore$	"3x
'07x	$\circ$	$\cdot$	$\cdot$	$\cdot$	$\cdot$	$\angle$	$\acute{\angle}$	$\acute{\angle}$	
'10x	$\odot$	$\varnothing$	$\varnothing$	$\oplus$	$\oslash$	$\oslash$	$\oslash$	$\oslash$	"4x
'11x	Ψ	$\mathbb{P}$	$\oslash$	$\mathbb{C}$	$\mathbb{D}$	$\bigcirc$	$\bullet$	$\dagger$	
'12x	Υ	$\oslash$	Π						"5x
'13x	$\wedge$	$\vee$	$\wedge$	$\nless$	$\cap$	$\cup$	$\sqcap$	$\sqcup$	

'14x	$\boxplus$	$\boxminus$	$\boxtimes$	$\boxdiv$	$\boxdot$	$\boxcirc$	$\boxast$	$\boxtimes$	"6x
'15x	$\boxplus$	$\boxplus$	$\boxplus$	$\boxplus$	$\square$	$\square$	$\square$	$\square$	
'16x	$($	$)$	$[$	$]$	$[$	$]$	$[$	$]$	"7x
'17x	$\lceil$	$\rceil$	$\lfloor$	$\rfloor$	$\backslash$	$/$	$ $	$/$	
'20x	$\sqsubset$	$\sqsupset$	$\sqsubset$	$\sqsupset$	$\sqsubset$	$\sqsupset$	$\sqsubset$	$\sqsupset$	"8x
'21x	$\sqsubset$	$\sqsupset$	$\sqsubset$	$\sqsupset$	$\sqsubset$	$\sqsupset$	$\sqsubset$	$\sqsupset$	
'22x	$\sqsubset$	$\sqsupset$	$\sqsubset$	$\sqsupset$	$\sqsubset$	$\sqsupset$	$\sqsubset$	$\sqsupset$	"9x
'23x	$\triangle$	∇	$\triangleleft$	$\triangleright$	$\blacktriangle$	$\blacktriangledown$	$\blacktriangleleft$	$\blacktriangleright$	
'24x	$\lessgtr$	$\gtrless$	$\lessgtr$	$\gtrless$	$\lessgtr$	$\gtrless$	$\lessgtr$	$\gtrless$	"Ax
'25x	$\lessgtr$	$\gtrless$	$\lessgtr$	$\gtrless$	$\lessgtr$	$\gtrless$	$\lessgtr$	$\gtrless$	
'26x	$\lessgtr$	$\gtrless$	$\lessgtr$	$\gtrless$	$\lessgtr$	$\gtrless$	$\lessgtr$	$\gtrless$	"Bx
'27x	$\lessgtr$	$\gtrless$	$\lessgtr$	$\gtrless$	$\lessgtr$	$\gtrless$	$\lessgtr$	$\gtrless$	
'30x	$\lessgtr$	$\gtrless$	$\lessgtr$	$\gtrless$	$\lessgtr$	$\gtrless$	$\lessgtr$	$\gtrless$	"Cx
'31x	$\lessgtr$	$\gtrless$	$\lessgtr$	$\gtrless$	$\lessgtr$	$\gtrless$	$\lessgtr$	$\gtrless$	
'32x	$\rightleftarrows$	$\rightrightarrows$	$\updownarrow$	$\updownarrow$	$\rightleftarrows$	$\rightleftarrows$	$\rightleftarrows$	$\rightleftarrows$	"Dx
'33x	$\rightleftarrows$	$\rightrightarrows$	$\updownarrow$	$\updownarrow$	$\rightleftarrows$	$\rightleftarrows$	$\rightleftarrows$	$\rightleftarrows$	
'34x	$\rightarrow$	$\rightarrow$	$\rightarrow$	$\rightarrow$	$\rightarrow$	$\rightarrow$			"Ex
'35x	$\rightarrow$	$\rightarrow$	$\rightarrow$	$\rightarrow$	$\rightarrow$	$\rightarrow$	$\rightarrow$	$\rightarrow$	
'36x	$\rightarrow$	$\rightarrow$	$\rightarrow$	$\rightarrow$	$\rightarrow$	$\rightarrow$	$\rightarrow$	$\rightarrow$	"Fx
'37x	$\rightarrow$	$\rightarrow$	$\rightarrow$		$\rightarrow$	$\rightarrow$	$\rightarrow$	$\rightarrow$	
	"8	"9	"A	"B	"C	"D	"E	"F	

La série de symboles extensibles : mathx

mathx10	'0	'1	'2	'3	'4	'5	'6	'7	
'00x	(	(	(	(	(	\			"0x
'01x	)	)	)	)	\	/			
'02x	[	[	[	[	[	[			"1x
'03x	]	]	]	]	]	]			
'04x	{	{	{	{	{	{	}	'	"2x
'05x	}	}	}	}	}	}	}	'	
'06x	[[	[[	[[	[[	[[	[[		•	"3x
'07x	]]	]]	]]	]]	]]	]]		•	
'10x	<	<	<	<	>	>	>	>	"4x
'11x	\	\	\	\	/	/	/	/	
'12x	[	[	[	[	]	]	]	]	"5x
'13x	]	]	]	]	[	[	[	[	
'14x	√	√	√	√	√	√			"6x
'15x	~	~	~	-	~	~	~	-	
'16x	^	^	^	-	→	^	(	)	"7x
'17x	^	^	^	^	^	^	^	^	
'20x	~	~	~	~	~	~	~	~	"8x
'21x	→	→	→	→	~	~	~	~	

'22x	+	×	∩	∪	⊕	⊔	⊓	⊔	"9x
'23x	⊕	∧	∨	∧	∨	↑	↓	↓	
'24x	+	×	∩	∪	⊕	⊔	⊓	⊔	"Ax
'25x	⊕	∧	∨	∧	∨	↑	↓	∥	
'26x	Σ	Π	Π	∫	∫	∫	∫	∫	"Bx
'27x	Σ	Π	Π	∫	∫	∫	∫	∫	
'30x	⊕	⊖	⊗	⊙	⊙	⊙	⊗	⊗	"Cx
'31x	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	
'32x	⊕	⊖	⊗	⊙	⊙	⊙	⊗	⊗	"Dx
'33x	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	
'34x	⊕	⊖	⊗	⊙	⊙	⊙	⊗	⊗	"Ex
'35x	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	
'36x	⊕	⊖	⊗	⊙	⊙	⊙	⊗	⊗	"Fx
'37x	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	
	"8	"9	"A	"B	"C	"D	"E	"F	

Une série de symboles non supportés : mathu

mathu10/cmsy10

$\mathcal{A}\mathcal{A}_{65}$ $\mathcal{B}\mathcal{B}_{66}$ $\mathcal{C}\mathcal{C}_{67}$ $\mathcal{D}\mathcal{D}_{68}$ $\mathcal{E}\mathcal{E}_{69}$ $\mathcal{F}\mathcal{F}_{70}$ $\mathcal{G}\mathcal{G}_{71}$ $\mathcal{H}\mathcal{H}_{72}$ $\mathcal{I}\mathcal{I}_{73}$ $\mathcal{J}\mathcal{J}_{74}$ $\mathcal{K}\mathcal{K}_{75}$ $\mathcal{L}\mathcal{L}_{76}$ $\mathcal{M}\mathcal{M}_{77}$ $\mathcal{N}\mathcal{N}_{78}$
 $\mathcal{O}\mathcal{O}_{79}$ $\mathcal{P}\mathcal{P}_{80}$ $\mathcal{Q}\mathcal{Q}_{81}$ $\mathcal{R}\mathcal{R}_{82}$ $\mathcal{S}\mathcal{S}_{83}$ $\mathcal{T}\mathcal{T}_{84}$ $\mathcal{U}\mathcal{U}_{85}$ $\mathcal{V}\mathcal{V}_{86}$ $\mathcal{W}\mathcal{W}_{87}$ $\mathcal{X}\mathcal{X}_{88}$ $\mathcal{Y}\mathcal{Y}_{89}$ $\mathcal{Z}\mathcal{Z}_{90}$

mathu10/cmmi10

$\mathcal{A}\mathcal{A}_{65}$ $\mathcal{B}\mathcal{B}_{66}$ $\mathcal{C}\mathcal{C}_{67}$ $\mathcal{D}\mathcal{D}_{68}$ $\mathcal{E}\mathcal{E}_{69}$ $\mathcal{F}\mathcal{F}_{70}$ $\mathcal{G}\mathcal{G}_{71}$ $\mathcal{H}\mathcal{H}_{72}$ $\mathcal{I}\mathcal{I}_{73}$ $\mathcal{J}\mathcal{J}_{74}$ $\mathcal{K}\mathcal{K}_{75}$ $\mathcal{L}\mathcal{L}_{76}$ $\mathcal{M}\mathcal{M}_{77}$ $\mathcal{N}\mathcal{N}_{78}$
 $\mathcal{O}\mathcal{O}_{79}$ $\mathcal{P}\mathcal{P}_{80}$ $\mathcal{Q}\mathcal{Q}_{81}$ $\mathcal{R}\mathcal{R}_{82}$ $\mathcal{S}\mathcal{S}_{83}$ $\mathcal{T}\mathcal{T}_{84}$ $\mathcal{U}\mathcal{U}_{85}$ $\mathcal{V}\mathcal{V}_{86}$ $\mathcal{W}\mathcal{W}_{87}$ $\mathcal{X}\mathcal{X}_{88}$ $\mathcal{Y}\mathcal{Y}_{89}$ $\mathcal{Z}\mathcal{Z}_{90}$ $\mathfrak{b}_{91}$ $\mathfrak{h}_{92}$ $\mathfrak{j}_{93}$ $\mathfrak{k}_{94}$
 $\mathfrak{l}_{95}$ $\mathfrak{m}_{96}$ $\mathfrak{n}_{97}$ $\mathfrak{o}_{98}$ $\mathfrak{p}_{99}$ $\mathfrak{q}_{100}$ $\mathfrak{r}_{101}$ $\mathfrak{s}_{102}$ $\mathfrak{t}_{103}$ $\mathfrak{u}_{104}$ $\mathfrak{v}_{105}$ $\mathfrak{w}_{106}$ $\mathfrak{x}_{107}$ $\mathfrak{y}_{108}$ $\mathfrak{z}_{109}$ $\mathfrak{a}_{110}$
 $\mathfrak{b}_{111}$ $\mathfrak{c}_{112}$ $\mathfrak{d}_{113}$ $\mathfrak{e}_{114}$ $\mathfrak{f}_{115}$ $\mathfrak{g}_{116}$ $\mathfrak{h}_{117}$ $\mathfrak{i}_{118}$ $\mathfrak{j}_{119}$ $\mathfrak{k}_{120}$ $\mathfrak{l}_{121}$ $\mathfrak{m}_{122}$ $\mathfrak{n}_{123}$ $\mathfrak{o}_{124}$ $\mathfrak{p}_{125}$

mathu10	'0	'1	'2	'3	'4	'5	'6	'7	
'02x	ι	⋈	⋈	⋈	⋈		⋈	⋈	"1x
'03x	⋈	⋈							
'04x									"2x
'05x					,	⋈	⋈	⋈	
'06x	0	1	2	3	4	5	6	7	"3x
'07x	8	9	:	;					
'10x		A	B	C	D	E	F	G	"4x
'11x	H	I	J	K	L	M	N	O	
'12x	P	Q	R	S	T	U	V	W	"5x
'13x	X	Y	Z				^	.	

'14x		a	b	c	d	e	f	g	"6x
'15x	h	i	j	k	l	m	n	o	
'16x	p	q	r	s	t	u	v	w	"7x
'17x	x	y	z	—	—	"	~	"	
'20x	△	▽	◁	▷	▲	▼	◀	▶	"8x
'21x	△	▽	◁	▷	▲	▼	◀	▶	
'22x	∖	∕	∕	≈	≠	≈	≠	∕	"9x
'23x	∕	∕	⊗	2	┌	⊗	⊗	⊗	
'24x	∕	∕	⊗	⊗					"Ax
'25x									
'26x	□	◻	◻	○	◇	◻	◻	○	"Bx
'27x	☆	★	☆	★	○	○	○	○	
'30x	⊕	⊕	⊙	⊙	⊙	⊙	⊙	⊙	"Cx
'31x	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	
'32x	●	●	●	●	●	●	●	●	"Dx
'33x	☯	☯				●	●	●	
'34x	⊠	⊠	⊠	⊠	⊠	⊠	⊠	⊠	"Ex
'35x	⊠	⊠	⊠	⊠	⊠	⊠	⊠	⊠	
'36x	■	■	■	■	■	■	■	■	"Fx
'37x	■	■				■	■	■	
	"8	"9	"A	"B	"C	"D	"E	"F	

On November 14, 1885, Senator Mrs. Leland Stanford called together at their San Francisco mansion the 24 prominent men who had been chosen as the first trustees of The Leland Stanford Junior University. They handed to the board the Founding Grant of the University, which they had executed three days before. This document—with various amendments, legislative acts, and court decrees—remains as the University's charter. In bold, sweeping language it stipulates that the objectives of the University are to qualify students for personal success and direct usefulness in life; and to promote the public welfare by exercising an influence in behalf of humanity and civilization, teaching the blessings of liberty regulated by law, and inculcating love and reverence for the great principles of government as derived from the inalienable rights of man to life, liberty, and the pursuit of happiness. But aren't Kafka's Schloß and sops uvres often naïve vis-à-vis the demonic phoenix's official rôle in fluffy soufflés THE DAZED BROWN FOX QUICKLY GAVE 12345-67890 JUMPS

hamburgefonstiv HAMBURGEFONSTIV

Angela Beatrice Claire Diana Érica Françoise Ginette Hélène Iris Jackie Kären Laura María Nátalie ctave Pauline Quéneau Roxanne Sabine Tāja Uršula Vivian Wendy Xanthippe Yvonne Zäzilie

min, min: min; min min min min min min min.

pig, pig: pig; pig pig pig pig pig pig pig.

hid, hid: hid; hid hid hid hid hid hid hid.

HIE, HIE: HIE; HIE HIE HIE HIE HIE HIE HIE.

TIP, TIP: TIP; TIP TIP TIP TIP TIP TIP TIP.

fluff, fluff: fluff; fluff fluff fluff fluff fluff fluff fluff.

1,234.56 78 9 0

aaabacadaeafagahaiajakalamanaoapaqarasatauavawaxayazaßaaaa

babbbcbdbefbgbhbibjbkbblmbnbnbobpbqbrbsbtbubvbwxbvzbzßbbbbb

cacbeecedecfegchcicjekelemencocpeqeresetecuevewexcyeczßcccc

dadbcdddedfdgdhdidjdldldmndndodpdqdrdsdtduvdvdwdxdydzdßdddd

eaebeecedeeefegeheiejekelemeneoepeqereseteuevewexeyezßeeee

fafbfcfdfefffgfhfijfjfkflfmfnfofpfqfrfsftfufvfwfxfyfzfßffff

gagbgcgdgegfgggghgigjgkglgmgnogogpgqgrgsrgtgugvgwgxgygzgßgggg

hahbhchdhehfhghhhhhjhkhhlhmhnhohphqhrrhshthuhvhwxxhyhzhßhhhh

iaibicidieifigihiiijikiliminioipiqirisitiuiwiwixiyizibßiiii

jajbjejdjejjfgjhjijjjkjljm.jnjojpjqjrjsjtjujvjwjxjyjzjbßjjjj

kakbkekdkkfkgkhkikjkkklkmknkokpkqkrksktkukvkwkxkykzkßkkkk

lalblcldlflglhliljklmnlmlolplqlrlsltlulvlwlylzlßllll

mambmemdmemfmgmhminjmkmmlmmnmomppmqmrmsmtmumvmwmxmymzmßmmmm

mm

nanbnendnenfnghnininjknlnmnnnonpnqnrmnsntnunvnwnxnynznßnnnn

oaobocodoeofogohioiojokolomonoopoqorosotouovowoxoyoßoooo

papbpcpdpepfpgphpipjpklpmpnpoppqpprpsptpupvpwpwpxypzpbßpppp

qaqbqeqdqeqfggqhqiqliqlmqnqoqpqqqrqsqtquqvqwqxqyqzqbßqqqq

rarbrerdrerfrgrhrirjrkrlrmrnrorprqrrrsrtrurvrwrxyrztßrrrr

sasbscsdsesfsgshsisjskslsm.snsospsqsrsstsusvswsxsyyszßssss

tatbtctdtetftgthtitjtkltmtntotptqttrstttutvtwtxtytztßtttt

uaubucudueufuguhuiujukulumunoupuqurusutuuuvuwuxuyuzubßuuuu

vavbvvdvvevfvgvhvivjvkvlymvnvovvpvqvrvsvtvuvvvwvavvzvßvvvv

wawbwewdwewfwgwhwiwjwkwlwmlwnwowpwqwrwswtwuwvwvwvawwywzwbßwwww

xaxbxexdxexfgxhxixjxkxlxmxnxoxpxqxrsatxuxvwxwxxxyxzxßxxxx

yaybycydyeyfygyhyiyjykylymynyoypyqyrysytyuyvywyxyyyzyßyyyy

zazbzczdzefzgzghzizjzklzmznzozpzqzrzsztzuzvzwzxzyzzzßzzzz

ßaßbbßcßdßeßfßgßhßißjßkßlßmßnßoßpßqßrßsßtßußvßwßxßyßzßßßßßß

abcdefghijklmnopqrstuvwxyzß

abcdefghijklmnopqrstuvwxyzß

abcdefghijklmnopqrstuvwxyzß

AAABACADAÆAFAGAHATAJAK.ACAMAN.AOAPAQA.RASATAUAVAWAXAJA

AZAAAA

B.ABBBCCBDBEBFBGBHBTB.BKBLBMBNBOB.PBQB.RBSBTBUBVBWBABYBZBBBB

C.ACBBBBDCFCFCGCHCICJCKCLCMCN'COC'PCQCRCSCTCUCVCWCXCVCZCCCC

D.ADBDCDDDEDFDGDH.DIDJDKDL.DMDN'DODPDQDR.DSDTDUDVDWDX'DYD

DZDDDD

E.AEBECEDEEEFEGEHEIEJEKELEMEÑEOEPEQERESETEUEVEWEEXEYEZEÈÈÈ

F.AFBFCFDFFEFFFGFH.FIFJFK.FL.FM.FN.FO.FPFQ.FR.FSFT.FU.FV.FW.FX.FY.FZ.FFFFA

F

G.AGBGCGDGEFGGGH.GIGJGKGLGMGN'GOGPGQGRGSGTGUGVGWGXGYGZGGGG

H.AHBHCHDHEH.FHGH.HH.HJ.HK.HL.HM.HN.HO.HPHQH.R.HSHTHUH.VH.WH

HXHYHZHHH

I.AIBICIDIEIFIGIH.IIIJ.K.L.LM.LN'LO.LPI.Q.IR.IS.IT.IU.IV.IW.IX.IY.IZ.IIII

JAJBJCJDJEJFJGJHJIJJKJLJMJNJONJOJPJQJRJJSJTJUJVVJWJXJYJZJJJ■
 JJ
 KAKBKCKDKCKFKGKHKIKJKKKLKMKNKOKPKQK RK SK TKUKVKWKXK YKZKK■
 KKK
 LALBCLCLDELFLGLHLILJLKLLLMLNLOLPLQLRLSLTLULVLWLXL YLZLLLL
 MAMBMCMMDMEMFMGMHMLMJMKMLMMMMNMOMPMQMRMSMTMUMVM■
 MWMXMYMZMMMMM
 NANBNCNDNEFNENHNNINJNKNLNMNNNONPNQN RNSNTNUNVNWNXNYN■
 NZNNNN
 OAOBOCODOEOFOGHOIOJOLOMNONOOPOQOROSOTOOUOVOWOXOYOZO■
 OOOO
 PAPBPCPDPEPFPGPHPIPJPKPLPMPNPOPPPPQPRPSPTPUVPVPWPXPYPZP■
 PPPP
 QAQBQCQDQEQFQGQHQIQJQKQLQMQLNQOQPQQQRQSQTQUQVQWQXQYQ■
 QZQQQQ
 RARBRCRDRERFRGRHRI RJRKRLRMRNRORPRQR RRSRTRURVRWR■
 RXR YRZR RRR
 SASBSCSDSESFSGSHSISJSKSLSMSNSOSPSQSRSSSTSUSVSWSA XSYSZSSSS
 TABTCTDTETFTGTHTITJTKTLTMTNTOTPTQT RTSTTTTUTVTWTXTYTZT■
 TTTT
 UAUBUCUDUEUFUGUHUIUJUKULUMUNUOUPUQU RUSUTUUVUWUXUYUZUUU
 VAVBVCVDVEV FVG VHVIVJVKVLVMVNVOVPVQVRVSVTVUUVVWVXVYVZVVV■
 V
 WAWBWCWDWEWFWGWHWIWJWKWLWMWNWOWPWQWRWSWTWUW■
 WVWWWXWYWZWWWW
 XAXBACXDXEXFXGXHXIXJAXALXMXNXOXPXQXRASXTXUXVXWXXX YXZAXXA■
 X
 YAYBYCYDYEYFYGYHYIYJYKYLYMYNYOYPYQYRYSYTYUYVYWYXYYYZYYY■
 YY
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 $|A| + |B| + |C| + |D| + |E| + |F| + |G| + |H| + |I| + |J| + |K| + |L| + |M| + |N| + |O| +$
 $|P| + |Q| + |R| + |S| + |T| + |U| + |V| + |W| + |X| + |Y| + |Z| + |a| + |b| + |c| + |d| + |e| +$
 $|f| + |g| + |h| + |i| + |j| + |k| + |l| + |m| + |n| + |o| + |p| + |q| + |r| + |s| + |t| + |u| + |v| + |w| +$

[illegible]