

# The stix2 package

STI Pub Companies\*

Version 2.0.2, 2021/01/14

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\*This package was developed by Khaled Hosny on behalf of the STI Pub companies, who gratefully acknowledge his efforts.

## 1 Introduction

The STIX fonts are a set of OpenType fonts designed for use with typesetting engines such as X<sub>Y</sub>TeX or LuaTeX that directly support Unicode and modern font technologies. When used with one of these engines, no extra support is needed beyond the unicode-math package. This is the recommended way of using the STIX fonts with TeX. The most recent version of the STIX fonts can be found at <https://github.com/stipub/stixfonts>.

The stix2 package provides support for versions of TeX that are limited to TFM files, Type 1 PostScript fonts, and 8-bit font encodings. Version 2.0.0 of the STIX fonts are being released in this format in hopes of easing the transition from legacy TeX engines to modern fully Unicode-compatible systems. The Type 1 versions are merely a repackaging of the original OpenType versions and should not be viewed as independent entities. Some glyphs that are traditionally available in TeX math fonts are not yet available in the STIX Two OpenType fonts. In such cases, we have chosen to omit them from the stix2 package rather than create incompatibilities between the OpenType and Type 1 versions. In addition, **while development of the OpenType versions is ongoing, no further updates are planned to the Type 1 versions of the fonts.**

The stix2 package provides support for text fonts in the following L<sup>A</sup>T<sub>E</sub>X encodings:

- T1 (the default encoding): The extended Latin “Cork” encoding
- OT1: Knuth’s original Computer Modern Roman encoding
- OT2: Cyrillic
- TS1: L<sup>A</sup>T<sub>E</sub>X symbol encoding

Please note that the Type 1 versions of these fonts only expose a small subset of the text glyphs available in the full OpenType versions, which contain extensive coverage of the following Unicode blocks:

- Latin Extended A
- IPA Extensions
- Latin Extended Additional

as well as partial coverage of several other blocks.

The math support covers nearly every mathematical symbol in the STIX Two fonts. Section 4 lists math alphabets supported by the stix2 package, while section 5 lists all defined math symbols. There are also three fonts containing extra miscellaneous symbols, `stix2-extra1`, `stix2-extra2` and `stix2-extra3`, provided as TFM and PFB files without support from the macro package.

## 2 Background

The *Scientific and Technical Information eXchange* (STIX) fonts are intended to satisfy the demanding needs of authors, publishers, printers, and others working in the scientific, medical, and technical fields. They combine a comprehensive Unicode-based collection of mathematical symbols and alphabets with a set of text faces suitable for professional publishing. The fonts are available royalty-free under the SIL Open Font License.

Version 2.0.0 of the STIX fonts, now known as “STIX Two”, is a thorough revision undertaken by the renowned type house Tiro Typeworks. The STIX Two fonts consist of four text fonts (Regular, Italic, Bold, and Bold Italic) and one Math font. Together, they provide a uniform set of fonts that can be

used throughout the production process, whether that be a traditional print-only process, an entirely electronic one, or a combination of the two.

The STIX project began through the joint efforts of AIP Publishing, American Chemical Society, American Mathematical Society, American Physical Society, Elsevier, Inc., and The Institute of Electrical and Electronic Engineers. These companies are collectively known as the STI Pub companies.

### 3 Usage

Using STIX Two fonts with  $\LaTeX$  is as simple as loading the `stix2` package:

```
\documentclass{article}
\usepackage{stix2}
\begin{document}
Some text, and a math formula  $(a+b=\sqrt{c})$ .
\end{document}
```

#### 3.1 Options

<code>notext</code>	Do not change the default text fonts.
<code>nomath</code>	Do not change the default math fonts.
<code>not1</code>	Do not change the default font encoding to T1.
<code>notextcomp</code>	Do not load the <code>textcomp</code> package (provides symbols and oldstyle figures from TS1 encoding to be used with T1 encoded text fonts).
<code>lcgreekalpha</code>	By default lower case Greek, partial differential and nabla are given <code>\mathord</code> class which makes them insensitive to math alphabet changes (i.e. $\mathbf{\beta}$ gives $\beta$ instead of $\boldsymbol{\beta}$ ); with this option they will be given <code>\mathalpha</code> class just like Latin and upper case Greek.
<code>upint</code>	Use upright integrals by default ( $\int$ instead of $\int$ ). See Section 5.6 on page 19 for more details.

#### 3.2 Compatibility with other packages

##### `amsmath`

The `stix2` package should be used with at least `amsmath` v2.14, `amssymb` v3.01, and `amsfonts` v3.01.

With `amsmath` v2.14 or newer, it is recommended to load it (and/or packages that load it) *after* the `stix2` package. Older versions of `amsmath` must be loaded *before* the `stix2` package, otherwise errors will arise.

The following `amsmath` options affect not only symbols known to `amsmath`, but also new symbols defined by the `stix2` package: `sumlimits`, `nosumlimits`, `intllimits` and `nointlimits`.

#### 3.3 Feedback

See [https://github.com/stipub/stix\\_type1](https://github.com/stipub/stix_type1).

## 4 Math alphabets

The following table lists math alphabets defined by the stix2 package with the Unicode ranges they cover:

	A-Z	a-z	Γ-Ω	α-ω	0-9
* <code>\mathrm</code>	00041-0005A	00061-0007A	00393-003A9	003B1-003C9	00030-00039
* <code>\mathbf</code>	1D400-1D419	1D41A-1D433	1D6AA-1D6C0	1D6C2-1D6DA	1D7CE-1D7D7
* <code>\mathit</code>	1D434-1D44D	1D44E-1D467	1D6E4-1D6FA	1D6FC-1D714	-
<code>\mathbfit</code>	1D468-1D481	1D482-1D49B	1D71E-1D734	1D736-1D74E	-
* <code>\mathcal</code>	•	-	-	-	-
* <code>\mathscr</code>	1D49C-1D4B5	1D4B6-1D4CF	-	-	-
<code>\mathbfscr</code>	1D4D0-1D4E9	1D4EA-1D503	-	-	-
* <code>\mathsf</code>	1D5A0-1D5B9	1D5BA-1D5D3	-	-	1D7E2-1D7EB
<code>\mathbfsf</code>	1D5D4-1D5ED	1D5EE-1D607	1D758-1D76E	1D770-1D788	1D7EC-1D7F5
* <code>\mathsfit</code>	1D608-1D621	1D622-1D63B	-	-	-
<code>\mathbfsfit</code>	1D63C-1D655	1D656-1D66F	1D792-1D7A8	1D7AA-1D7C2	-
* <code>\mathbb</code>	1D538-1D551	1D552-1D56B	-	-	1D7D8-1D7E1
* <code>\mathfrak</code>	1D504-1D51D	1D51E-1D537	-	-	-
<code>\mathbffrak</code>	1D56C-1D585	1D586-1D59F	-	-	-
* <code>\mathtt</code>	1D670-1D689	1D68A-1D6A3	-	-	1D7F6-1D7FF

- Covered by STIX Two fonts but not in Unicode.
- Not covered.
- \* Available by default when loading the stix2 package.

$\TeX$  allows only 16 math alphabets to be used simultaneously, so not all of these alphabets can be used in one document. When the stix2 package is loaded, 12 math groups are allocated, with the 11 math alphabets that are marked above available by default, which leaves room for 4 other math groups to be allocated on demand when any of the other alphabets is used.

## 5 Math symbols

The following section lists all math symbols defined by the stix2 package. Symbols with \* next to their name do not have a bold version; when `\boldmath` is active, the non-bold glyph will be used.





























































































### 5.1 Alphabetics

Γ	U+0393	<code>\Gamma</code>	Υ	U+03A5	<code>\Upsilon</code>
Δ	U+0394	<code>\Delta</code>	Φ	U+03A6	<code>\Phi</code>
Θ	U+0398	<code>\Theta</code>	Ψ	U+03A8	<code>\Psi</code>
Λ	U+039B	<code>\Lambda</code>	Ω	U+03A9	<code>\Omega</code>
Ξ	U+039E	<code>\Xi</code>	α	U+03B1	<code>\alpha</code>
Π	U+03A0	<code>\Pi</code>	β	U+03B2	<code>\beta</code>
Σ	U+03A3	<code>\Sigma</code>	γ	U+03B3	<code>\gamma</code>

$\delta$	U+03B4	\delta	$\upsilon$	U+03C5	\upsilon
$\epsilon$	U+03B5	\epsilon	$\phi$	U+03D5	\phi
$\zeta$	U+03B6	\zeta	$\chi$	U+03C7	\chi
$\eta$	U+03B7	\eta	$\psi$	U+03C8	\psi
$\theta$	U+03B8	\theta	$\omega$	U+03C9	\omega
$\iota$	U+03B9	\iota	$\varepsilon$	U+03F5	\varepsilon
$\kappa$	U+03BA	\kappa	$\vartheta$	U+03D1	\vartheta
$\lambda$	U+03BB	\lambda	$\varpi$	U+03D6	\varpi
$\mu$	U+03BC	\mu	$\varrho$	U+03F1	\varrho
$\nu$	U+03BD	\nu	$\varsigma$	U+03C2	\varsigma
$\xi$	U+03BE	\xi	$\varphi$	U+03C6	\varphi
$\pi$	U+03C0	\pi	$\nabla$	U+2207	\nabla
$\rho$	U+03C1	\rho	$\partial$	U+2202	\partial
$\sigma$	U+03C3	\sigma	$\imath$	U+1D6A4	\imath
$\tau$	U+03C4	\tau	$\jmath$	U+1D6A5	\jmath

## 5.2 Ordinary symbols
















































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\$	U+0024	\mathdollar	-	U+2043	\hyphenbullet*
%	U+0025	\%	??	U+2047	\Question
&	U+0026	\&	≡	U+2057	\qprime
.	U+002E	.	○	U+20DD	\enclosecircle
/	U+002F	/	□	U+20DE	\enclosesquare*
?	U+003F	?	◇	U+20DF	\enclosediamond*
@	U+0040	@	△	U+20E4	\enclosetriangle
\	U+005C	\backslash	ℵ	U+2107	\Eulerconst
£	U+00A3	\mathsterling	ℎ	U+210F	\hbar*
§	U+00A7	\mathsection	ℏ	U+210F	\hslash
¬	U+00AC	\neg, \lnot	ℑ	U+2111	\Im
¶	U+00B6	\mathparagraph	ℓ	U+2113	\ell
ð	U+00F0	\eth	℘	U+2118	\wp
Z	U+01B5	\Zbar*	℞	U+211C	\Re
ƒ	U+03DD	\digamma	ℴ	U+2127	\mho
κ	U+03F0	\varkappa	ı	U+2129	\turnediota
ε	U+03F6	\backepsilon	Å	U+212B	\Angstrom
ε	U+03F6	\upbackepsilon	‡	U+2132	\Finv
..	U+2025	\enleadertwodots	ℵ	U+2135	\aleph
...	U+2026	\mathellipsis	⋈	U+2136	\beth
′	U+2032	\prime	λ	U+2137	\gimel
″	U+2033	\dprime	⋈	U+2138	\daleth
‴	U+2034	\trprime	⊙	U+2141	\Game*
‵	U+2035	\backprime	⋈	U+2142	\sansLturned*
∖	U+2036	\backdprime	⋈	U+2143	\sansLmirrored*
∕	U+2037	\backtrprime	⋈	U+2144	\Yup*
^	U+2038	\caretinsert			

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	U+21B8 \barovernorthwestarrow		U+2332 \conictaper*
	U+21B9 \barleftarrowrightarrowbar		U+2336 \topbot
	U+21BA \acwopencirclearrow		U+2340 \APLnotbackslash*
	U+21BB \cwopencirclearrow		U+2353 \APLboxupcaret*
	U+21DE \nHuparrow*		U+2370 \APLboxquestion*
	U+21DF \nHdownarrow*		U+237C \rangledownzigzagarrow*
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	U+21E1 \updasharrow*		U+23B6 \bbrktbrk
	U+21E2 \rightdasharrow*		U+23CE \varcarriagereturn*
	U+21E3 \downdasharrow*		U+23E0 \obrbrak
	U+21E6 \leftwhitearrow		U+23E1 \ubrbrak
	U+21E7 \upwhitearrow		U+23E2 \trapezium*
	U+21E8 \rightwhitearrow		U+23E3 \benzenr*
	U+21E9 \downwhitearrow		U+23E4 \strns*
	U+21EA \whitearrowupfrombar		U+23E5 \fltns*
	U+2200 \forall		U+23E6 \accurrent*
	U+2201 \complement		U+23E7 \elinters*
	U+2203 \exists		U+2423 \mathvisiblespace
	U+2204 \nexists		U+24C7 \circledR
	U+2205 \varnothing		U+24C8 \circledS
	U+2205 \emptyset		U+25A0 \mdlgblsquare*, \blacksquare
	U+2206 \Delta		U+25A1 \mdlgwhtsquare*, \square, \Box
	U+220E \blacksquare		U+25A2 \squoval*
	U+221E \infty		U+25A3 \blackinwhitesquare*
	U+221F \Lsh		U+25A4 \squarehfill*
	U+2220 \angle		U+25A5 \squarevfill*
	U+2221 \measuredangle		U+25A6 \squarehvfill*
	U+2222 \sphericalangle		U+25A7 \squarenwsewfill*
	U+2234 \therefore		U+25A8 \squareneswfill*
	U+2235 \because		U+25A9 \squarecrossfill*
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	U+22A5 \bot		U+25AC \hrectangleblack*
	U+22B9 \dagger		U+25AD \hrectangle*
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	U+22BF \vartriangleleft		U+25AF \vrectangle*
	U+22EF \cdots		U+25B0 \parallelogramblack*
	U+2300 \oslash		U+25B1 \parallelogram*
	U+2302 \house		U+25B2 \bigblacktriangleup*
	U+2310 \neg		U+25B4 \blacktriangle*
	U+2311 \sqlozenge*		U+25B6 \blacktriangleright*
	U+2312 \curvearrowright		U+25B8 \smallblacktriangleright*

▷	U+25B9 \smalltriangleright*	■	U+25E8 \squarerightblack*
▶	U+25BA \blackpointerright*	◼	U+25E9 \squareulblack*
▷	U+25BB \whitepointerright*	◼	U+25EA \squarelrblack*
▼	U+25BC \bigblacktriangledown*	△	U+25EC \triangleleftdot
▽	U+25BD \bigtriangledown	▲	U+25ED \triangleleftblack*
▼	U+25BE \blacktriangledown*	▲	U+25EE \trianglerightblack*
▽	U+25BF \triangledown*	○	U+25EF \lgwhtcircle*
◀	U+25C0 \blacktriangleleft*	◻	U+25F0 \squareulquad*
◀	U+25C2 \smallblacktriangleleft*	◻	U+25F1 \squarellquad*
◀	U+25C3 \smalltriangleleft*	◻	U+25F2 \squarelrquad*
◀	U+25C4 \blackpointerleft*	◻	U+25F3 \squareurquad*
◀	U+25C5 \whitepointerleft*	⊖	U+25F4 \circleulquad*
◆	U+25C6 \mdlgblkdiamond*	⊕	U+25F5 \circlellquad*
◇	U+25C7 \mdlgwhtdiamond*	⊕	U+25F6 \circlelrquad*
◈	U+25C8 \blackinwhitediamond*	⊖	U+25F7 \circleurquad*
◎	U+25C9 \fisheye*	▽	U+25F8 \ultriangle*
◇	U+25CA \mdlgwhtlozenge, \lozenge, \Diamond	▾	U+25F9 \urtriangle*
⊙	U+25CC \dottedcircle*	▿	U+25FA \lltriangle*
◉	U+25CD \circlevertfill*	◻	U+25FB \mdwhtsquare*
◎	U+25CE \bullseye*	■	U+25FC \mdblksquare*
●	U+25CF \mdlgblkcircle*	◻	U+25FD \mdsmwhtsquare*
◐	U+25D0 \circlelefthalfblack*	■	U+25FE \mdsmbksquare*
◑	U+25D1 \cirlerrighthalfblack*	▵	U+25FF \lrtriangle*
◒	U+25D2 \circlebottomhalfblack*	★	U+2605 \bigstar*
◓	U+25D3 \cirtophalfblack*	☆	U+2606 \bigwhitestar*
◔	U+25D4 \circleurquadblack*	☉	U+2609 \astrosun
◕	U+25D5 \blackcircleulquadwhite*	⚠	U+2621 \danger
◖	U+25D6 \blacklefthalfcircle*	☺	U+263B \blacksmiley
◗	U+25D7 \blackrighthalfcircle*	☼	U+263C \sun
◘	U+25D8 \inversebullet*	☾	U+263D \rightmoon
◙	U+25D9 \inversewhitecircle*	☾	U+263E \leftmoon
◚	U+25DA \invwhiteupperhalfcircle*	♀	U+2640 \female
◛	U+25DB \invwhitelowerhalfcircle*	♂	U+2642 \male
⤿	U+25DC \ularc*	♠	U+2660 \spadesuit*
⤾	U+25DD \urarc*	♥	U+2661 \heartsuit*
⤽	U+25DE \lrarc*	◇	U+2662 \diamondsuit*
⤼	U+25DF \llarc*	♣	U+2663 \clubsuit*
⤾	U+25E0 \topsemicircle*	♠	U+2664 \varspadesuit
⤿	U+25E1 \botsemicircle*	♥	U+2665 \varheartsuit
▲	U+25E2 \lrblacktriangle*	◆	U+2666 \vardiamondsuit
▲	U+25E3 \llblacktriangle*	♣	U+2667 \varclubsuit
▲	U+25E4 \ulblacktriangle*	♪	U+2669 \quarternote
▲	U+25E5 \urblacktriangle*	♪	U+266A \eighthnote
○	U+25E6 \circ, \smwhtcircle	♪	U+266B \twonotes
◻	U+25E7 \squareleftblack*	♭	U+266D \flat
		♮	U+266E \natural

#	U+266F \sharp	⦿	U+299E \angles*
⊗	U+267E \acidfree*	∠	U+299F \angdnr*
▣	U+2680 \dicei	▷	U+29A0 \gtlpar*
▢	U+2681 \diceii	∇	U+29A1 \sphericalangleup*
▣	U+2682 \diceiii	∩	U+29A2 \turnangle*
▣	U+2683 \diceiv	∟	U+29A3 \revangle*
▣	U+2684 \dicev	≤	U+29A4 \angleubar*
▣	U+2685 \dicevi	≥	U+29A5 \revangleubar*
⊙	U+2686 \circledrightdot	∟	U+29A6 \wideangledown*
⊙	U+2687 \circledtwodots	∟	U+29A7 \wideangleup*
●	U+2688 \blackcircledrightdot	∟	U+29A8 \measanglerutone*
●	U+2689 \blackcircledtwodots	∟	U+29A9 \measanglerutonw*
♀	U+26A5 \Hermaphrodite	∟	U+29AA \measanglerdtose*
○	U+26AA \mdwhtcircle	∟	U+29AB \measangleldtosw*
●	U+26AB \mdblkcircle	∟	U+29AC \measangleurtone*
○	U+26AC \mdsmwhtcircle	∟	U+29AD \measangleultonw*
♀	U+26B2 \neuter	∟	U+29AE \measanglerdtose*
✓	U+2713 \checkmark	∟	U+29AF \measangleldtosw*
✠	U+2720 \maltese	∅	U+29B0 \reemptyset*
★	U+272A \circledstar	∅	U+29B1 \emptysetobar*
*	U+2736 \varstar	∅	U+29B2 \emptysetocirc*
*	U+273D \dingasterisk	∅	U+29B3 \emptysetoarr*
➤	U+279B \draftingarrow*	∅	U+29B4 \emptysetoarrl*
∟	U+27C0 \threeangle*	⊕	U+29BA \obot*
△	U+27C1 \whiteinwhitetrangle*	⊗	U+29BB \olcross*
⊆	U+27C3 \subsetcirc*	⊗	U+29BC \odotslashdot*
⊇	U+27C4 \supsetcirc*	⬆	U+29BD \uparrowoncircle*
/	U+27CB \diagup*	⊙	U+29BE \circledwhitebullet*
\	U+27CD \diagdown*	●	U+29BF \circledbullet*
◇	U+27D0 \diamondcdot*	○	U+29C2 \cirscir*
✕	U+292B \rdiagovfdiag*	○	U+29C3 \cirE*
✕	U+292C \fdiagovrdiag*	☐	U+29C9 \boxonbox*
↗	U+292D \seovnearrow*	△	U+29CA \triangleodot*
↘	U+292E \neovsearrow*	△	U+29CB \triangleubar*
↗	U+292F \fdiagovnearrow*	△	U+29CC \triangles*
↘	U+2930 \rdiagovsearrow*	∞	U+29DC \iinfin*
↗	U+2931 \neovnearrow*	∞	U+29DD \tieinfy*
↗	U+2932 \nwovnearrow*	♯	U+29DE \nvinfy*
↗	U+2934 \uprightcurvearrow*	□	U+29E0 \laplac*
↘	U+2935 \downrightcurvedarrow*	‡	U+29E7 \thermod*
●	U+2981 \mdsmbkcircle*	▼	U+29E8 \downtriangleleftblack*
⋮	U+2999 \fourvdots*	▼	U+29E9 \downtrianglerightblack*
⋈	U+299A \vzigzag*	◆	U+29EA \blackdiamonddownarrow*
∟	U+299B \measuredangleleft*	◆	U+29EB \blacklozenge
⊥	U+299C \rightanglesqr*	♀	U+29EC \circledownarrow*
⊥	U+299D \rightanglemdot*	●	U+29ED \blackcircledownarrow*



	U+29EE \errbarsquare*		U+2B22 \varhexagonblack
	U+29EF \errbarblacksquare*		U+2B23 \hexagonblack
	U+29F0 \errbardiamond*		U+2B24 \lgblkcircle
	U+29F1 \errbarblackdiamond*		U+2B25 \mdblkdiamond
	U+29F2 \errbarcircle*		U+2B26 \mdwhtdiamond
	U+29F3 \errbarblackcircle*		U+2B27 \mdblklozenge
	U+2AE1 \perps		U+2B28 \mdwhtlozenge
	U+2AF1 \topcir		U+2B29 \smbldiamond
	U+2B12 \squaretopblack		U+2B2A \smblozenge
	U+2B13 \squarebotblack		U+2B2B \smwhtlozenge
	U+2B14 \squareurblack		U+2B2C \blkhorzoval
	U+2B15 \squareellblack		U+2B2D \whthorzoval
	U+2B16 \diamondleftblack		U+2B2E \blkvertoval
	U+2B17 \diamondrightblack		U+2B2F \whtvertoval
	U+2B18 \diamondtopblack		U+2B50 \medwhitestar
	U+2B19 \diamondbotblack		U+2B51 \medblackstar
	U+2B1A \dottedsquare		U+2B52 \smwhitestar
	U+2B1B \lgblksquare		U+2B53 \rightpentagonblack
	U+2B1C \lgwhtsquare		U+2B54 \rightpentagon
	U+2B1D \vysmblksquare		U+3012 \postalmark
	U+2B1E \vysmwhtsquare		U+3030 \hzigzag
	U+2B1F \pentagonblack		U+1D55C\Bbbk
	U+2B20 \pentagon		U+XXXX \bracevert*
	U+2B21 \varhexagon		

### 5.3 Binary operators

+	U+002B +	∩	U+2229 \cap
±	U+00B1 \pm	∪	U+222A \cup
·	U+00B7 \cdot, \centerdot	÷	U+2238 \dotminus
×	U+00D7 \times	≈	U+223E \invlazys
÷	U+00F7 \div	ℳ	U+2240 \wr
†	U+2020 \dagger	↵	U+228C \cupleftarrow
‡	U+2021 \ddagger	∩	U+228D \cupdot
•	U+2022 \smblkcicle	⊕	U+228E \uplus
/	U+2044 \fracslash	∏	U+2293 \sqcap
∅	U+214B \upand	∏	U+2294 \sqcup
−	U+002D -	⊕	U+2295 \oplus
∓	U+2213 \mp	⊖	U+2296 \ominus
‡	U+2214 \dotplus	⊗	U+2297 \otimes
∖	U+2216 \smallsetminus	⊘	U+2298 \oslash
*	U+2217 \ast	⊙	U+2299 \odot
◦	U+2218 \vysmwhtcircle	⊚	U+229A \circledcirc
•	U+2219 \vysmblkcicle, \bullet	⊛	U+229B \circledast
∧	U+2227 \wedge, \land	⊜	U+229C \circledequal
∨	U+2228 \vee, \lor	⊝	U+229D \circleddash

⊞	U+229E	\boxplus	⊠	U+29C4	\boxdiag
⊟	U+229F	\boxminus	⊡	U+29C5	\boxbslash
⊠	U+22A0	\boxtimes	⊛	U+29C6	\boxast
⊡	U+22A1	\boxdot	⊜	U+29C7	\boxcircle
⊢	U+22BA	\intercal	⊝	U+29C8	\boxbox*
∨	U+22BB	\veebar	△	U+29CD	\triangleserifs*
⌒	U+22BC	\barwedge	⌚	U+29D6	\hourglass*
∇	U+22BD	\barvee	⌛	U+29D7	\blackhourglass*
◇	U+22C4	\diamond, \smwhtdiamond	♠	U+29E2	\shuffle*
⋅	U+22C5	\cdot*	♣	U+29EB	\mdlgblklozenge*
★	U+22C6	\star	\	U+29F5	\setminus*
✳	U+22C7	\divideontimes	/	U+29F6	\dsol*
⌘	U+22C9	\ltimes	\	U+29F7	\rsolbar*
⌘	U+22CA	\rtimes	+	U+29FA	\doubleplus*
↗	U+22CB	\leftthreetimes	≡	U+29FB	\tripleplus*
↘	U+22CC	\rightthreetimes	+	U+29FE	\tplus*
∪	U+22CE	\curlyvee	-	U+29FF	\tminus*
∩	U+22CF	\curlywedge	⊕	U+2A22	\ringplus
∩	U+22D2	\Cap, \doublecap	⊕	U+2A23	\plushat
∪	U+22D3	\Cup, \doublecup	⊖	U+2A24	\simplus
⌒	U+2305	\varbarwedge*	+	U+2A25	\plusdot
⌒	U+2306	\vardoublebarwedge*	+	U+2A26	\plussim
⊕	U+233D	\obar	+	U+2A27	\plussubtwo
△	U+25B3	\triangle, \bigtriangleup	+	U+2A28	\plustrif*
◁	U+22B2	\lhd	+	U+2A29	\commaminus*
▷	U+22B3	\rhd	-	U+2A2A	\minusdot
◁	U+22B4	\unlhd	-	U+2A2B	\minusfdots
▷	U+22B5	\unrhd	-	U+2A2C	\minusrdots*
○	U+25CB	\mdlgwhtcircle*	⊕	U+2A2D	\opluslhrim*
▭	U+25EB	\boxbar*	⊕	U+2A2E	\oplusrhrim*
∨	U+27C7	\veedot*	×	U+2A2F	\vectimes*
∧	U+27D1	\wedgedot*	×	U+2A30	\dottimes
◇	U+27E0	\lozengeminus*	×	U+2A31	\timesbar
◇	U+27E1	\concavediamond*	×	U+2A32	\btimes
◇	U+27E2	\concavediamondtickleft*	×	U+2A33	\smashtimes*
◇	U+27E3	\concavediamondtickright*	⊗	U+2A34	\otimeslhrim*
◻	U+27E4	\whitesquaretickleft*	⊗	U+2A35	\otimesrhrim*
◻	U+27E5	\whitesquaretickright*	⊗	U+2A36	\otimeshat*
⋮	U+2982	\typecolon*	⊗	U+2A37	\otimes*
⊖	U+29B5	\circlehbar*	⊕	U+2A38	\odiv*
⊕	U+29B6	\circledvert	⊕	U+2A39	\triangleplus*
⊕	U+29B7	\circledparallel	△	U+2A3A	\triangleminus*
⊖	U+29B8	\obslash	△	U+2A3B	\triangleretimes*
⊕	U+29B9	\operp*	⌒	U+2A3C	\intprod*
⊖	U+29C0	\olessthan	⌒	U+2A3D	\intprodr*
⊕	U+29C1	\ogreaterthan	;	U+2A3E	\fcmp*

∏	U+2A3F	\amalg	∨	U+2A56	\veeonvee*
⊆	U+2A40	\capdot*	∕	U+2A57	\bigslopedvee*
⊖	U+2A41	\uminus*	∕	U+2A58	\bigslopedwedge*
∪	U+2A42	\barcup*	∧	U+2A5A	\wedgemidvert*
∩	U+2A43	\barcap*	∨	U+2A5B	\veemidvert*
⊂	U+2A44	\capwedge*	⋈	U+2A5C	\midbarwedge*
⊃	U+2A45	\cupvee*	⋈	U+2A5D	\midbarvee*
⊄	U+2A46	\cupovercap*	⌘	U+2A5E	\doublebarwedge
⊅	U+2A47	\capovercup*	△	U+2A5F	\wedgebar*
⊆	U+2A48	\cupbarcap*	△	U+2A60	\wedgedoublebar*
⊇	U+2A49	\capbarcup*	⋖	U+2A61	\varveebar*
⊈	U+2A4A	\twocups*	∇	U+2A62	\doublebarvee*
⊉	U+2A4B	\twocaps*	∇	U+2A63	\veedoublebar
⊊	U+2A4C	\closedvarcup*	∇	U+2A64	\dsub*
⊋	U+2A4D	\closedvarcap*	∇	U+2A65	\rsub*
⊌	U+2A4E	\sqcap*	⊕	U+2A71	\eqqplus
⊍	U+2A4F	\sqcup*	⊕	U+2A72	\pluseqq
⊎	U+2A50	\closedvarcupsmashprod*	⊕	U+2AF4	\interleave
∧	U+2A51	\wedgeodot*	⊕	U+2AF5	\nhVvert
∨	U+2A52	\veeodot*	:	U+2AF6	\threedotcolon
⋈	U+2A53	\Wedge*	///	U+2AFB	\trslash
∨	U+2A54	\Vee*	//	U+2AFD	\sslash
⋈	U+2A55	\wedgeonwedge*	∏	U+2AFE	\talloblong

## 5.4 Relations

*	U+002A	*, \ast	↵	U+219C	\leftwvearrow
:	U+003A	:	↶	U+219D	\rightwvearrow
<	U+003C	<, \less	↵	U+219E	\twoheadleftarrow
=	U+003D	=, \equal	↶	U+219F	\twoheaduparrow
>	U+003E	>, \greater	↷	U+21A0	\twoheadrightarrow
⊂	U+2050	\closure*	↵	U+21A1	\twoheaddownarrow
	U+20D2	\vertoverlay	↶	U+21A2	\leftarrowtail
←	U+2190	\leftarrow, \gets	↷	U+21A3	\rightarrowtail
↑	U+2191	\uparrow	↶	U+21A4	\mapsfrom
→	U+2192	\rightarrow, \to	↑	U+21A5	\mapsup
↓	U+2193	\downarrow	↷	U+21A6	\mapsto
↔	U+2194	\leftrightharrow	↓	U+21A7	\mapsdown
↕	U+2195	\updownarrow	↶	U+21A9	\hookleftarrow
↗	U+2196	\nwarrow	↷	U+21AA	\hookrightarrow
↘	U+2197	\nearrow	↶	U+21AB	\looparrowleft
↙	U+2198	\searrow	↷	U+21AC	\looparrowright
↖	U+2199	\swarrow	↶↷	U+21AD	\leftrightsquigarrow
↤	U+219A	\nleftarrow	↶↷	U+21AE	\nleftrightharrow
↦	U+219B	\nrightrightarrow	↶↷	U+21AF	\downzigzagarrow

↵	U+21B0	\Lsh	⇒	U+21F6	\rightthreearrows*
↶	U+21B1	\Rsh	⇐	U+21F7	\nleftarrow*
↷	U+21B2	\Ldsh	→	U+21F8	\nvrightarrow*
↸	U+21B3	\Rdsh	⇔	U+21F9	\nvleftrightarrow*
↶	U+21B6	\curvearrowleft	⇐	U+21FA	\nVleftarrow*
↷	U+21B7	\curvearrowright	⇒	U+21FB	\nVrightarrow*
↶	U+21BA	\circlearrowleft	⇔	U+21FC	\nVleftrightarrow*
↷	U+21BB	\circlearrowright	←	U+21FD	\leftarrowtriangle*
↶	U+21BC	\leftharpoonup	→	U+21FE	\rightarrowtriangle*
↷	U+21BD	\leftharpoondown	⇔	U+21FF	\leftrightharrowtriangle*
↶	U+21BE	\upharpoonright,\restriction	∈	U+2208	\in
↷	U+21BF	\upharpoonleft	∉	U+2209	\notin
↶	U+21C0	\rightharpoonup	∈	U+220A	\smallin
↷	U+21C1	\rightharpoondown	∋	U+220B	\ni,\owns
↶	U+21C2	\downharpoonright	∄	U+220C	\nni
↷	U+21C3	\downharpoonleft	∋	U+220D	\smallni
↷	U+21C4	\rightleftarrows	α	U+221D	\propto
↷	U+21C5	\updownarrows	α	U+221D	\varpropto
↷	U+21C6	\leftrightarrows		U+2223	\mid
↷	U+21C7	\leftleftarrows		U+2223	\shortmid
↷	U+21C8	\upuparrows	†	U+2224	\nmid
↷	U+21C9	\rightrightarrows	‡	U+2224	\nshortmid*
↷	U+21CA	\downdownarrows		U+2225	\parallel
↷	U+21CB	\leftrightharpoons		U+2225	\shortparallel*
↷	U+21CC	\rightleftharpoons		U+2226	\nparallel
↷	U+21CD	\nLeftarrow	#	U+2226	\nshortparallel*
↷	U+21CE	\nLeftrightarrow	::	U+2237	\Colon
↷	U+21CF	\nRrightarrow	-:	U+2239	\dashcolon
↷	U+21D0	\Leftarrow	::	U+223A	\dotsminusdots
↷	U+21D1	\Uparrow	≈	U+223B	\kernelcontraction
↷	U+21D2	\Rrightarrow	~	U+223C	\sim
↷	U+21D3	\Downarrow	~	U+223C	\thicksim
↷	U+21D4	\Leftrightarrow	~	U+223D	\backsim
↷	U+21D5	\Updownarrow	≈	U+2241	\nsim
↷	U+21D6	\Nwarrow	≈	U+2242	\eqsim
↷	U+21D7	\Nearrow	≈	U+2243	\simeq
↷	U+21D8	\Searrow	≈	U+2244	\nsime
↷	U+21D9	\Swarrow	≈	U+2245	\cong
↷	U+21DA	\Lleftarrow*	≈	U+2246	\simneqq
↷	U+21DB	\Rrightarrow*	≈	U+2247	\ncong
↷	U+21DC	\leftsquigarrow	≈	U+2248	\approx
↷	U+21DD	\rightsquigarrow,\leadsto	≈	U+2248	\thickapprox
↷	U+21E4	\barleftarrow*	≈	U+2249	\napprox
↷	U+21E5	\barrightarrow*	≈	U+224A	\approxeq
↷	U+21F4	\circleonrightarrow*	≈	U+224B	\approxident
↷	U+21F5	\downuparrows	≈	U+224C	\backcong

U+224D	\asympt	U+2279	\ngtrless
U+224E	\Bumpeq	U+227A	\prec
U+224F	\bumpeq	U+227B	\succ
U+2250	\doteq	U+227C	\preccurlyeq
U+2251	\Doteq, \doteqdot	U+227D	\succcurlyeq
U+2252	\fallingdotseq	U+227E	\precsim
U+2253	\risingdotseq	U+227F	\succsim
U+2254	\coloneq	U+2280	\nprec
U+2255	\eqcolon	U+2281	\nsucc
U+2256	\eqcirc	U+2282	\subset
U+2257	\circeq	U+2283	\supset
U+2258	\arceq	U+2284	\nsubset
U+2259	\wedgeq	U+2285	\nsupset
U+225A	\veeeq	U+2286	\subseteq
U+225B	\stareq	U+2287	\supseteq
U+225C	\triangleq	U+2288	\nsubseteq
U+225D	\eqdef	U+2289	\nsupseteq
U+225E	\measeq	U+228A	\subsetneq
U+225F	\questeq	U+228A	\varsubsetneq*
U+2260	\ne, \neq	U+228B	\supsetneq
U+2261	\equiv	U+228B	\varsupsetneq*
U+2262	\nequiv	U+228F	\sqsubset
U+2263	\Equiv	U+2290	\sqsupset
U+2264	\leq, \le	U+2291	\sqsubseteq
U+2265	\geq, \ge	U+2292	\sqsupseteq
U+2266	\leqq	U+22A2	\vdash
U+2267	\geqq	U+22A3	\dashv
U+2268	\lneqq	U+22A6	\assert
U+2268	\lvertneqq	U+22A7	\models
U+2269	\gneqq	U+22A8	\vDash
U+2269	\gvertneqq	U+22A9	\Vdash
U+226A	\ll	U+22AA	\Vdash
U+226B	\gg	U+22AB	\VDash
U+226C	\between	U+22AC	\nvdash
U+226D	\nasymp	U+22AD	\nvDash
U+226E	\nless	U+22AE	\nVdash
U+226F	\ngtr	U+22AF	\nVDash
U+2270	\nleq	U+22B0	\prurel
U+2271	\ngeq	U+22B1	\scurel
U+2272	\lesssim	U+22B2	\vartriangleleft
U+2273	\gtrsim	U+22B3	\vartriangleright
U+2274	\nlesssim	U+22B4	\trianglelefteq
U+2275	\ngtrsim	U+22B5	\trianglerighteq
U+2276	\lessgtr	U+22B6	\origof
U+2277	\gtrless	U+22B7	\imageof
U+2278	\nlessgtr	U+22B8	\multimap

☞	U+22C8	\bowtie	☐	U+22FF	\bagmember*
⋞	U+22CD	\backsimeq	⋀	U+2322	\frown
⊆	U+22D0	\Subset	⋁	U+2322	\smallfrown*
⊇	U+22D1	\Supset	☺	U+2323	\smile
⚔	U+22D4	\pitchfork	☺	U+2323	\smallsmile*
≡	U+22D5	\equalparallel	⚡	U+233F	\APLnotslash
⋖	U+22D6	\lessdot	△	U+25B5	\vartriangle*
⋗	U+22D7	\gtrdot	⊥	U+27C2	\perp*
⋘	U+22D8	\lll,\llless	⊂	U+27C8	\bsolhsb
⋙	U+22D9	\ggg,\gggtr	⊃	U+27C9	\suphsol
⋚	U+22DA	\lesseqgtr	⊷	U+27D2	\upin*
⋛	U+22DB	\gtreqless	⌊	U+27D3	\pullback*
⋜	U+22DC	\eqless	⌋	U+27D4	\pushout*
⋝	U+22DD	\eqgtr	≠	U+27DA	\DashVDash*
⋞	U+22DE	\curlyeqprec	⊥	U+27DB	\dashVdash*
⋟	U+22DF	\curlyeqsucc	⊖	U+27DC	\multimapinv*
⋠	U+22E0	\nprec curlyeq	⊔	U+27DD	\vlongdash*
⋡	U+22E1	\nsucc curlyeq	⊔	U+27DE	\longdashv*
⋢	U+22E2	\nsqsubseteq	⊖	U+27DF	\cirbot*
⋣	U+22E3	\nsqsupseteq	⊕	U+27F0	\Uparrow*
⋤	U+22E4	\sqsubsetneq*	⊕	U+27F1	\Downarrow*
⋥	U+22E5	\sqsupsetneq*	⊖	U+27F2	\acwgapcirclearrow*
⋦	U+22E6	\lnsim	⊖	U+27F3	\cwgapcirclearrow*
⋧	U+22E7	\gnsim	⊕	U+27F4	\rightarrowonoplus*
⋨	U+22E8	\prec sim	←	U+27F5	\longleftarrow*
⋩	U+22E9	\succ sim	→	U+27F6	\longrightarrow*
⋪	U+22EA	\nvartriangleleft	↔	U+27F7	\longleftrightarrow*
⋫	U+22EB	\nvartriangleright	⇐	U+27F8	\Longleftarrow*
⋬	U+22EC	\ntrianglelefteq	⇒	U+27F9	\Longrightarrow*
⋭	U+22ED	\ntrianglerighteq	⇔	U+27FA	\Longleftrightarrow*
⋮	U+22EE	\vdots	↵	U+27FB	\longmapsfrom*
⋯	U+22F0	\adots	↶	U+27FC	\longmapsto*
⋰	U+22F1	\ddots	⇐	U+27FD	\Longmapsfrom*
⋱	U+22F2	\disin*	⇒	U+27FE	\Longmapsto*
⋲	U+22F3	\varisins*	↷	U+27FF	\longrightsquigarrow*
⋳	U+22F4	\isins*	⇒	U+2900	\nvtwoheadrightarrow*
⋴	U+22F5	\isindot*	⇒	U+2901	\nVtwoheadrightarrow*
⋵	U+22F6	\varisinobar	⇐	U+2902	\nvLeftarrow*
⋶	U+22F7	\isinobar*	⇒	U+2903	\nvRightarrow*
⋷	U+22F8	\isinvb*	⇐	U+2904	\nvLeftrightarrow*
⋸	U+22F9	\isinE*	⇒	U+2905	\twoheadmapsto*
⋹	U+22FA	\nisd*	⇐	U+2906	\Mapsfrom*
⋺	U+22FB	\varnis*	⇒	U+2907	\Mapsto*
⋻	U+22FC	\nis*	‡	U+2908	\downarrowbarred*
⋼	U+22FD	\varniobar	‡	U+2909	\uparrowbarred*
⋽	U+22FE	\niobar*	⊕	U+290A	\Uparrow*

⇓	U+290B \Ddownarrow*	↔	U+2943 \leftarrowshortrightarrow*
←-	U+290C \leftbkarrow*	↔	U+2944 \shortrightarrowleftarrow*
→	U+290D \rightbkarrow*	↦	U+2945 \rightarrowplus*
←-	U+290E \leftdbkarrow*, \dashleftarrow	↦	U+2946 \leftarrowplus*
→	U+290F \dbkarrow*, \dashrightarrow	↗	U+2947 \rightarrowx*
↗	U+2910 \drbkarrow*	↻	U+2948 \leftrightarrowcircle*
→	U+2911 \rightdotarrow*	⤴	U+2949 \twoheaduparrowcircle*
↑	U+2912 \baruparrow*	↔	U+294A \leftrightharpoonupdown*
↓	U+2913 \downarrowbar*	↔	U+294B \leftrightharpoondownup*
↗	U+2914 \nvrightarrowtail*	↕	U+294C \updownharpoonrightleft*
↘	U+2915 \nVrightarrowtail*	↕	U+294D \updownharpoonleftright*
↗	U+2916 \twoheadrightarrowtail*	↔	U+294E \leftrightharpoonupup*
↘	U+2917 \nvtwoheadrightarrowtail*	↔	U+294F \updownharpoonrightright*
↘	U+2918 \nVtwoheadrightarrowtail*	↔	U+2950 \leftrightharpoondowndown*
└	U+2919 \lefttail*	↕	U+2951 \updownharpoonleftleft*
└	U+291A \righttail*	┌	U+2952 \barleftharpoonup*
└	U+291B \leftdbltail*	└	U+2953 \rightharpoonupbar*
└	U+291C \rightdbltail*	└	U+2954 \barupharpoonright*
↖	U+291D \diamondleftarrow*	└	U+2955 \downharpoonrightbar*
↗	U+291E \rightarrowdiamond*	└	U+2956 \barleftharpoondown*
↖	U+291F \diamondleftarrowbar*	└	U+2957 \rightharpoondownbar*
↗	U+2920 \barrightarrowdiamond*	└	U+2958 \barupharpoonleft*
↖	U+2921 \nwsearrow*	└	U+2959 \downharpoonleftbar*
↖	U+2922 \neswarrow*	└	U+295A \leftharpoonupbar*
↖	U+2923 \hkswarrow*	└	U+295B \barrightharpoonup*
↖	U+2924 \hknearrow*	└	U+295C \upharpoonrightbar*
↖	U+2925 \hksearrow*	└	U+295D \bardownharpoonright*
↖	U+2926 \hkswarrow*	└	U+295E \leftharpoondownbar*
✕	U+2927 \tona*	└	U+295F \barrightharpoondown*
✕	U+2928 \toea*	└	U+2960 \upharpoonleftbar*
✕	U+2929 \tosa*	└	U+2961 \bardownharpoonleft*
✕	U+292A \towa*	⇐	U+2962 \leftharpoonsupdown*
↷	U+2933 \rightcurvedarrow*	⇐	U+2963 \upharpoonsleftright*
↶	U+2936 \leftdowncurvedarrow*	⇒	U+2964 \rightharpoonsupdown*
↷	U+2937 \rightdowncurvedarrow*	⇓	U+2965 \downharpoonsleftright*
↷	U+2938 \cwrightarcarrow*	⇐	U+2966 \leftrightharpoonsup*
↷	U+2939 \acwleftarcarrow*	⇐	U+2967 \leftrightharpoonsdown*
↷	U+293A \acwoverarcarrow*	⇐	U+2968 \rightleftharpoonsup*
↷	U+293B \acwunderarcarrow*	⇐	U+2969 \rightleftharpoonsdown*
↷	U+293C \curvearrowrightminus*	⇐	U+296A \leftharpoonupdash*
↷	U+293D \curvearrowleftplus*	⇐	U+296B \dashleftharpoondown*
↷	U+293E \cwundercurvearrow*	⇐	U+296C \rightharpoonupdash*
↷	U+293F \ccwundercurvearrow*	⇒	U+296D \dashrightarrowdown*
○	U+2940 \acwcirclearrow*	⇓	U+296E \updownharpoonsleftright*
○	U+2941 \cwcirclearrow*	⇓	U+296F \downupharpoonsleftright*
↗	U+2942 \rightarrowshortleftarrow*	=	U+2970 \rightimply*

$\Rightarrow$	U+2971	\equalrightarrow*	$\ddot{=}$	U+2A77	\ddot{=}
$\rightarrow$	U+2972	\similarrightarrow*	$\equiv$	U+2A78	\equiv
$\leftarrow$	U+2973	\leftarrowsimilar*	$\triangleleft$	U+2A79	\triangleleft
$\rightsquigarrow$	U+2974	\rightarrowsimilar*	$\triangleright$	U+2A7A	\triangleright
$\approx$	U+2975	\rightarrowapprox*	$\gtrsim$	U+2A7B	\gtrsim
$\leftarrow$	U+2976	\larr*	$\lesssim$	U+2A7C	\lesssim
$\leftarrow$	U+2977	\leftarrowless*	$\leqslant$	U+2A7D	\leqslant
$\leftarrow$	U+2978	\gtrarr*	$\geqslant$	U+2A7E	\geqslant
$\subset$	U+2979	\subrarr*	$\lesdot$	U+2A7F	\lesdot
$\subset$	U+297A	\leftarrowsubset*	$\gesdot$	U+2A80	\gesdot
$\supset$	U+297B	\suplarr*	$\lesdoto$	U+2A81	\lesdoto
$\dashrightarrow$	U+297C	\leftfishtail*	$\gesdoto$	U+2A82	\gesdoto
$\dashrightarrow$	U+297D	\rightfishtail*	$\lesdotor$	U+2A83	\lesdotor
$\dashrightarrow$	U+297E	\upfishtail*	$\gesdotol$	U+2A84	\gesdotol
$\dashrightarrow$	U+297F	\downfishtail*	$\lessapprox$	U+2A85	\lessapprox*
$\triangleleft$	U+29CE	\rtriltri*	$\gtrapprox$	U+2A86	\gtrapprox*
$\triangleleft$	U+29CF	\ltrivb*	$\neq$	U+2A87	\neq
$\triangleright$	U+29D0	\vbrtri*	$\gneq$	U+2A88	\gneq
$\bowtie$	U+29D1	\lfbowtie*	$\lnapprox$	U+2A89	\lnapprox
$\bowtie$	U+29D2	\rfbowtie*	$\gnapprox$	U+2A8A	\gnapprox
$\bowtie$	U+29D3	\fbowtie*	$\lesseqgtr$	U+2A8B	\lesseqgtr*
$\bowtie$	U+29D4	\lftimes*	$\gtreqqlless$	U+2A8C	\gtreqqlless*
$\bowtie$	U+29D5	\rftimes*	$\lsime$	U+2A8D	\lsime*
$\circ$	U+29DF	\dualmap*	$\gsime$	U+2A8E	\gsime*
$\triangleleft$	U+29E1	\lrtriangleeq*	$\lsimg$	U+2A8F	\lsimg*
$\#$	U+29E3	\eparsl*	$\gsiml$	U+2A90	\gsiml*
$\#$	U+29E4	\smeparsl*	$\lgE$	U+2A91	\lgE*
$\#$	U+29E5	\eqvparsl*	$\glE$	U+2A92	\glE*
$\equiv$	U+29E6	\gleichstark*	$\lesges$	U+2A93	\lesges*
$\rightarrow$	U+29F4	\ruledelayed*	$\gesles$	U+2A94	\gesles*
$\times$	U+2A59	\veeonwedge*	$\eqslantless$	U+2A95	\eqslantless
$\equiv$	U+2A66	\eqdot	$\eqslantgtr$	U+2A96	\eqslantgtr
$\equiv$	U+2A67	\dotequiv	$\elsdot$	U+2A97	\elsdot*
$\equiv$	U+2A68	\equivVert*	$\egsdot$	U+2A98	\egsdot*
$\equiv$	U+2A69	\equivVvert*	$\eqqlless$	U+2A99	\eqqlless*
$\sim$	U+2A6A	\dotsim	$\eqqgtr$	U+2A9A	\eqqgtr*
$\sim$	U+2A6B	\simrdots*	$\eqqslantless$	U+2A9B	\eqqslantless*
$\approx$	U+2A6C	\siminussim*	$\eqqslantgtr$	U+2A9C	\eqqslantgtr*
$\cong$	U+2A6D	\congdot	$\simless$	U+2A9D	\simless
$\approx$	U+2A6E	\asteq	$\simgtr$	U+2A9E	\simgtr
$\approx$	U+2A6F	\hatapprox	$\simle$	U+2A9F	\simle*
$\approx$	U+2A70	\approxeqq	$\simE$	U+2AA0	\simE*
$\approx$	U+2A73	\eqqsim	$\simgE$	U+2AA1	\simgE*
$\equiv$	U+2A74	\Coloneq*	$\Lt$	U+2AA2	\Lt*
$\equiv$	U+2A75	\eqeq*	$\Gt$	U+2AA3	\Gt*
$\equiv$	U+2A76	\eqeqeq*	$\partial$	U+2AA3	\partialmeetcontraction*



⋈	U+2AA4	\glj*	⋈	U+2ACC	\varsupsetneqq*
⋉	U+2AA5	\gla*	⌊	U+2ACD	\lsqhook
⋊	U+2AA6	\ltcc*	⌋	U+2ACE	\rsqhook
⋋	U+2AA7	\gtcc*	⊖	U+2ACF	\csub
⋌	U+2AA8	\lescc*	⊗	U+2AD0	\csup
⋍	U+2AA9	\gescc*	⊘	U+2AD1	\csube
⋎	U+2AAA	\smt*	⊙	U+2AD2	\csupe
⋏	U+2AAB	\lat*	⊚	U+2AD3	\subsup
⋐	U+2AAC	\smt*	⊛	U+2AD4	\supsub
⋑	U+2AAD	\late*	⊜	U+2AD5	\subsub
⋒	U+2AAE	\bumpeq*	⊝	U+2AD6	\supsup
⋓	U+2AAF	\preceq	⊞	U+2AD7	\suphsub
⋔	U+XXXX	\npreceq*	⊟	U+2AD8	\supdsub
⋕	U+2AB0	\succeq	⊠	U+2AD9	\forkv
⋖	U+XXXX	\nsucceq*	⊡	U+2ADA	\topfork
⋗	U+2AB1	\precneq*	⊢	U+2ADB	\mlcp
⋘	U+2AB2	\succneq*	⊣	U+2ADC	\forks
⋙	U+2AB3	\preceqq*	⊤	U+2ADD	\forksnot
⋚	U+2AB4	\succeqq*	⊥	U+2ADE	\shortlefttack
⋛	U+2AB5	\precneqq*	⊦	U+2ADF	\shortdowntack
⋜	U+2AB6	\succneqq*	⊧	U+2AE0	\shortuptack
⋝	U+2AB7	\precapprox*	≡	U+2AE2	\vDdash
⋞	U+2AB8	\succapprox*	≣	U+2AE3	\dashV
⋟	U+2AB9	\precnapprox*	≤	U+2AE4	\Dashv
⋠	U+2ABA	\succnapprox*	≥	U+2AE5	\DashV
⋡	U+2ABB	\Prec*	≦	U+2AE6	\varVdash
⋢	U+2ABC	\Succ*	≧	U+2AE7	\Barv
⋣	U+2ABD	\subsetdot	≨	U+2AE8	\vBar
⋤	U+2ABE	\supsetdot	≩	U+2AE9	\vBarv
⋥	U+2ABF	\subsetplus*	⊞	U+2AEA	\barV
⋦	U+2AC0	\supsetplus*	⊚	U+2AEB	\Vbar
⋧	U+2AC1	\submult*	≡	U+2AEC	\Not
⋨	U+2AC2	\supmult*	≣	U+2AED	\bNot
⋩	U+2AC3	\subedot*	⋮	U+2AEE	\revnmid
⋪	U+2AC4	\supedot*	⋯	U+2AEF	\circmid
⋫	U+2AC5	\subseteqq	⋰	U+2AF0	\midcir
⋬	U+XXXX	\nsubseteqq*	⋱	U+2AF2	\nhpar
⋭	U+2AC6	\supseteqq	⋲	U+2AF3	\parsim
⋮	U+XXXX	\nsupseteqq*	⋳	U+2AF7	\lllnest
⋯	U+2AC7	\subsim*	⋴	U+2AF8	\gggnest
⋰	U+2AC8	\supsim*	⋵	U+2AF9	\leqqslant
⋱	U+2AC9	\subsetapprox*	⋶	U+2AFA	\geqqslant
⋲	U+2ACA	\supsetapprox*	⋷	U+2B30	\circleleftarrow*
⋳	U+2ACB	\subsetneqq	⋸	U+2B31	\leftthreearrows*
⋴	U+2ACB	\varsubsetneqq*	⋹	U+2B32	\leftarrowonoplus*
⋵	U+2ACC	\supsetneqq	⋺	U+2B33	\longleftsquigarrow*

↯	U+2B34	\nvtwoheadleftarrow*	↯	U+XXXX	\ngeqq
↯	U+2B35	\nVtwoheadleftarrow*	↯	U+XXXX	\ngeqslant
↯	U+2B36	\twoheadmapsfrom*	↯	U+XXXX	\nleqslant
↯	U+2B37	\twoheadleftdbkarrow*	↯	U+XXXX	\nleqq
↯	U+2B38	\leftdotarrow*	↯	U+XXXX	\ncongdot
↯	U+2B39	\nvleftarrowtail*	↯	U+XXXX	\napproxeq
↯	U+2B3A	\nVleftarrowtail*	↯	U+XXXX	\nll
↯	U+2B3B	\twoheadleftarrowtail*	↯	U+XXXX	\ngg
↯	U+2B3C	\nvtwoheadleftarrowtail*	↯	U+XXXX	\nsqsubset
↯	U+2B3D	\nVtwoheadleftarrowtail*	↯	U+XXXX	\nsqsupset
↯	U+2B3E	\leftarrow*	↯	U+XXXX	\nBumpeq
↯	U+2B3F	\leftcurvedarrow*	↯	U+XXXX	\nbumpeq
↯	U+2B40	\eqlleftarrow*	↯	U+XXXX	\neqsim
↯	U+2B41	\bsimilarleftarrow*	↯	U+XXXX	\nvarisinobar
↯	U+2B42	\leftarrowbackapprox*	↯	U+XXXX	\nvarniobar
↯	U+2B43	\rightarrowgtr*	↯	U+XXXX	\neqslantless
↯	U+2B44	\rightarrowsupset*	↯	U+XXXX	\neqslantgtr
↯	U+2B45	\Lleftarrow*	↯	U+XXXX	\lhook
↯	U+2B46	\Rrightarrow*	↯	U+XXXX	\rhook
↯	U+2B47	\bsimilarrightarrow*	↯	U+XXXX	\relbar
↯	U+2B48	\rightarrowbackapprox*	↯	U+XXXX	\Relbar
↯	U+2B49	\similarleftarrow*	↯	U+XXXX	\Rrelbar*
↯	U+2B4A	\leftarrowapprox*	↯	U+XXXX	\RRelbar*
↯	U+2B4B	\leftarrowbsimilar*	↯	U+XXXX	\mapsfromchar
↯	U+2B4C	\rightarrowbsimilar*	↯	U+XXXX	\mapstochar

## 5.5 Punctuation

,	U+002C	,	:	U+003A	\colon
.	U+002E	\ldotp	;	U+003B	;

## 5.6 Integrals

Integrals come in two styles, the slanted versions shown below ( $f$ , etc.) and upright versions such as  $f$ . By default, the symbol names listed below will give you the slanted style, but if you specify the `upint` package option, they will give you the corresponding upright symbols.

It is highly recommended that authors stick to the names below and use the `upint` package option to choose a style globally for their document. However, in recognition of the fact that it might occasionally be necessary to mix the two styles, alternative names have been provided for all integrals. Append `s1` or `up` to the names below to request either the *slanted* or the *upright* variant. Thus, `\ints1` will always yield  $f$  and `\intup` will always yield  $f$ , and similarly for the other integrals.

$f$	U+222B	\smallint	$\int$	U+2A10	\smallcirfnint
$\iint$	U+222C	\smalliiint	$\int$	U+2A11	\smallawint
$\iiint$	U+222D	\smalliiiint	$\int$	U+2A12	\smallrppolint
$\oint$	U+222E	\smalloint	$\int$	U+2A13	\smallscpolint
$\oiint$	U+222F	\smalloiint	$\int$	U+2A14	\smallnpolint
$\oiiint$	U+2230	\smalloiiint	$\int$	U+2A15	\smallpointint
$\intclockwise$	U+2231	\smallintclockwise	$\int$	U+2A16	\smallsqint
$\intvarointclockwise$	U+2232	\smallvarointclockwise	$\int$	U+2A17	\smallintlarhk
$\intctrackwise$	U+2233	\smallointctrackwise	$\int$	U+2A18	\smallintx
$\sumint$	U+2A0B	\smallsumint	$\int$	U+2A19	\smallintcap
$\iiiiiint$	U+2A0C	\smalliiiiint	$\int$	U+2A1A	\smallintcup
$\intbar$	U+2A0D	\smallintbar	$\int$	U+2A1B	\smallupint
$\intBar$	U+2A0E	\smallintBar	$\int$	U+2A1C	\smalllowint
$\fint$	U+2A0F	\smallfint			

$\int$	$\int$	U+222B	\int	$\int$	U+2232	\varointclockwise
$\iint$	$\iint$	U+222C	\iint	$\int$	U+2233	\ointctrackwise
$\iiint$	$\iiint$	U+222D	\iiiint	$\int$	U+2A0B	\sumint
$\oint$	$\oint$	U+222E	\oint	$\iiiiiint$	U+2A0C	\iiiiint
$\oiint$	$\oiint$	U+222F	\oiint	$\intbar$	U+2A0D	\intbar
$\oiiint$	$\oiiint$	U+2230	\oiiint	$\intBar$	U+2A0E	\intBar
$\intclockwise$	$\intclockwise$	U+2231	\intclockwise	$\fint$	U+2A0F	\fint

$\oint$	$\int$	U+2A10	<code>\cirfnint</code>	$\int$	$\int$	U+2A17	<code>\intlarhk</code>
$\int$	$\int$	U+2A11	<code>\awint</code>	$\int$	$\int$	U+2A18	<code>\intx</code>
$\int$	$\int$	U+2A12	<code>\rppolint</code>	$\int$	$\int$	U+2A19	<code>\intcap</code>
$\int$	$\int$	U+2A13	<code>\scpolint</code>	$\int$	$\int$	U+2A1A	<code>\intcup</code>
$\int$	$\int$	U+2A14	<code>\npolint</code>	$\int$	$\int$	U+2A1B	<code>\upint</code>
$\int$	$\int$	U+2A15	<code>\pointint</code>	$\int$	$\int$	U+2A1C	<code>\lowint</code>
$\int$	$\int$	U+2A16	<code>\sqint</code>				

## 5.7 Big operators

$\sum$	$\sum$	U+2140	<code>\Bbbsum</code>	$\oplus$	$\oplus$	U+2A01	<code>\bigoplus*</code>
$\prod$	$\prod$	U+220F	<code>\prod</code>	$\otimes$	$\otimes$	U+2A02	<code>\bigotimes*</code>
$\coprod$	$\coprod$	U+2210	<code>\coprod</code>	$\cup$	$\cup$	U+2A03	<code>\bigcupdot*</code>
$\sum$	$\sum$	U+2211	<code>\sum</code>	$\uplus$	$\uplus$	U+2A04	<code>\biguplus*</code>
$\wedge$	$\wedge$	U+22C0	<code>\bigwedge</code>	$\sqcap$	$\sqcap$	U+2A05	<code>\bigsqcap*</code>
$\vee$	$\vee$	U+22C1	<code>\bigvee</code>	$\sqcup$	$\sqcup$	U+2A06	<code>\bigsqcup*</code>
$\cap$	$\cap$	U+22C2	<code>\bigcap</code>	$\pitchfork$	$\pitchfork$	U+2A07	<code>\conjqquant*</code>
$\cup$	$\cup$	U+22C3	<code>\bigcup</code>	$\pitchfork$	$\pitchfork$	U+2A08	<code>\disjqquant*</code>
$\leftouterjoin$	$\leftouterjoin$	U+27D5	<code>\leftouterjoin*</code>	$\times$	$\times$	U+2A09	<code>\bigtimes*</code>
$\rightouterjoin$	$\rightouterjoin$	U+27D6	<code>\rightouterjoin*</code>	$\boxplus$	$\boxplus$	U+2A0A	<code>\modtwosum*</code>
$\fullouterjoin$	$\fullouterjoin$	U+27D7	<code>\fullouterjoin*</code>	$\boxtimes$	$\boxtimes$	U+2A1D	<code>\Join*</code>
$\perp$	$\perp$	U+27D8	<code>\bigbot*</code>	$\triangleleft$	$\triangleleft$	U+2A1E	<code>\bigtriangleleft*</code>
$\top$	$\top$	U+27D9	<code>\bigtop*</code>	$\z$	$\z$	U+2A1F	<code>\zcmp*</code>
$/$	$/$	U+29F8	<code>\xsol*</code>	$\gg$	$\gg$	U+2A20	<code>\zpipe*</code>
$\backslash$	$\backslash$	U+29F9	<code>\xbsol*</code>	$\uparrow$	$\uparrow$	U+2A21	<code>\zproject*</code>
$\odot$	$\odot$	U+2A00	<code>\bigodot*</code>	$\parallel$	$\parallel$	U+2AFC	<code>\biginterleave</code>
				$\parallel$	$\parallel$	U+2AFF	<code>\bigtalloblong*</code>

## 5.8 Delimiters

$((((( )))$	U+0028, U+0029	<code>(, )</code>
$[[[[[ ]]]]]$	U+005B, U+005D	<code>[, ]</code>

$\{\{\{\{\}\}\}\}$	U+007B, U+007D	<code>\lbrace, \rbrace</code>		
$\left\lceil \left[ \left[ \left[ \left[ \right] \right] \right] \right] \right\rceil$	U+2308, U+2309	<code>\lceil, \rceil</code>		
$\left\lfloor \left[ \left[ \left[ \left[ \right] \right] \right] \right] \right\rfloor$	U+230A, U+230B	<code>\lfloor, \rfloor</code>		
$\left( \left( \left( \left( \left( \right) \right) \right) \right) \right)$	U+23B0, U+23B1	<code>\lmoustache*, \rmoustache*</code>		
$\langle \langle \langle \langle \rangle \rangle \rangle \rangle$	U+2772, U+2773	<code>\lbrbrak*, \rbrbrak*</code>		
$\llbracket \llbracket \llbracket \llbracket \rrbracket \rrbracket \rrbracket \rrbracket$	U+27E6, U+27E7	<code>\lBrack*, \rBrack*</code>		
$\langle \langle \langle \rangle \rangle \rangle$	U+27E8, U+27E9	<code>\langle, \rangle</code>		
$\langle \langle \langle \langle \langle \rangle \rangle \rangle \rangle \rangle \rangle \rangle \rangle$	U+27EA, U+27EB	<code>\lAngle*, \rAngle*</code>		
$\left( \left( \left( \left( \left( \right) \right) \right) \right) \right)$	U+27EE, U+27EF	<code>\lgroup*, \rgroup*</code>		
$\{\{\{\{\}\}\}\}$	U+2983, U+2984	<code>\lBrace*, \rBrace*</code>		
$\left( \left( \left( \left( \left( \right) \right) \right) \right) \right)$	U+2985, U+2986	<code>\lParen*, \rParen*</code>		
$\backslash \backslash \backslash \backslash$	U+005C	<code>\backslash</code>	$\uparrow \uparrow \uparrow \uparrow$	U+21D1 <code>\Uparrow</code>
$/ / / /$	U+002F	<code>/</code>	$\downarrow \downarrow \downarrow \downarrow$	U+21D3 <code>\Downarrow</code>
$       $	U+007C	<code>\vert,  </code>	$\updownarrow \updownarrow \updownarrow \updownarrow$	U+21D5 <code>\Updownarrow</code>
$\Uparrow$	U+2016	<code>\Vert*, \Uparrow</code>	$\Uparrow \Uparrow \Uparrow \Uparrow$	U+290A <code>\Uparrow*</code>
$\Vdash$	U+2980	<code>\Vdash</code>	$\Downarrow \Downarrow \Downarrow \Downarrow$	U+290B <code>\Ddownarrow*</code>
$\Uparrow$	U+2191	<code>\uparrow</code>	$\Uparrow \Uparrow \Uparrow \Uparrow$	U+27F0 <code>\UUparrow*</code>
$\Downarrow$	U+2193	<code>\downarrow</code>	$\Downarrow \Downarrow \Downarrow \Downarrow$	U+27F1 <code>\DDownarrow*</code>
$\Updownarrow$	U+2195	<code>\updownarrow</code>	$       $	U+XXXX <code>\arrowvert</code>

||| U+XXXX \Arrowvert

|||| U+XXXX \bracevert\*

## 5.9 Other braces

⌈	U+231C	\ulcorner*	⤵	U+2993	\lparenless*
⌋	U+231D	\urcorner*	⤶	U+2994	\rparenltr*
⌌	U+231E	\llcorner*	⤷	U+2995	\Lparenltr*
⌍	U+231F	\lrcorner*	⤸	U+2996	\Rparenless*
⌎	U+27EC	\Lrbrak*	(	U+2997	\blkbrak*
⌏	U+27ED	\Rrbrak*	)	U+2998	\rblkbrak*
(	U+2987	\llparenthesis*	⋮	U+29D8	\lvzigzag*
)	U+2988	\rrparenthesis*	⋷	U+29D9	\rvzigzag*
⊲	U+2989	\llangle*	⋸	U+29DA	\Lvzigzag*
⊳	U+298A	\rrangle*	⋹	U+29DB	\Rvzigzag*
[	U+298B	\lbrackubar*	<	U+29FC	\lcurvyangle*
]	U+298C	\rbrackubar*	>	U+29FD	\rcurvyangle*
[	U+298D	\lbrackultick*	(	U+2772	\lbrak*
]	U+298E	\rbracklrtick*	)	U+2773	\rbrak*
[	U+298F	\lbracklltick*	?	U+27C5	\lbag*
]	U+2990	\rbrackurtick*	?	U+27C6	\rbag*
<	U+2991	\langedot*	⌈	U+27EC	\Lrbrak*
>	U+2992	\rangledot*	⌋	U+27ED	\Rrbrak*

## 5.10 Accents

̀	U+0300	\grave	́	U+0315	\ocommatoprigh
´	U+0301	\acute	̂	U+031A	\droang
̂	U+0302	\hat	̃	U+20D0	\leftharpoonaccent
̃	U+0303	\tilde	̄	U+20D1	\rightharpoonaccent
̄	U+0304	\bar	̅	U+20D6	\leftarrowaccent
̆	U+0306	\breve	̆	U+20D7	\vec, \rightarrowaccent
̇	U+0307	\dot	̇	U+20E1	\leftrightarrowaccent
̈	U+0308	\ddot	̈	U+20DB	\dddots
̉	U+0309	\ovhook	̉	U+20DC	\ddddots
̊	U+030A	\mathring	̊	U+20E7	\annuity
̋	U+030C	\check	̋	U+20E9	\widebridgeabove
̌	U+0310	\candra	̌*	U+20F0	\asteraccent
̍	U+0312	\turnedcomma			
̂̂̂	U+0302	\widehat*	̂̂̂	U+20EF	\underrightarrow
̂̂̂̂	U+0303	\widetilde*	̂̂̂̂	U+20EE	\underleftarrow
̂̂̂̂̂	U+030C	\widecheck*	̂̂̂̂̂	U+20E1	\overleftrightarrow
̂̂̂̂̂̂	U+20D6	\overleftarrow	̂̂̂̂̂̂	U+034D	\underleftrightarrow
̂̂̂̂̂̂̂	U+20D7	\overrightarrow	̂̂̂̂̂̂̂	U+20D0	\overleftharpoon

$\overline{xxx}$	U+20D1	<code>\overrightharpoon</code>	$\underline{xxx}$	U+20ED	<code>\underrightharpoon</code>
$\underline{xxx}$	U+20EC	<code>\underleftharpoon</code>			

OpenType STIX Two fonts include a number of under accents that can be used in math mode, but  $\text{\TeX}$  does not support under accents natively so such glyphs can not be used directly. Under accents can be set using regular accents and commands like `\underaccent` from the accents package, for example `\underaccent{\hat}{X}` gives  $\overset{\wedge}{X}$ . The undertilde package provides `\utilde` for extensible under tilde accent.

### 5.11 Over and under brackets

$\overline{xxxxxx}$	U+23B4	<code>\overbracket</code>	$\underline{xxxxxx}$	U+23B5	<code>\underbracket</code>
$\overbrace{xxxxxx}$	U+23DC	<code>\overparen</code>	$\underbrace{xxxxxx}$	U+23DD	<code>\underparen</code>
$\overbrace{xxxxxx}$	U+23DE	<code>\overbrace</code>	$\underbrace{xxxxxx}$	U+23DF	<code>\underbrace</code>

### 5.12 Radicals

$\sqrt{b}$	U+221A	<code>\sqrt</code>	$\overline{)b}$	U+27CC	<code>\longdivision*</code>
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## 6 Font tables

The rest of this document shows glyph tables for all STIX fonts. The name before each table is the T<sub>E</sub>X font name (i.e. TFM file name).

### 6.1 Text fonts

ot1-stix2text

	'0	'1	'2	'3	'4	'5	'6	'7	
'00x	Γ	Δ	Θ	Λ	Ξ	Π	Σ	Υ	"0x
'01x	Φ	Ψ	Ω	ff	fi	fl	ffi	ffl	
'02x	ı	ı	`	'	˘	˙	-	°	"1x
'03x	,	ß	æ	œ	ø	Æ	Œ	Ø	
'04x		!	”	#	\$	%	&	'	"2x
'05x	(	)	*	+	,	-	.	/	
'06x	0	1	2	3	4	5	6	7	"3x
'07x	8	9	:	;	i	=	ı	?	
'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	-	—	”	~	..	
	"8	"9	"A	"B	"C	"D	"E	"F	



ot1-stix2textsc

	'0	'1	'2	'3	'4	'5	'6	'7	
'00x	Γ	Δ	Θ	Λ	Ξ	Π	Σ	Υ	"0x
'01x	Φ	Ψ	Ω	ff	fi	fl	ffi	ffl	
'02x	ı	ı	`	'	˘	˙	-	°	"1x
'03x	˙	ss	Æ	œ	ø	Æ	œ	Ø	
'04x		!	”	#	\$	%	&	'	"2x
'05x	(	)	*	+	,	-	.	/	
'06x	0	1	2	3	4	5	6	7	"3x
'07x	8	9	:	;	i	=	ı	?	
'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	-	—	”	~	..	
	"8	"9	"A	"B	"C	"D	"E	"F	

t1-stix2text

	'0	'1	'2	'3	'4	'5	'6	'7	
'00x	`	'	^	~	..	"	°	˘	"0x
'01x	˘	-	·	,	˙	,	<	>	
'02x	“	”	„	«	»	-	—		"1x
'03x	◦	ı	ı	ff	fi	fl	ffi	ffl	
'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	Ǻ	Ą	Ć	Č	Ǿ	Ě	Ě	Ǿ	"8x
'21x	Ł	Ł	Ł	Ń	Ń	Ń	Ń	Ń	
'22x	Ŕ	Ś	Š	Ş	Ŧ	Ŧ	Ŧ	Ŧ	"9x
'23x	Ÿ	Ż	Ž	Ž	IJ	İ	đ	§	
'24x	ǻ	ą	ć	č	d'	ě	ę	ǻ	"Ax
'25x	Í	Ĭ	ł	ń	ň	ŋ	ó	ř	
'26x	ř	ś	š	ş	ŧ	ŧ	ŧ	ŧ	"Bx
'27x	ÿ	ż	ž	ž	ij	i	ı	£	
'30x	À	Á	Â	Ã	Ä	Å	Æ	Ç	"Cx
'31x	È	É	Ê	Ë	Ì	Í	Î	Ï	
'32x	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	Œ	"Dx
'33x	Ø	Ù	Ú	Û	Ü	Ý	Þ	ŠŠ	
'34x	à	á	â	ã	ä	å	æ	ç	"Ex
'35x	è	é	ê	ë	ì	í	î	ï	
'36x	ð	ñ	ò	ó	ô	õ	ö	œ	"Fx
'37x	ø	ù	ú	û	ü	ý	þ	ß	
	"8	"9	"A	"B	"C	"D	"E	"F	

t1-stix2textsc

	'0	'1	'2	'3	'4	'5	'6	'7	
'00x	`	'	^	~	..	"	°	˘	"0x
'01x	˘	-	·	‚	˙	‚	<	>	
'02x	“	”	„	«	»	-	—		"1x
'03x	◦	I	J	ff	fi	fl	ffi	ffl	
'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	Ǻ	Ą	Ć	Č	Ď	Ě	Ę	Ǧ	"8x
'21x	Ł	Ł	Ł	Ń	Ń	Ń	Ó	Ŕ	
'22x	Ř	Ś	Š	Ş	Ť	Ť	Ů	Ů	"9x
'23x	Ÿ	Ž	Ž	Ž	IJ	İ	Đ	§	
'24x	Ǻ	Ą	Ć	Č	Ď	Ě	Ę	Ǧ	"Ax
'25x	Ł	Ł	Ł	Ń	Ń	Ń	Ó	Ŕ	
'26x	Ř	Ś	Š	Ş	Ť	Ť	Ů	Ů	"Bx
'27x	Ÿ	Ž	Ž	Ž	IJ	i	ı	£	
'30x	À	Á	Â	Ã	Ä	Å	Æ	Ç	"Cx
'31x	È	É	Ê	Ë	Ì	Í	Î	Ï	
'32x	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	Œ	"Dx
'33x	Ø	Ù	Ú	Û	Ü	Ý	Þ	ŠS	
'34x	À	Á	Â	Ã	Ä	Å	Æ	Ç	"Ex
'35x	È	É	Ê	Ë	Ì	Í	Î	Ï	
'36x	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	Œ	"Fx
'37x	Ø	Ù	Ú	Û	Ü	Ý	Þ	ŠS	
	"8	"9	"A	"B	"C	"D	"E	"F	

ot2-stix2text

	'0	'1	'2	'3	'4	'5	'6	'7	
'00x	Њ	Љ	Џ	Э	І	Є	Ђ	Ћ	"0x
'01x	њ	љ	џ	э	і	є	ђ	ћ	
'02x	Ю	Ж	Й	Ё	У	Ө	С	Я	"1x
'03x	ю	ж	й	ё	у	ө	с	я	
'04x	“	!	”	Ђ	Ѓ	%	’	,	"2x
'05x	(	)	*	Ћ	,	-	.	/	
'06x	0	1	2	3	4	5	6	7	"3x
'07x	8	9	:	;	«	ı	»	?	
'10x	˘	А	Б	Ц	Д	Е	Ф	Г	"4x
'11x	Х	И	Ј	К	Л	М	Н	О	
'12x	П	Ч	Р	С	Т	У	В	Щ	"5x
'13x	Ш	Ы	З	[	“	]	Ь	Ъ	
'14x	‘	а	б	ц	д	е	ф	г	"6x
'15x	х	и	ј	к	л	м	н	о	
'16x	п	ч	р	с	т	у	в	щ	"7x
'17x	ш	ы	з	-	—	№	ь	ъ	
'22x			Ў						"9x
'23x									
'26x			Ў						"Bx
'27x									
	"8	"9	"A	"B	"C	"D	"E	"F	

ot2-stix2textsc

	'0	'1	'2	'3	'4	'5	'6	'7	
'00x	НЬ	ЛЬ	Ц	Э	І	Є	Ђ	Ћ	"0x
'01x	њ	љ	ц	э	і	є	ђ	ћ	
'02x	Ю	Ж	Й	Ё	Ѵ	Ө	Š	Я	"1x
'03x	ю	ж	й	ё	ѵ	ө	š	я	
'04x	¨	!	”	Ђ	˘	%	’	’	"2x
'05x	(	)	*	Ђ	,	-	.	/	
'06x	0	1	2	3	4	5	6	7	"3x
'07x	8	9	:	;	«	І	»	?	
'10x	˘	А	Б	Ц	Д	Е	Ф	Г	"4x
'11x	х	и	ј	к	л	м	н	о	
'12x	П	Ч	Р	С	Т	У	В	Щ	"5x
'13x	ш	ч	р	с	[	“	]	Ь	
'14x	‘	А	Б	Ц	Д	Е	Ф	Г	"6x
'15x	х	и	ј	к	л	м	н	о	
'16x	П	Ч	Р	С	Т	У	В	Щ	"7x
'17x	ш	ч	р	с	—	№	ь	ъ	
'22x			Ў						"9x
'23x									
'26x			ў						"Bx
'27x									
	"8	"9	"A	"B	"C	"D	"E	"F	

ts1-stix2text

	'0	'1	'2	'3	'4	'5	'6	'7	
'00x	`	´	^	~	¨	˘	°	˘	"0x
'01x	˘	-	·	‚	¸	,			
'02x			”						"1x
'03x									
'04x	_				\$			'	"2x
'05x					,		.	/	
'06x	0	1	2	3	4	5	6	7	"3x
'07x	8	9				-			
'10x									"4x
'11x						Ü			
'12x								Ω	"5x
'13x									
'14x	`								"6x
'15x									
'16x									"7x
'17x									
'20x	˘	˘	”	“	†	‡		‰	"8x
'21x	•		\$	¢					
'22x			£	℞				™	"9x
'23x	‰	¶		№	∕	€			
'24x			¢	£	¤	¥	¦	§	"Ax
'25x	¨	©	ª		¬		®	-	
'26x	°	±	²	³	´	µ	¶	·	"Bx
'27x	∗	¹	º		¼	½	¾	€	
'32x							×		"Dx
'33x									
'36x							÷		"Fx
'37x									
	"8	"9	"A	"B	"C	"D	"E	"F	

## 6.2 Math fonts

stix2-mathrm

	'0	'1	'2	'3	'4	'5	'6	'7	
'00x	Γ	Δ	Θ	Λ	Ξ	Π	Σ	Υ	"0x
'01x	Φ	Ψ	Ω	α	β	γ	δ	ε	
'02x	ζ	η	θ	ι	κ	λ	μ	ν	"1x
'03x	ξ	π	ρ	σ	τ	υ	φ	χ	
'04x	ψ	ω	ε	ϑ	Ϙ	ϙ	ς	φ	"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	ı	ĵ	#	%	'	
'20x	`	´	^	˘	-	˘	·	..	"8x
'21x	˙	˚	˘	˙	˚	˙	˚	˘	
'22x	←	→	↔	⋯	⋯	↔	⌊	⌋	"9x
'23x	*	&	@	¬	·	×	≤	÷	
'24x	Z	/	∃	†	‡	•	..	...	"Ax
'25x	!	"	'''	''''	∖	∥	^	!!	
'26x	·	/	??	○	∞		○	□	"Bx
'27x	◇	△	ε	ϕ	ı	Å	¤	©	
'30x	⌈	⌋	∧	ϕ	Ϙ	∇	℄	∃	"Cx
'31x	∄	∅	Δ	∈	∉	ε	∋	∄	
'32x	∋	■	†	≥	∖	◦	•	∞	"Dx
'33x	∞	L	∠	∴	∴		†	∥	
'34x	‡	∧	∨	∩	∪	∴	∴	∅	"Ex
'35x	∴	÷	−	∴	≈	≈	≈	≈	
'36x	≈	≈	≈	≈	≈	≈	≈	≈	"Fx
'37x	≠	≈	≈	≈	≈	≈	≈	≈	
	"8	"9	"A	"B	"C	"D	"E	"F	

stix2-mathit

	'0	'1	'2	'3	'4	'5	'6	'7	
'00x	$\Gamma$	$\Delta$	$\Theta$	$\Lambda$	$\Xi$	$\Pi$	$\Sigma$	$\Upsilon$	"0x
'01x	$\Phi$	$\Psi$	$\Omega$	$\alpha$	$\beta$	$\gamma$	$\delta$	$\epsilon$	
'02x	$\zeta$	$\eta$	$\theta$	$\iota$	$\kappa$	$\lambda$	$\mu$	$\nu$	"1x
'03x	$\xi$	$\pi$	$\rho$	$\sigma$	$\tau$	$\upsilon$	$\phi$	$\chi$	
'04x	$\psi$	$\omega$	$\varepsilon$	$\vartheta$	$\varpi$	$\varrho$	$\varsigma$	$\varphi$	"2x
'05x	$\nabla$	$\partial$	$\aleph$	$\beth$	$\lambda$	$\beth$	$\triangleright$	$\triangleleft$	
'06x	0	1	2	3	4	5	6	7	"3x
'07x	8	9	.	,	<	$\hbar$	>	$\star$	
'10x	$\leq$	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	b	h	#	—	—	
'14x	$\hbar$	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	ι	J	$\neq$	$\ll$	—	
'20x	`	'	^	~	-	˘	·	..	"8x
'21x	˙	◦	˘	˙	˚	˛	˜	˜	
'22x	-	←	→	...	...	↔	⊥	⊥	"9x
'23x	*	-	^	~	˘	˘	˘	˘	
'24x	—	—	—	—	—	—	—	—	"Ax
'25x	—	—	—	—	—	—	—	—	
'26x	—	—	—	—	—	—	—	—	"Bx
'27x	$\gg$	$\ll$	$\neq$	$\neq$	$\neq$	$\neq$	$\neq$	$\neq$	
'30x	$\approx$	$\neq$	$\neq$	$\leq$	$\geq$	$\neq$	$\neq$	$\neq$	"Cx
'31x	$\succ$	$\preceq$	$\succ$	$\succ$	$\succ$	$\neq$	$\neq$	C	
'32x	⊃	⊄	⊄	⊆	⊆	⊄	⊄	⊆	"Dx
'33x	⊇	⊈	⊈	⊈	⊆	⊆	⊆	⊆	
'34x	⊐	⊐	⊕	⊖	⊗	⊗	⊙	⊙	"Ex
'35x	⊗	⊖	⊖	⊕	⊕	⊗	⊕	⊕	
'36x	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	"Fx
'37x	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	
	"8	"9	"A	"B	"C	"D	"E	"F	



stix2-mathsf

	'0	'1	'2	'3	'4	'5	'6	'7	
'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	˘	˙	ˆ	˜	ˉ	˘	˙	˚	"8x
'21x	˚	◦	∨	◊	◊	◊	◊	◊	
'22x	↯	↰	↱	⋮	⋮	↕	⌊	⌋	"9x
'23x	*	→	↓	↔	↕	↗	↘	↙	
'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	

stix2-mathsf1t

	'0	'1	'2	'3	'4	'5	'6	'7	
'04x									"2x
'05x			$\oplus$	$\leftarrow$	$\Leftarrow$	$\Leftrightarrow$	$\leftarrow$	$\leftarrow\leftarrow$	
'06x	0	1	2	3	4	5	6	7	"3x
'07x	8	9	$\leftarrow$	$\Leftarrow$	$\Leftrightarrow$	$\leftarrow$	$\Leftarrow$	$\Leftarrow$	
'10x	$\otimes$	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	$\curvearrowright$	$\Leftarrow$	$\rightarrow$	$\Leftarrow$	$\rightarrow$	
'14x	$\Rightarrow$	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	l	J	$\Leftarrow$	$\Rightarrow$	)	
'20x	`	'	^	~	-	^	.	:	"8x
'21x	?	°	v	°	^	.	.	^	
'22x	~	↑	→	⋮	⋮	↕	└	┘	"9x
'23x	*	$\rightarrow$	$\Rightarrow$	$\Leftarrow$	$\Rightarrow$	$\Leftrightarrow$	$\rightarrow$	$\Leftarrow$	
'24x	$\Rightarrow$	$\downarrow$	$\uparrow$	$\Leftarrow$	$\Leftarrow$	$\rightarrow$	$\rightarrow$	$\rightarrow$	"Ax
'25x	$\rightarrow$	$\rightarrow$	$\rightarrow$	$\uparrow$	$\downarrow$	$\rightarrow$	$\rightarrow$	$\rightarrow$	
'26x	$\rightarrow$	$\rightarrow$	$\downarrow$	$\downarrow$	$\rightarrow$	$\rightarrow$	$\rightarrow$	$\rightarrow$	"Bx
'27x	$\rightarrow$	$\rightarrow$	$\searrow$	$\nearrow$	$\nearrow$	$\nearrow$	$\searrow$	$\searrow$	
'30x	$\otimes$	$\otimes$	$\otimes$	$\otimes$	$\otimes$	$\otimes$	$\otimes$	$\otimes$	"Cx
'31x	$\otimes$	$\otimes$	$\otimes$	$\otimes$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	
'32x	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	"Dx
'33x	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	
'34x	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	"Ex
'35x	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	
'36x	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	"Fx
'37x	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	
	"8	"9	"A	"B	"C	"D	"E	"F	

stix2-mathtt

	'0	'1	'2	'3	'4	'5	'6	'7	
'00x									"0x
'01x									
'02x									"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	ı	j	o			
'20x	o	φ	✓	✠	⊕	*	*		"8x
'21x									
'22x									"9x
'23x									
'24x	☆	×	×	×	*	⊗	⊗	⊗	"Ax
'25x						┌	└	;	
'26x	∏	∩	∪	∩	∩	∩	∩	∩	"Bx
'27x	∩	∩							
	"8	"9	"A	"B	"C	"D	"E	"F	

stix2-mathbb

	'0	'1	'2	'3	'4	'5	'6	'7	
'00x	Γ					Π			"0x
'01x						ϣ			
'02x									"1x
'03x		Ξ							
'04x							ϣΥ	ΠΥ	"2x
'05x	ΠΥ	ϣΛ	ϣΥ	ϣΛ	ϣΥ	ϣΛ	ϣΥϣ	ϣΠ	
'06x	Θ	1	2	3	4	5	6	7	"3x
'07x	8	9	ϣ	ϣ	ϣ	ϣ	ϣ	ϣ	
'10x	Α	Α	Β	Γ	Δ	Ε	Ζ	Η	"4x
'11x	Θ	Ι	Κ	Λ	Μ	Ν	Ξ	Ο	
'12x	Ρ	Σ	Τ	Υ	Φ	Χ	Ψ	Ω	"5x
'13x	Χ	Υ	Ζ	ι	ι	ι	ι	ι	
'14x	α	α	β	γ	δ	ε	ζ	η	"6x
'15x	θ	ι	κ	λ	μ	ν	ξ	ο	
'16x	ρ	σ	τ	υ	φ	χ	ψ	ω	"7x
'17x	χ	υ	ζ	ι	ι	ι	ι	ι	
'20x	·	·	·	·	·	·	·	·	"8x
'21x	·	·	·	·	·	·	·	·	
'22x	↑	↑	↑	⋮	⋮	↑	└	└	"9x
'23x	*	∩	∪	∩	∩	∩	∩	∩	
'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	

stix2-mathbbbit

































	'0	'1	'2	'3	'4	'5	'6	'7	
'00x									"0x
'01x									
'02x									
'03x									"1x
'04x									
'05x									"2x
'16x									
'17x						£		)	"7x
'20x	·	·	^	·	-	·	·	·	"8x
'21x	·	·	·	·	·	·	·	·	
'22x	·	·	·	·	·	·	·	·	"9x
'23x	*	€	€	€	€	€	€	€	
'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	

stix2-mathscr

	'0	'1	'2	'3	'4	'5	'6	'7	
'00x	$\nabla$	$\circ$	$\bullet$	$\circ$	$\dagger$	$\top$	$\vee$	$\bar{\wedge}$	"0x
'01x	$\nabla$	$\triangleleft$	$\triangle$	$\diamond$	$\cdot$	$\ast$	$\boxtimes$	$\times$	
'02x	$\times$	$\lambda$	$\lt$	$\lesssim$	$\gamma$	$\wedge$	$\in$	$\ni$	"1x
'03x	$\ni$	$\mathcal{U}$	$\ni$	$\#$	$\ll$	$\gg$	$\lll$	$\ggg$	
'04x	$\nabla$	$\nabla$	$\lt$	$\gt$	$\ll$	$\gg$	$\not\approx$	$\not\approx$	"2x
'05x	$\nabla$	$\nabla$	$\nabla$	$\nabla$	$\nabla$	$\nabla$	$\nabla$	$\nabla$	
'06x	$\nabla$	$\nabla$	$\nabla$	$\nabla$	$\nabla$	$\nabla$	$\nabla$	$\nabla$	"3x
'07x	$\in$	$\in$	$\in$	$\in$	$\in$	$\in$	$\in$	$\in$	
'10x	$\ni$	$\mathcal{A}$	$\mathcal{B}$	$\mathcal{C}$	$\mathcal{D}$	$\mathcal{E}$	$\mathcal{F}$	$\mathcal{G}$	"4x
'11x	$\mathcal{H}$	$\mathcal{I}$	$\mathcal{J}$	$\mathcal{K}$	$\mathcal{L}$	$\mathcal{M}$	$\mathcal{N}$	$\mathcal{O}$	
'12x	$\mathcal{P}$	$\mathcal{Q}$	$\mathcal{R}$	$\mathcal{S}$	$\mathcal{T}$	$\mathcal{U}$	$\mathcal{V}$	$\mathcal{W}$	"5x
'13x	$\mathcal{X}$	$\mathcal{Y}$	$\mathcal{Z}$	$\mathcal{E}$	$\mathcal{B}$	$\mathcal{E}$	$\mathcal{E}$	$\mathcal{E}$	
'14x	$\emptyset$	$a$	$b$	$c$	$d$	$e$	$f$	$g$	"6x
'15x	$h$	$i$	$j$	$k$	$l$	$m$	$n$	$o$	
'16x	$p$	$q$	$r$	$s$	$t$	$u$	$v$	$w$	"7x
'17x	$x$	$y$	$z$	$\iota$	$\jmath$	$\wp$	$\triangleleft$	$\circ$	
'20x	$\cdot$	$\cdot$	$\cdot$	$\cdot$	$\cdot$	$\cdot$	$\cdot$	$\cdot$	"8x
'21x	$\cdot$	$\cdot$	$\cdot$	$\cdot$	$\cdot$	$\cdot$	$\cdot$	$\cdot$	
'22x	$\rightarrow$	$\leftarrow$	$\rightarrow$	$\dots$	$\dots$	$\leftrightarrow$	$\lrcorner$	$\ulcorner$	"9x
'23x	$\ast$	$\bar{\wedge}$	$\bar{\wedge}$	$\lrcorner$	$\sqcap$	$\cup$	$\cup$	$\#$	
'24x	$\lrcorner$	$\lrcorner$	$\lrcorner$	$\lrcorner$	$\lrcorner$	$\lrcorner$	$\lrcorner$	$\lrcorner$	"Ax
'25x	$\emptyset$	$\neq$	$\neq$	$\boxtimes$	$\boxtimes$	$\boxtimes$	$\boxtimes$	$\boxtimes$	
'26x	$\triangleleft$	$\odot$	$\text{—}$	$\triangleleft$	$\curvearrowright$	$\times$	$\lrcorner$	$\blacksquare$	"Bx
'27x	$\square$	$\square$	$\square$	$\square$	$\square$	$\square$	$\square$	$\square$	
'30x	$\square$	$\square$	$\square$	$\square$	$\square$	$\square$	$\square$	$\square$	"Cx
'31x	$\square$	$\blacktriangle$	$\triangle$	$\blacktriangle$	$\triangle$	$\blacktriangle$	$\triangle$	$\blacktriangle$	
'32x	$\blacktriangleright$	$\blacktriangleright$	$\blacktriangleright$	$\blacktriangledown$	$\blacktriangledown$	$\blacktriangledown$	$\blacktriangledown$	$\blacktriangledown$	"Dx
'33x	$\triangleleft$	$\triangleleft$	$\triangleleft$	$\triangleleft$	$\triangleleft$	$\blacklozenge$	$\diamond$	$\blacklozenge$	
'34x	$\odot$	$\diamond$	$\circ$	$\odot$	$\odot$	$\odot$	$\bullet$	$\bullet$	"Ex
'35x	$\bullet$	$\bullet$	$\bullet$	$\bullet$	$\bullet$	$\bullet$	$\bullet$	$\bullet$	
'36x	$\square$	$\square$	$\square$	$\square$	$\square$	$\square$	$\square$	$\square$	"Fx
'37x	$\cup$	$\blacktriangle$	$\blacktriangle$	$\blacktriangle$	$\blacktriangle$	$\circ$	$\square$	$\square$	
	"8	"9	"A	"B	"C	"D	"E	"F	

stix2-mathcal

	'0	'1	'2	'3	'4	'5	'6	'7	
'00x	$\mathcal{f}$	$\mathcal{ff}$	$\mathcal{fff}$	$\mathcal{f}$	$\mathcal{ff}$	$\mathcal{fff}$	$\mathcal{f}$	$\mathcal{f}$	"0x
'01x	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{fff}$	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	
'02x	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	"1x
'03x	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{ff}$	$\mathcal{fff}$	$\mathcal{f}$	$\mathcal{ff}$	
'04x	$\mathcal{ff}$	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{fff}$	$\mathcal{f}$	$\mathcal{f}$	"2x
'05x	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	
'06x	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$	$\mathcal{f}$			"3x
'07x			$\mathcal{R}$	$\mathcal{S}$	$\mathcal{V}$	$\mathcal{W}$	$\mathcal{X}$	$\mathcal{Y}$	
'10x	$\mathcal{A}$	$\mathcal{B}$	$\mathcal{C}$	$\mathcal{D}$	$\mathcal{E}$	$\mathcal{F}$	$\mathcal{G}$	$\mathcal{H}$	"4x
'11x	$\mathcal{I}$	$\mathcal{J}$	$\mathcal{K}$	$\mathcal{L}$	$\mathcal{M}$	$\mathcal{N}$	$\mathcal{O}$	$\mathcal{P}$	
'12x	$\mathcal{Q}$	$\mathcal{R}$	$\mathcal{S}$	$\mathcal{T}$	$\mathcal{U}$	$\mathcal{V}$	$\mathcal{W}$	$\mathcal{X}$	"5x
'13x	$\mathcal{Y}$	$\mathcal{Z}$	$\mathcal{A}$	$\mathcal{B}$	$\mathcal{C}$	$\mathcal{D}$	$\mathcal{E}$	$\mathcal{F}$	
'14x	$\mathcal{G}$	$\mathcal{H}$	$\mathcal{I}$	$\mathcal{J}$	$\mathcal{K}$	$\mathcal{L}$	$\mathcal{M}$	$\mathcal{N}$	"6x
'15x	$\mathcal{O}$	$\mathcal{P}$							
'16x									"7x
'17x			$\mathcal{X}$	$\mathcal{Y}$	$\mathcal{Z}$	$\mathcal{A}$	$\mathcal{B}$	$\mathcal{C}$	
'20x	$\mathcal{D}$	$\mathcal{E}$	$\mathcal{F}$	$\mathcal{G}$	$\mathcal{H}$	$\mathcal{I}$	$\mathcal{J}$	$\mathcal{K}$	"8x
'21x	$\mathcal{L}$	$\mathcal{M}$	$\mathcal{N}$	$\mathcal{O}$	$\mathcal{P}$	$\mathcal{Q}$	$\mathcal{R}$	$\mathcal{S}$	
'22x	$\mathcal{T}$	$\mathcal{U}$	$\mathcal{V}$	$\mathcal{W}$	$\mathcal{X}$	$\mathcal{Y}$	$\mathcal{Z}$	$\mathcal{A}$	"9x
'23x	$\mathcal{B}$	$\mathcal{C}$	$\mathcal{D}$	$\mathcal{E}$	$\mathcal{F}$	$\mathcal{G}$	$\mathcal{H}$	$\mathcal{I}$	
'24x	$\mathcal{J}$	$\mathcal{K}$	$\mathcal{L}$	$\mathcal{M}$	$\mathcal{N}$	$\mathcal{O}$	$\mathcal{P}$	$\mathcal{Q}$	"Ax
'25x	$\mathcal{R}$	$\mathcal{S}$	$\mathcal{T}$	$\mathcal{U}$	$\mathcal{V}$	$\mathcal{W}$	$\mathcal{X}$	$\mathcal{Y}$	
'26x	$\mathcal{Z}$	$\mathcal{A}$	$\mathcal{B}$	$\mathcal{C}$	$\mathcal{D}$	$\mathcal{E}$	$\mathcal{F}$	$\mathcal{G}$	"Bx
'27x	$\mathcal{H}$	$\mathcal{I}$	$\mathcal{J}$	$\mathcal{K}$	$\mathcal{L}$	$\mathcal{M}$	$\mathcal{N}$	$\mathcal{O}$	
'30x	$\mathcal{P}$	$\mathcal{Q}$	$\mathcal{R}$	$\mathcal{S}$	$\mathcal{T}$	$\mathcal{U}$	$\mathcal{V}$	$\mathcal{W}$	"Cx
'31x	$\mathcal{X}$	$\mathcal{Y}$	$\mathcal{Z}$	$\mathcal{A}$	$\mathcal{B}$	$\mathcal{C}$	$\mathcal{D}$	$\mathcal{E}$	
'32x	$\mathcal{F}$	$\mathcal{G}$	$\mathcal{H}$	$\mathcal{I}$	$\mathcal{J}$	$\mathcal{K}$	$\mathcal{L}$	$\mathcal{M}$	"Dx
'33x	$\mathcal{N}$	$\mathcal{O}$	$\mathcal{P}$	$\mathcal{Q}$	$\mathcal{R}$	$\mathcal{S}$	$\mathcal{T}$	$\mathcal{U}$	

'34x									"Ex
'35x									
'36x									"Fx
'37x									
	"8	"9	"A	"B	"C	"D	"E	"F	



stix2-mathfrak

	'0	'1	'2	'3	'4	'5	'6	'7	
'00x	$\otimes$	$\rightarrow$	$\leftarrow$	$\triangleleft$	$\perp$	$\@$	$\@$	$\?$	"0x
'01x	$\int$	$\forall$	$\forall$	$\exists$	$\diamond$	$\wedge$	$\cup$	$\lrcorner$	
'02x	$\vDash$	$\bowtie$	$\bowtie$	$\bowtie$	$\perp$	$\top$	$\neq$	$\neq$	"1x
'03x	$\circ$	$\text{—}$	$\text{—}$	$\text{!}$	$\diamond$	$\diamond$	$\diamond$	$\diamond$	
'04x	$\square$	$\square$	$\lrcorner$	$\rhd$	$\bullet$	$\circ$	$\lrcorner$	$\rhd$	"2x
'05x	$\langle$	$\rangle$	$\lrcorner$	$\lrcorner$	$\lrcorner$	$\lrcorner$	$\lrcorner$	$\lrcorner$	
'06x	$\langle$	$\rangle$	$\leftarrow$	$\rightarrow$	$\bowtie$	$\bowtie$	$($	$)$	"3x
'07x	$\dots$	$\dots$	$\bowtie$	$\vDash$	$\vDash$	$\triangleleft$	$\triangleleft$	$\triangleright$	
'10x	$\forall$	$\mathfrak{A}$	$\mathfrak{B}$	$\mathfrak{C}$	$\mathfrak{D}$	$\mathfrak{E}$	$\mathfrak{F}$	$\mathfrak{G}$	"4x
'11x	$\mathfrak{H}$	$\mathfrak{I}$	$\mathfrak{J}$	$\mathfrak{K}$	$\mathfrak{L}$	$\mathfrak{M}$	$\mathfrak{N}$	$\mathfrak{O}$	
'12x	$\mathfrak{P}$	$\mathfrak{Q}$	$\mathfrak{R}$	$\mathfrak{S}$	$\mathfrak{T}$	$\mathfrak{U}$	$\mathfrak{V}$	$\mathfrak{W}$	"5x
'13x	$\mathfrak{X}$	$\mathfrak{Y}$	$\mathfrak{Z}$	$\succ$	$\succ$	$\leq$	$\geq$	$\lrcorner$	
'14x	$\ulcorner$	$\mathfrak{a}$	$\mathfrak{b}$	$\mathfrak{c}$	$\mathfrak{d}$	$\mathfrak{e}$	$\mathfrak{f}$	$\mathfrak{g}$	"6x
'15x	$\mathfrak{h}$	$\mathfrak{i}$	$\mathfrak{j}$	$\mathfrak{k}$	$\mathfrak{l}$	$\mathfrak{m}$	$\mathfrak{n}$	$\mathfrak{o}$	
'16x	$\mathfrak{p}$	$\mathfrak{q}$	$\mathfrak{r}$	$\mathfrak{s}$	$\mathfrak{t}$	$\mathfrak{u}$	$\mathfrak{v}$	$\mathfrak{w}$	"7x
'17x	$\mathfrak{x}$	$\mathfrak{y}$	$\mathfrak{z}$	$\mathfrak{i}$	$\mathfrak{j}$	$\mathfrak{k}$	$\mathfrak{l}$	$\mathfrak{m}$	
'20x	$\cdot$	$\cdot$	$\cdot$	$\cdot$	$\cdot$	$\cdot$	$\cdot$	$\cdot$	"8x
'21x	$\cdot$	$\cdot$	$\cdot$	$\cdot$	$\cdot$	$\cdot$	$\cdot$	$\cdot$	
'22x	$\rightarrow$	$\rightarrow$	$\rightarrow$	$\dots$	$\dots$	$\leftrightarrow$	$\lrcorner$	$\lrcorner$	"9x
'23x	$*$	$\bowtie$	$\bowtie$	$\bowtie$	$\bowtie$	$\bowtie$	$\bowtie$	$\bowtie$	
'24x	$\ominus$	$\ominus$	$\ominus$	$\ominus$	$\ominus$	$\ominus$	$\ominus$	$\ominus$	"Ax
'25x	$\oplus$	$\oplus$	$\oplus$	$\oplus$	$\oplus$	$\oplus$	$\oplus$	$\oplus$	
'26x	$\otimes$	$\otimes$	$\otimes$	$\otimes$	$\otimes$	$\otimes$	$\otimes$	$\otimes$	"Bx
'27x	$\boxplus$	$\triangleleft$	$\triangleleft$	$\triangleleft$	$\triangleleft$	$\triangleleft$	$\triangleleft$	$\triangleleft$	
'30x	$\bowtie$	$\bowtie$	$\bowtie$	$\bowtie$	$\bowtie$	$\bowtie$	$\bowtie$	$\bowtie$	"Cx
'31x	$\bowtie$	$\bowtie$	$\bowtie$	$\infty$	$\infty$	$\infty$	$\infty$	$\infty$	
'32x	$\neq$	$\neq$	$\neq$	$\neq$	$\neq$	$\neq$	$\neq$	$\neq$	"Dx
'33x	$\nabla$	$\blacklozenge$	$\blacklozenge$	$\blacklozenge$	$\blacklozenge$	$\blacklozenge$	$\blacklozenge$	$\blacklozenge$	
'34x	$\blacklozenge$	$\blacklozenge$	$\blacklozenge$	$\blacklozenge$	$\blacklozenge$	$\blacklozenge$	$\blacklozenge$	$\blacklozenge$	"Ex
'35x	$\#$	$\langle$	$\rangle$	$+$	$-$	$\bowtie$	$\triangleleft$	$\S$	
'36x	$\gg$	$\uparrow$	$\dagger$	$\dagger$	$\dagger$	$\dagger$	$\dagger$	$\dagger$	"Fx
'37x	$\dagger$	$\dagger$	$\dagger$	$\dagger$	$\dagger$	$\dagger$	$\dagger$	$\dagger$	
	"8	"9	"A	"B	"C	"D	"E	"F	

stix2-mathex

	'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	⌋	⌋								
'26x	Σ	Π	Π	Σ	∧	∨	∩	∪		"Bx
'27x	/	\	⊙	⊕	⊗	⊔	⊕	⊖		
'30x	⊔	⊕	⊗	×	Σ	∩	Σ	Π		"Cx
'31x	Π	Σ	∧	∨	∩	∪	/	\		
'32x	⊙	⊕	⊗	⊔	⊕	⊖	⊔	⊕		"Dx
'33x	⊗	×	Σ	∩	(	)	(	)		
'34x	⌋	⌋	⌋	⌋	⌋	⌋	⌋	⌋		"Ex
'35x	⌋	⌋	⌋	⌋	⌋	⌋	⌋	⌋		
'36x	⌋	⌋	⌋	⌋	⌋	⌋				"Fx
'37x		√	⌋							
	"8	"9	"A	"B	"C	"D	"E	"F		