# FdSymbol: A Math Symbol Font

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#### 1 Introduction

FdSymbol is a font of mathematical symbols designed as a companion to Typotheque's Fedra family $^{\rm l}$ , but it might also fit well to other contemporary type-faces. To use this font in a  ${\rm L}^{\rm H}{\rm E}^{\rm X}$  document, add the command

\usepackage[\langle options \rangle] \{ fdsymbol \}

to the preamble of your document. This redefined most of the standard mathematical symbols and makes available many new ones (see Section 4). For the available options see Section 3.

 $<sup>^{1} \</sup>verb|http://www.typotheque.com/fonts|$ 

#### Acknowledgements

The FdSymbol font is derived from MnSymbol<sup>2</sup>, another math symbol font, designed by Achim Blumensath.

## 2 Interferences with other packages

The fdsymbol package is incompatible with the amssymb and amsfonts packages. It automatically loads the amsmath and textcomp packages. If you want to pass options to these packages, you can either load these packages before fdsymbol or you can include the options in the \documentclass command.

#### **3** Font selection

FdSymbol comes in four weights, which are (in increasing order) Book, Regular, Medium and Bold. Of these, Book and Regular are suitable for normal math typesetting, while Medium and Bold can be used for bold math typesetting. Using the options normalweight and boldweight, you can select which weights are used. For example, to use the Medium weight as the normal weight in math, add normalweight=Medium to the package options. Analogously, to use the Bold weight with \boldmath or \boldsymbol, add boldweight=Bold to the package options. By default, Book and Medium are used. Additionally, it is possible to use select a suitable weight automatically depending on the font size by selecting auto. For example, if you use the option normalweight=auto, the Book weight will be used for normal and large sizes, but the Regular weight will be used for small sizes (e.g. in sub- and superscripts).

In order to use FdSymbol with different text fonts, it is possible to scale the fonts by an arbitrary factor. This can be achieved with the option scale. For example, to use the fonts at 90% of their original size, you can add scale=0.9 to the package options. Finally, it is possible to increase the height of delimiters slightly (by 20% in text size and by 25% in \big size). This can be achieved by activating the option largedelims. Use this option if you want to combine FdSymbol with a text font that has rather tall delimiters, such as Fedra Serif B. In fact, the height of normal delimiters will match the height of text delimiters in Fedra Serif B if you select this option.

The following table summarises all options (keys) that can be used with the fdsymbol package. Values that correspond to the default behaviour of the package are marked by an asterisk.

<sup>&</sup>lt;sup>2</sup>http://www.ctan.org/tex-archive/fonts/mnsymbol/

| Key          | Values               |
|--------------|----------------------|
| normalweight | Book*, Regular, auto |
| boldweight   | Medium*, Bold, auto  |
| scale        | (factor)             |
| largedelims  | true, false*         |

# 4 Symbols

The fdsymbol package provides the following symbols.

## 4.1 Ordinary symbols

| •••         | \hdots                       |                  | \mdwhtlozenge              |
|-------------|------------------------------|------------------|----------------------------|
| :           | \vdots                       | <b>♦</b>         | \medblacklozenge,          |
|             | \udots, \adots               |                  | \blacklozenge,             |
| ٠.          | \ddots                       |                  | \mdlgblklozenge,           |
| :•          | \righttherefore              |                  | \mdblklozenge              |
| <i>:</i> .  | \uptherefore, \therefore     | $\Diamond$       | \lozengeminus              |
| ·:          | \lefttherefore               | $\Rightarrow$    | \largewhitestar            |
| :           | \downtherefore, \because     | *                | \largeblackstar, \bigstar  |
| ::          | \squaredots                  | $\infty$         | \infty                     |
| _           | \neg, \lnot                  | Τ                | \bot                       |
| _           | \backneg, \invnot, \invneg   | Τ                | \top                       |
| _           | \turnedneg, \turnednot       | _                | \angle                     |
| _           | \turnedbackneg               | 7                | \revangle                  |
| $\triangle$ | \largetriangleup             | 4                | \measuredangle             |
| $\nabla$    | \largetriangledown           | Δ                | \revmeasuredangle,         |
| Ø           | \emptyset, \diameter,        |                  | \measuredangleleft         |
|             | \varnothing                  | ⋖                | \sphericalangle            |
| Ø           | \revemptyset                 | A                | \sphericalangleup          |
| $\circ$     | \largecircle, \lgwhtcircle   | $\triangleright$ | \sphericalangleleft,       |
|             | \largeblackcircle            |                  | \revsphericalangle,\gtlpar |
|             | \largesquare, \lgwhtsquare   | Α                | \sphericalangledown        |
|             | \largeblacksquare,           | L                | \rightangle                |
|             | \lgblksquare                 | ₽                | \measuredrightangle        |
| <b>♦</b>    | \smalllozenge, \smwhtlozenge | ь                | \rightanglesquare,         |
| •           | \smallblacklozenge,          |                  | \rightanglesqr             |
|             | \smblklozenge                | ₽                | \measuredrightangledot,    |
| $\Diamond$  | \medlozenge, \lozenge,       |                  | \rightanglemdot            |
|             | \mdlgwhtlozenge,             | I                | \prime                     |
|             |                              |                  |                            |

\backprime \nexists √ \checkmark \Finv / \lightning, \downzigzagarrow \Game ♦ \diamondsuit \complement \vardiamondsuit \flat ♡ \heartsuit \natural ♥ \varheartsuit \sharp \spadesuit \wp \clubsuit /, \mathslash ★ \maltese \backslash ☆ \starofdavid |,\vert \sector  $\nabla$ \Vert Α \forall Ε \exists || \Vvert

#### 4.2 Binary operators

· \cdot - \intprodr, \hookupminus

· \udotdot \times

\ddotdot \times, \ttimes

\ \medbackslash, \smallsetminus \ \ \upbowtie, \hourglass

\wedge, \land \dotminus \minusdot \vee, \lor \wedgedot \minusfdots \veedot \minusrdots \veebar \dotsminusdots \barwedge \dotplus \veedoublebar \div \divideontimes \doublebarwedge

minushookdown m \doublewedge, \wedgeonwedge

- \hookdownminus w \doublevee, \veeonwee

- y \curlyvee
- v \curlyveedot
- M \doublecurlywedge
- w \doublecurlyvee
- ∪ \cup
- ∩ \cap
- ⊎ \doublecup, \Cup
- ∪ \cupdot
- ∩ \capdot
- ⊎ \cupplus, \uplus
- ∩ \capplus
- ⊔ \sqcup
- □ \sqcap

- ⊔ \sqcupdot
- □ \sqcapdot
- ⊎ \sqcupplus
- → \pullback

- △ \smalltriangleup

- ► \smallblacktriangleright
- ▲ \smallblacktriangleup
- √ \smallblacktriangleleft
- ▼ \smallblacktriangledown
- > \medtriangleright,
   \triangleright
- △ \medtriangleup, \triangle, \vartriangle

- ► \medblacktriangleright, \blacktriangleright

- ▲ \medblacktriangleup, \blacktriangle
- ▼ \medblacktriangledown, \blacktriangledown
- ∆ \bigtriangleup
- $\nabla$  \bigtriangledown
- \smallcircle, \circ, \smwhtcircle
- \smallblackcircle, \bullet, \smblkcircle
- > \medcircle, \mdlgwhtcircle, \mdwhtcircle
- \medblackcircle, \mdlgblkcircle, \mdblkcircle
- ⊖ \ominus
- O \overt,\circledvert
- ⊘ \oslash
- ⊕ \oplus
- ⊗ \otimes
- ⊙ \odot
- ⊚ \ocirc,\circledcirc
- ♦ \oast,\circledast
- ⊖ \odash,\circleddash
- ⊜ \oequal,\circledequal
- \bigcirc
- smallsquare, \smwhtsquare
- \smallblacksquare, \smblksquare
- □ \medsquare, \square, \Box, \mdlgwhtsquare, \mdwhtsquare
- \medblacksquare,
  \mdlgblksquare,\mdblksquare
- ⊟ \boxminus
- □ \boxvert, \boxbar

- ∃ \boxplus

\boxdot \diamondtimes \boxbox \diamonddot, \diamondcdot \smalldiamond, \diamond, \diamonddiamond \smwhtdiamond \smallwhitestar, \smwhitestar \smallblackdiamond, \smallblackstar, \star \blackdiamond, \smblkdiamond \medwhitestar ♦ \meddiamond, \Diamond, \medblackstar, \medstar \mdlgwhtdiamond, \*, \ast \mdwhtdiamond \intercal ♦ \medblackdiamond, \wreath, \wr \mdlgblkdiamond, \amalg \mdblkdiamond  $\l$ ♦ \diamondminus \rhd D ♦ \diamondvert \unlhd ♦ \diamondslash \unrhd ♦ \diamondbackslash, \diamondbslash \divslash

\setminus

#### 4.3 Relations

♦ \diamondplus

=, \equal, \Relbar \fallingdotseq := \coloneq, \coloneqq \risingdotseq \equiv \smile, \smallsmile ≡ \frown, \smallfrown \sim \backsim \smilefrown, \asymp \frownsmile, \closure \approx \triplesim, \approxident \smileeq \frowneq, \arceq \simeq \backsimeq \eqcirc \eqsim \circeq ≂ \cong \wedgeq, \hateq  $\cong$ \veeeq \backcong ≅ ≟ \dotcong \stareq \approxeq ≜ \triangleeq, \triangleq \bumpeq

\leqslant ≤ ≥ \geqslant ≦ \leqq ≧ \geqq ≲ \lesssim \gtrsim ≳ ≨ \lessapprox ≳ \gtrapprox ≶ \lessgtr ≷ \gtrless ⋚ \lesseqgtr ⋛ \gtreqless ⋚ \lesseqqgtr ₹ \gtreqqless ≶ \lesseqgtrslant

<

□ \sqsubset
□ \sqsupset

⊆ \sqsubseteq⊒ \sqsubseteq⊆ \sqsubseteqq⊒ \sqsubseteqŒ \Sqsubset

Sqsupset

C \subset

Supset

Subseteq

Subseteq

Supseteq

Supseteq

\subseteqq

⊆

\preceq

\succeq \preccurlyeq \succcurlyeq ≝ \preceqq \succeqq ≧ \precsim ≾ ≿ \succsim ≾ \precapprox ≿ \succapprox \lessdot \gtrdot

\leqdot

⊴

≥ \geqdot

≤ \leqslantdot, \lesdot

> \geqslantdot, \gesdot

< \eqslantless
> \eqslantgtr
< \curlyeqprec
> \curlyeqsucc
~ \thicksim

\thickapprox
- \rightarrow,\to

↑ \uparrow

← \leftarrow, \gets

\ \downarrow
\times \nearrow
\times \nwarrow
\times \searrow
\times \Rightarrow
\times \Uparrow
\times \Leftarrow
\times \Downarrow
\times \Nearrow
\times \Nwarrow

 $\leftrightarrow$  \leftrightarrow

\updownarrow

√ \neswarrow

\nwsearrow

⇔ \Leftrightarrow

 $\twoheadrightarrow$  \twoheadrightarrow

† \twoheaduparrow

← \twoheadleftarrow

\twoheaddownarrow

 $\nearrow$  \twoheadnearrow

∠ \twoheadswarrow

√ twoheadsearrow

→ \rightarrowtail

1 \uparrowtail

\downarrowtail

√ \nearrowtail

\nwarrowtail

∠ \swarrowtail

√ \searrowtail

→ \rightmapsto, \mapsto

1 \upmapsto, \mapsup

← \leftmapsto, \mapsfrom

\downmapsto, \mapsdown

√ \nemapsto

√ \nwmapsto

∠ \swmapsto

√ \semapsto

 $\hookrightarrow$  \lhookrightarrow,

\hookrightarrow

↑ \lhookuparrow

\$ \lhookdownarrow

√ \lhooknearrow

\\ \lhooknwarrow, \hknwarrow

∠ \lhookswarrow

\ \lhooksearrow.\hksearrow

→ \rhookrightarrow

\rhookuparrow

\hookleftarrow

1 \rhookdownarrow

∠ \rhooknearrow, \hknearrow

√ \rhooknwarrow

∠ \rhookswarrow, \hkswarrow

\rhooksearrow

→ \rightharpoonup

1 \upharpoonleft

← \leftharpoondown

| \downharpoonright

/ \neharpoonnw

\nwharpoonsw

∠ \swharpoonse

√ \seharpoonne

→ \rightharpoondown

\upharpoonright,\restriction

← \leftharpoonup

\downharpoonleft

\nwharpoonne

√ \swharpoonnw

√ \seharpoonsw

→ \leftrightharpoonupdown

1 \updownharpoonleftright

Z \neswharpoonnwse

\nwseharpoonnesw

→ \leftrightharpoondownup

√ \neswharpoonsenw

\nwseharpoonswne

1 \updownharpoons,

\updownharpoonsleftright

// \neswharpoons

≒ \leftrightharpoons

| 1 | \downupharpoons, |  |  |  |  |
|---|------------------|--|--|--|--|
|   | ٠.               |  |  |  |  |

\downupharpoonsleftright

- √ \swneharpoons
- √ \nwseharpoons
- → \rightbkarrow, \dashrightarrow, \dasharrow
- † \upbkarrow
- \downbkarrow
- √ \nebkarrow
- \nwbkarrow
- ∠′\swbkarrow
- ` \sebkarrow
- → \rightspoon, \multimap
- \upspoon, \cirmid
- ← \leftspoon, \multimapinv
- | \downspoon, \midcir
- → \rightblackspoon
- | \upblackspoon
- ← \leftblackspoon
- ↓ \downblackspoon
- → \rightpitchfork
- ← \leftpitchfork
- Ψ \downpitchfork
- ⇒ \rightrightarrows
- ↑ \upuparrows
- ↓ \downdownarrows
- ↑ \nenearrows
- √ \nwnwarrows
- √ \swswarrows
- √ \sesearrows
- ↑ \updownarrows
- √ \nwsearrows
- ≒ \leftrightarrows
- ↓↑ \downuparrows
- √ \swnearrows
- √ \senwarrows

- → \rightlsquigarrow, \leadsto, \rightsquigarrow
- \uplsquigarrow
- \downlsquigarrow
- → \rightrsquigarrow,
- \uprsquigarrow
- \downrsquigarrow
- \updownsquigarrow
- √ \rightleftsquigarrow
- \$ \downupsquigarrow
- \rightlcurvearrow,
  \curvearrowright
- '\uplcurvearrow
- ∼ \leftlcurvearrow
- \downlcurvearrow,
   \cwrightarcarrow

- √ \swlcurvearrow,

\cwundercurvearrow

- \selcurvearrow
- \rightrcurvearrow,
  \acwunderarcarrow
- \uprcurvearrow
- ( \downrcurvearrow,
   \acwleftarcarrow
- \nwrcurvearrow
- \swrcurvearrow
- √ \sercurvearrow,
  - \ccwundercurvearrow
- \updowncurvearrow

| 5 | \downupcurvearrow |
|---|-------------------|
|   |                   |

√ \swnecurvearrow

⟨
√ \senwcurvearrow

⊢ \leftfootline, \vlongdash

→ \rightfootline, \longdashv

() \acwcirclearrowleft,

\circlearrowleft,

\acwopencirclearrow

\acwcirclearrowdown,
\acwgapcirclearrow

\cwgapcirclearrow

C \cwcirclearrowright, \circlearrowright,

\cwopencirclearrow

\cwcirclearrowup

○ \cwcirclearrowleft

⇒ \Rrightarrow

↑ \Uuparrow

← \Lleftarrow

← \Lsh

r \Rsh

ال \Ldsh

\Rdsh

→ \looparrowright

← \looparrowleft

→ \longrightarrow

← \longleftarrow

←→ \longleftrightarrow

⇒ \Longrightarrow

 $\Leftarrow \Longleftarrow$ 

 $\iff$  \Longleftrightarrow

→ \longmapsto

→ \emptyblackspoon, \origof

→ \filledemptyspoon, \imageof

→ \leftrightspoon, \dualmap

→ \leftrightblackspoon

⊢ \rightvdash, \vdash, \assert

⊥ \upvdash, \perp

→ \leftvdash, \dashv

T \downvdash

⊨ \rightvDash, \vDash, \models

upvDash, \Vbar

╡ \leftvDash, \Dashv

π \downvDash, \barV

⊢ \rightVdash, \Vdash

⊥ \upVdash

⊢ \leftVdash, \dashV

| \rightVDash, \VDash

⇒ \leftVDash, \DashV

₩ \downVDash

⊪ \Vvdash

/nequal, \neq, \ne

**≢** \nequiv

√ \nsim

→ \nbacksim

\* \napprox

t \ntriplesim, \napproxident

≇ \ncong

**≠** \nbackcong

+ /IIDackcong

# \ndoteq

# \neqdot

# \nDoteq

# \nfallingdotseq

√ \nsmile

↑ \nfrown

\nfrownsmile, \nclosure \nleqslcc, \nlescc \ngeqslcc, \ngescc ¥ \nsmileeq \nfrowneq, \narceq \nsqsubset ≇ **≠** \neqcirc \nsqsupset ⊅ \nsqsubseteq # \ncirceq ⊈ # \nwedgeq, \nhateq \nsqsupseteq ⊉ ¥ \nveeeq ቜ \nsqsubseteqq # \nstareq ∄ \nsqsupseteqq # \ntriangleeq \nSqsubset \nin, \notin \nSqsupset ∉ \nowns, \nni \nsubset ∌ \nless \nsupset ≮ \ngtr \nsubseteq \* ⊈ ≰ \nleq ⊉ \nsupseteq ≱ \ngeq ⊈ \nsubseteqq ≰ \nleqslant \nsupseteqq \ngeqslant  $\n$ Subset ≱ \nleqq \nSupset ≰ ≱ \ngeqq \nprec \nsucc ≴ \nlesssim ≵ \ngtrsim \npreceq ≴ \nlessapprox \nsucceq Ł ≵ \ngtrapprox \npreccurlyeq ≴ \nlessgtr \nsucccurlyeq ≹ \ngtrless \npreceqq ≰ ≴ \nlesseqgtr ≱ \nsucceqq ≹ \ngtreqless \nprecsim ≴ ≸ \nlesseqqgtr \nsuccsim ≵ ≹ \ngtreqqless \nprecapprox ≸ \nlesseqgtrslant \nsuccapprox ≱ \ngtreqlessslant \nlessdot √ \nll \ngtrdot ≫ \ngg ≴ \nleqdot ✓ \nlll \ngeqdot >>> \nggg \nleqslantdot, \nlesdot \nlessclosed, \ntriangleleft \ngeqslantdot, \ngesdot ⋪ \ngtrclosed, \ntriangleright \neqslantless ⋫ ₹ \nleqclosed, \ntrianglelefteq ⊉ \neqslantgtr

\ncurlyeqprec

\ncurlyeqsucc

\simneqq

\ngeqclosed, \ntrianglerighteq

\nlesscc, \nltcc

\ngtrcc, \ngtcc

⋭

Ø

\backsimneqq \nSwarrow \nSearrow ≨ \lneq \gneq \nleftrightarrow ≥ \lneqq, \lvertneqq Ĵ \nupdownarrow ≨ ≩ \gneqq, \gvertneqq \nneswarrow  $\label{lnsim}$ \nnwsearrow ⋦ \nLeftrightarrow ⋧ \gnsim ≨ \lnapprox \nUpdownarrow ≩ \gnapprox X \nNeswarrow ≨ \nNwsearrow \lessneqqgtr ≱ \gtrneqqless \ntwoheadrightarrow \ntwoheaduparrow ⋤ \sqsubsetneq \sqsupsetneq \ntwoheadleftarrow ⋥ ¥ \sqsubsetneqq \ntwoheaddownarrow \ntwoheadnearrow ₹ \sqsupsetneqq ⊊ \subsetneq, \varsubsetneq \ntwoheadnwarrow ⊋ \supsetneq, \varsupsetneq \ntwoheadswarrow \subsetneqq, \varsubsetneqq \ntwoheadsearrow ⊊ \supsetneqq, \varsupsetneqq ⊋ \nrightarrowtail \* \nuparrowtail \precneq ⋨ ≱ \succneq \nleftarrowtail \precneqq \ndownarrowtail ≨ ≩ \succneqq \nnearrowtail \precnsim \nnwarrowtail ⋨ \succnsim ⋩ \nswarrowtail ≨ \precnapprox ⅓ \nsearrowtail \succnapprox \nrightmapsto, \nmapsto ≵ ⊬> \nrightarrow, \nto \nupmapsto, \nmapsup **/**→ \nuparrow \nleftmapsto, \nmapsfrom 7 \nleftarrow, \ngets \ndownmapsto, \nmapsdown ₩ \ndownarrow ł \nnemapsto \nnearrow \nnwmapsto \nnwarrow \nswmapsto Ŋ. \nswarrow \nsemapsto \nsearrow \nlhookrightarrow, ⇒ \nRightarrow \nhookrightarrow \nlhookuparrow \nUparrow Ĵ #

12

#

#

\nLeftarrow \nDownarrow

\nNearrow \nNwarrow

\nlhookleftarrow

\nlhookdownarrow

\nlhooknwarrow, \nhknwarrow

\nlhooknearrow

- ✗ \nlhookswarrow
- % \nlhooksearrow, \nhksearrow
- → \nrhookrightarrow
- † \nrhookuparrow
- \nrhookdownarrow
- ⟨ \nrhooknearrow, \nhknearrow
- √ \nrhooknwarrow
- % \nrhookswarrow, \nhkswarrow
- % \nrhooksearrow
- → \nrightharpoonup
- 1 \nupharpoonleft
- → \nleftharpoondown
- t \ndownharpoonright
- x \nneharpoonnw
- ⟨
   \nnwharpoonsw
- X \nswharpoonse
- % \nseharpoonne
- → \nrightharpoondown
- ↓ \nupharpoonright,
  - \nrestriction
- ← \nleftharpoonup
- † \ndownharpoonleft
- √ \nneharpoonse
- \nnwharpoonne
- \nswharpoonnw
- \nseharpoonsw
- → \nleftrightharpoonupdown
- † \nupdownharpoonleftright
- x \nneswharpoonnwse
- √ \nnwseharpoonnesw
- // \nleftrightharpoondownup
- → \nupdownharpoonrightleft
- ⋈ \nneswharpoonsenw
- x \nnwseharpoonswne
- <sup>↑</sup> \nupdownharpoons,
  - \nupdownharpoonsleftright
- ∦ \nneswharpoons

- % \nleftrightharpoons
- ∦ \ndownupharpoons,

\ndownupharpoonsleftright

- % \nswneharpoons
- \nnwseharpoons
- -/> \nrightbkarrow, \ndasharrow, \ndashrightarrow
- ↑ \nupbkarrow
- </- \nleftbkarrow, \ndashleftarrow</pre>
- \nnebkarrow
- √ \nnwbkarrow
- √ \nswbkarrow
- √ \nsebkarrow
- → \nrightspoon, \nmultimap
- nupspoon, \ncirmid
- → \nleftspoon, \nmultimapinv
- \ndownspoon, \nmidcir
- √ \nrightblackspoon
- ↑ \nupblackspoon
- $\leftarrow$  \nleftblackspoon
- → \nrightpitchfork
- ← \nleftpitchfork
- ₩ \ndownpitchfork
- # \nupuparrows
- ♯ \ndowndownarrows
- ♦ \nnenearrows
- ⟨
  √
   \nnwnwarrows
- √ \nswswarrows
- \nrightleftarrows

- ☆ \nleftrightarrows
- √ \nswnearrows

- ⟨
  ⟨
  ⟩
   \nsenwarrows
- \nrightlsquigarrow, \nleadsto,
   \nrightsquigarrow
- \$ \nuplsquigarrow
- √ \nleftlsquigarrow
- \ndownlsquigarrow
- ⋄ \nrightrsquigarrow
- \$ \nuprsquigarrow
- \nleftrsquigarrow,
   \nleftsquigarrow
- ⟨ \ndownrsquigarrow
- \nleftrightsquigarrow
- { \nupdownsquigarrow
- \nrightleftsquigarrow
- { \ndownupsquigarrow
- \nrightlcurvearrow,
   \ncurvearrowright
- ₹ \nuplcurvearrow

- → \nnelcurvearrow
- た \nnwlcurvearrow
- √ \nselcurvearrow
- \nrightrcurvearrow,
  \nacwunderarcarrow
- f \nuprcurvearrow
- \nleftrcurvearrow,
   \ncurvearrowleft,
   \nacwoverarcarrow
- \ndownrcurvearrow,
- $\n$
- \$ \nnercurvearrow
- ⟨ \nnwrcurvearrow
- \nsercurvearrow,
  \nccwundercurvearrow

- √ \nrightleftcurvearrow
- } \ndownupcurvearrow
- > \nneswcurvearrow
- ↑ \nnwsecurvearrow
- √ \nswnecurvearrow
- ⟨√ \nsenwcurvearrow
- → \nleftfootline, \nvlongdash
- → \nrightfootline, \nlongdashv
- () \nacwcirclearrowup
- \(\text{\macwcirclearrowleft,}\)
  \(\ncirclearrowleft,\)
  \(\nacwopencirclearrow\)
- \nacwcirclearrowdown,
   \nacwgapcirclearrow
- \nacwcirclearrowright
- \ncwcirclearrowdown,
   \ncwgapcirclearrow
- \\ncwcirclearrowright,
  \\ncirclearrowright,
  \\ncwopencirclearrow
- ⟨\text{\ncwcirclearrowleft}
- ⇒ \nRrightarrow
- ↑ \nUuparrow

- → \nleftvdash, \ndashv
- ₹ \ndownvdash
- # \nrightvDash, \nvDash, \nmodels

- ₩ \ndownvDash, \nbarV
- ⊮ \nrightVdash, \nVdash
- //I \nleftVdash, \ndashV
- ₹ \ndownVdash
- <u>★</u> \nupVDash

₩ \ndownVDash \between :,\mathratio )( \separated :: \Colon \shortmid - \relbar \mid, \divides ⋈ \rJoin \nshortmid \nmid, \ndivides ⋈ \bowtie, \Join | \parallel  $\infty$  \backpropto, propfrom ∦ \nshortparallel × \crossing 

### 4.4 Punctuation symbols

· \cdotp : \colon, \mathcolon

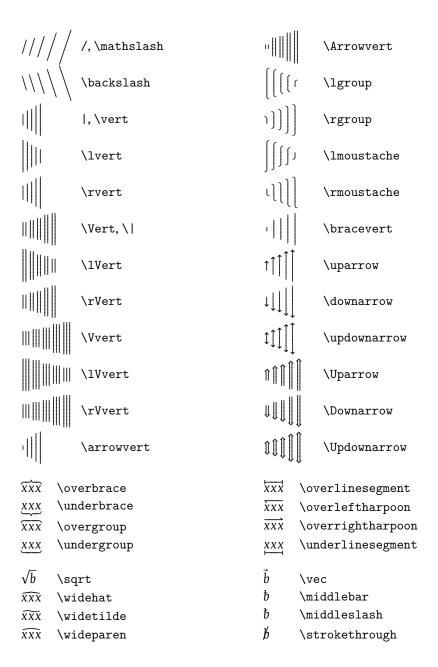
## 4.5 Large operators

| +            | +                 | \bigplus                  |              |                        | \bigsqcup                 |
|--------------|-------------------|---------------------------|--------------|------------------------|---------------------------|
| $\times$     | $\times$          | \bigtimes                 |              |                        | \bigsqcapdot              |
| $\land$      | $\wedge$          | \bigwedge                 | oxdot        |                        | \bigsqcupdot              |
| $\bigvee$    | $\bigvee$         | \bigvee                   | +            | +                      | \bigsqcapplus             |
| $\wedge$     | $\wedge$          | \bigwedgedot              | +            | +                      | \bigsqcupplus             |
| $\forall$    | $\lor$            | \bigveedot                | $\oplus$     | $\overline{\bigoplus}$ | \bigoplus                 |
| $\mathbb{M}$ | $\mathbb{M}$      | \bigdoublewedge,          | $\otimes$    | $\otimes$              | \bigotimes                |
|              | \\ //             | \conjquant                | $\odot$      | $\odot$                | \bigodot                  |
| W            | W                 | \bigdoublevee, \disjquant | $\otimes$    | $\otimes$              | \bigoast                  |
| $\downarrow$ | $\langle \rangle$ | \bigcurlywedge            | П            | Ť                      | \prod                     |
| Υ            | Y                 | \bigcurlyvee              | П            | ŢŢ                     | \coprod                   |
| Ÿ            | $\Diamond$        | \bigcurlywedgedot         | Σ            | $\sum_{}$              | \sum                      |
| Υ            | Ý                 | \bigcurlyveedot           | <u>S</u>     | 2                      | \osum                     |
| 从            | $\mathbb{A}$      | \bigdoublecurlywedge      | <u>_</u>     | 7                      |                           |
| W            | M                 | \bigdoublecurlyvee        | J            | J                      | \int                      |
| $\bigcap$    |                   | \bigcap                   | $\iint$      |                        | \iint                     |
| $\bigcup$    | Ũ                 | \bigcup                   | $\mathbb{M}$ | ſſſ                    | \iiint                    |
| $\cap$       | $\bigcirc$        | \bigcapdot                | ))))         | JJJ                    | \111IIC                   |
| $\bigcup$    | $\bigcup$         | \bigcupdot                | $\iiint$     |                        | \iiiint                   |
| +            | +                 | \bigcapplus               | [[           | []                     | \idotsint, \dotsint       |
| +            | +                 | \bigcupplus, \biguplus    | , ,          | )<br>)                 |                           |
| П            |                   | \bigsqcap                 | ∱·           | ታ                      | \landupint, \intclockwise |
|              |                   |                           |              |                        |                           |

```
\landdownint, \awint,
                                       \ointctrclockwise
                                     \lcirclerightint,
 \intctrclockwise
                                       \vert varoint clockwise
\intbar
                                     \rcircleleftint,
\intBar
                                       \varointctrclockwise
\fint
                                     \lcircleleftint,
                                       \ointclockwise
\olimits
                                     \sumint
\oiint
                            П
                                     \smallprod
                                     \smallcoprod
                            Ц
\oiiint
                                     \smallint
\rcirclerightint,
                                     \surd
```

### 4.6 Delimiters and accents

| $\left( \left( \left( \left( \left( \right. \right) \right) \right) \right) \right)$ | (,\lparen  | rr <sub>rr</sub>   | \ullcorner     |
|--|------------|--|----------------|
| )))))  | ), \rparen | <sup>دو</sup> وو   | \ulrcorner     |
| ]]]]   | [,\lbrack  |  | \lsem, \lBrack |
| ]]]]]  | ],\rbrack  |  | \rsem, \rBrack |
|  | \lfloor    | -<br>{{{{{   | \lbrace,\{     |
|  | \rfloor    | }}}}   | \rbrace,\}     |
|  | \lceil     | $\langle \langle $ | \langle        |
| וןןןן  | \rceil     | $\rangle\rangle\rangle\rangle$   | \rangle        |
|  | \ulcorner  | <b>               </b>   | \lAngle        |
| 7777   | \urcorner  | »»»»»»»»»»»»»»»»»»»»»»»»»»»»»»»»»»»»»»   | \rAngle        |
| LLLL   | \llcorner  | \·\\\\\  | \langledot     |
| <sup>- د</sup> در  | \lrcorner  | $\rangle\rangle\rangle\rangle\rangle$  | \rangledot     |



## 4.7 Faked symbols

The following symbols are taken from the text font or another math font (in case of \Re and \Im).

ℜ \Re \dagger † ‡ \ddagger ℑ \Im 9 \mathparagraph ħ \hbar 1 \mathsection ħ \hslash \$ \mathdollar (R) \circledR £ \mathsterling ¥ (S) \circledS \yen

#### 4.8 Missing symbols

The following symbols from Computer Modern or the AMS fonts are missing in FdSymbol. If available, they should be taken from the text font.

\aleph\eth\lhook\beth\digamma\rhook\gimel\varkappa\diagup\daleth\Bbbk\diagdown

\mho \backepsilon \nabla \mapstochar

## 5 Implementation

We use xkeyval's key mechanism to declare all options. The first options determines the size of delimiters.

3\define@boolkey{fdsymbol.sty}[fdsy@]{largedelims}[true]{}

The next option allows to scale the fonts by an arbitrary factor.

- 4 \newcommand{\fdsy@scale}{1.0}
- 5 \define@key{fdsymbol.sty}{scale}{\renewcommand\fdsy@scale{#1}}

The following two options control which weights are used for which math version and font size.

- 6 \newcommand\fdsy@mweight{Book}
- 7 \newcommand\fdsy@msweight{Book}
- 8 \newcommand\fdsy@bweight{Medium}
- 9 \newcommand\fdsy@bsweight{Medium}
- 10 \define@choicekey\*{fdsymbol.sty}{normalweight}[\@tempa\@tempb]{book,regular,auto}{%
- 11 \ifcase\@tempb\relax
- 12 \renewcommand\fdsy@mweight{Book}
- 13 \renewcommand\fdsy@msweight{Book}
- 14 \or
- 15 \renewcommand\fdsy@mweight{Regular}

```
\renewcommand\fdsy@msweight{Regular}
16
17
    \or
18
      \renewcommand\fdsy@mweight{Book}
19
      \renewcommand\fdsy@msweight{Regular}
20
21 \define@choicekey*{fdsymbol.sty}{boldweight}[\@tempa\@tempb]{medium,bold,auto}{%
    \ifcase\@tempb\relax
22
23
      \renewcommand\fdsy@bweight{Medium}
24
      \renewcommand\fdsy@bsweight{Medium}
    \or
25
26
      \renewcommand\fdsy@bweight{Bold}
      \renewcommand\fdsy@bsweight{Bold}
27
28
      \renewcommand\fdsy@bweight{Medium}
29
30
      \renewcommand\fdsy@bsweight{Bold}
    \fi}
31
32
33 \ExecuteOptionsX{largedelims=false}
34 \ProcessOptionsX
Load external packages, but only if they are not already loaded in order to avoid
warning messages about loading a package twice with different options.
35 \@ifpackageloaded{amsmath}{}{\RequirePackage{amsmath}}
36 \@ifpackageloaded{textcomp}{}{\RequirePackage{textcomp}}
37 \@ifundefined{mathfrak}{\RequirePackage{eufrak}}{}
If the option largedelims has been selected, we readjust the scaling factors of big
delimiters, so that \Big, \bigg and \Bigg do not change their size.
38\iffdsy@largedelims
    \renewcommand{\Big}{\bBigg@{1.25}}
    \renewcommand{\bigg}{\bBigg@{1.66}}
    \label{ligg} $$\operatorname{\Bigg0{2.08}}$
42\fi
Some symbols missing from FdSymbol can be obtained from other fonts or by
combining several other symbols.
43 \DeclareRobustCommand{\dagger}{\fdsy@text{\textdagger}}
44 \DeclareRobustCommand{\ddagger}{\fdsy@text{\textdaggerdbl}}
45 \DeclareRobustCommand{\mathparagraph}{\fdsy@text{\textparagraph}}
46 \DeclareRobustCommand{\mathsection}{\fdsy@text{\textsection}}
47 \DeclareRobustCommand{\mathdollar}{\fdsy@text{\textdollar}}
48 \DeclareRobustCommand{\mathsterling}{\fdsy@text{\textsterling}}
49 \DeclareRobustCommand{\ven}{\fdsy@text{\textyen}}
50 \DeclareRobustCommand{\circledR}{\fdsy@text{\textcircled{%
    \check@mathfonts\fontsize\sf@size\z@\math@fontsfalse\selectfont R}}}
52 \DeclareRobustCommand{\circledS}{\fdsy@text{\textcircled{%
    \check@mathfonts\fontsize\sf@size\z@\math@fontsfalse\selectfont S}}}
```

```
54 \DeclareRobustCommand{\Re}{\mathfrak{R}}
55 \DeclareRobustCommand{\Im}{\mathfrak{I}}
56 \DeclareRobustCommand{\dotplus}{\mathbin{\dot{+}}}
57 \DeclareRobustCommand{\dotcong}{\mathrel{\dot{\cong}}}
58 \DeclareRobustCommand{\thicksim}{\mathrel{\text{\boldmath$\m@th\sim$}}}
59 \DeclareRobustCommand{\thickapprox}{\mathrel{\text{\boldmath$\m@th\approx$}}}
60 \let\hbar\undefined
61 \let\hslash\undefined
62 \DeclareRobustCommand{\hbar}{\middlebar h}
63 \DeclareRobustCommand{\hslash}{\middleslash h}
64 \DeclareRobustCommand{\veebar}{\mathbin{\underline{\vee}}}
65 \DeclareRobustCommand{\barwedge}{\mathbin{\overline{\wedge}}}
66 \DeclareRobustCommand{\veedoublebar}{\mathbin{\underline{\underline{\vee}}}}
67 \DeclareRobustCommand{\doublebarwedge}{\mathbin{\overline{\overline{\wedge}}}}
68 \DeclareRobustCommand{\centerdot}{\mathbin{\rule{0.15em}{0.15em}}}
69 \DeclareRobustCommand{\divideontimes}{\mathbin{\ooalign{$\div$\crcr$\times$}}}
Unneeded partial symbols.
70 \let\mapstochar\undefined
71 \let\lhook\undefined
72 \let\rhook\undefined
Short hands to simplify the definitions below.
73 \newcommand\fdsy@setslot[1]{\@tempcnta #1\relax}
74 \newcommand\fdsy@nextslot{\advance\@tempcnta 1\relax}
75 \newcommand\fdsy@prevslot{\advance\@tempcnta-1\relax}
76
77 \newcommand\fdsy@@DeclareSymbol[4]{\DeclareMathSymbol{#2}{#3}{#4}{#1}}
78 \newcommand\fdsy@DeclareSymbol[3] {%
79
    \if\relax\noexpand#1\let#1\undefined\fi
    \fdsy@nextslot}
82 \newcommand\fdsy@DeclareAlias[3]{\fdsy@prevslot\fdsy@DeclareSymbol{#1}{#2}{#3}}
83 \newcommand\fdsy@DeclareOperator[3] {\def#1{\DOTSB#3\slimits@}}
84 \newcommand\fdsy@DeclareIntegral[3] {\def#1{\DOTSI#3\ilimits@}}
85 \newcommand\fdsy@DeclareDelimiter[4] {%
    \if\relax\noexpand#1\let#1\undefined\fi
    \DeclareMathDelimiter{#1}{#2}{#3}{#4}{#3}{#4}}
88 \newcommand\fdsy@DeclareOpen[3] {\fdsy@DeclareDelimiter{#1} {\mathopen}{#2}{#3}}
89 \newcommand\fdsy@DeclareClose[3] {\fdsy@DeclareDelimiter{#1} {\mathclose} {#2} {#3}}
Font definitions.
90 \DeclareFontFamily{U}{FdSymbolA}{}
91 \DeclareFontFamily{U}{FdSymbolB}{}
92 \DeclareFontFamily{U}{FdSymbolC}{}
93 \DeclareFontFamily{U}{FdSymbolD}{}
94 \DeclareFontFamily{U}{FdSymbolE}{}
```

```
95 \DeclareFontFamily{U}{FdSymbolF}{}
96
97 \DeclareFontShape{U}{FdSymbolA}{m}{n}{
       <-7.1> s * [\fdsy@scale] FdSymbolA-\fdsy@msweight
98
       <7.1-> s * [\fdsy@scale] FdSymbolA-\fdsy@mweight
99
100 }{}
101 \DeclareFontShape{U}{FdSymbolA}{b}{n}{
102
       <-7.1> s * [\fdsy@scale] FdSymbolA-\fdsy@bsweight
       <7.1-> s * [\fdsy@scale] FdSymbolA-\fdsy@bweight
103
104 }{}
105 \DeclareFontShape{U}{FdSymbolB}{m}{n}{
       <-7.1> s * [\fdsy@scale] FdSymbolB-\fdsy@msweight
107
       <7.1-> s * [\fdsy@scale] FdSymbolB-\fdsy@mweight
108 }{}
109 \DeclareFontShape{U}{FdSymbolB}{b}{n}{
       <-7.1> s * [\fdsy@scale] FdSymbolB-\fdsy@bsweight
110
       <7.1-> s * [\fdsy@scale] FdSymbolB-\fdsy@bweight
111
112 }{}
113 \DeclareFontShape{U}{FdSymbolC}{m}{n}{
114
       <-7.1> s * [\fdsy@scale] FdSymbolC-\fdsy@msweight
       <7.1-> s * [\fdsy@scale] FdSymbolC-\fdsy@mweight
115
116 }{}
117 \DeclareFontShape{U}{FdSymbolC}{b}{n}{
       <-7.1> s * [\fdsy@scale] FdSymbolC-\fdsy@bsweight
       <7.1-> s * [\fdsy@scale] FdSymbolC-\fdsy@bweight
119
120 }{}
121 \DeclareFontShape{U}{FdSymbolD}{m}{n}{
       <-7.1> s * [\fdsy@scale] FdSymbolD-\fdsy@msweight
122
       <7.1-> s * [\fdsy@scale] FdSymbolD-\fdsy@mweight
123
124 }{}
125 \DeclareFontShape{U}{FdSymbolD}{b}{n}{
       <-7.1> s * [\fdsy@scale] FdSymbolD-\fdsy@bsweight
126
       <7.1-> s * [\fdsy@scale] FdSymbolD-\fdsy@bweight
127
128 } { }
129 \DeclareFontShape{U}{FdSymbolE}{m}{n}{
130
       <-7.1> s * [\fdsy@scale] FdSymbolE-\fdsy@msweight
       <7.1-> s * [\fdsy@scale] FdSymbolE-\fdsy@mweight
131
132 }{}
133 \DeclareFontShape{U}{FdSymbolE}{b}{n}{
       <-7.1> s * [\fdsy@scale] FdSymbolE-\fdsy@bsweight
134
135
       <7.1-> s * [\fdsy@scale] FdSymbolE-\fdsy@bweight
136 }{}
137 \DeclareFontShape{U}{FdSymbolF}{m}{n}{
       <-7.1> s * [\fdsy@scale] FdSymbolF-\fdsy@msweight
138
139
       <7.1-> s * [\fdsy@scale] FdSymbolF-\fdsy@mweight
```

```
140 }{}
141 \DeclareFontShape{U}{FdSymbolF}{b}{n}{
       <-7.1> s * [\fdsv@scale] FdSvmbolF-\fdsv@bsweight
       <7.1-> s * [\fdsy@scale] FdSymbolF-\fdsy@bweight
143
144 }{}
145
146 \DeclareSymbolFont{symbols}{U}{FdSymbolA}{m}{n}
147 \DeclareSymbolFont{relations}{U}{FdSymbolB}{m}{n}
148 \DeclareSymbolFont{arrows}{U}{FdSymbolC}{m}{n}
149 \DeclareSymbolFont{narrows}{U}{FdSymbolD}{m}{n}
150 \DeclareSymbolFont{largesymbols}{U}{FdSymbolE}{m}{n}
151 \DeclareSymbolFont{delimiters}{U}{FdSymbolF}{m}{n}
\label{localize} $$152 \SetSymbolFont{symbols}{bold}{U}{FdSymbolA}{b}{n}$
153 \SetSymbolFont{relations}{bold}{U}{FdSymbolB}{b}{n}
154 \SetSymbolFont{arrows}{bold}{U}{FdSymbolC}{b}{n}
155 \SetSymbolFont{narrows}{bold}{U}{FdSymbolD}{b}{n}
156 \SetSymbolFont{largesymbols}{bold}{U}{FdSymbolE}{b}{n}
157 \SetSymbolFont{delimiters}{bold}{U}{FdSymbolF}{b}{n}
At the moment, we still use cmsy for the calligraphic alphabet.
158 \DeclareMathAlphabet{\mathcal}{OMS}{cmsy}{m}{n}
159 \SetMathAlphabet{\mathcal}{bold}{OMS}{cmsy}{b}{n}
A command to take math symbols from text fonts.
160 \newcommand\fdsy@bold{bold}
161 \newcommand\fdsy@text[1]{%
     \ifx\fdsy@bold\math@version
       \text{\bfseries#1}%
163
164
    \else
       \text{\mdseries#1}%
165
    \fi}
166
FdSymbolA: binary operators and ordinary symbols
167 \fdsy@setslot{0}
168 \fdsy@DeclareSymbol{\cdot}{symbols}{\mathbin}
     \fdsy@DeclareAlias{\cdotp}{symbols}{\mathpunct}
170 \fdsy@DeclareSymbol{\hdotdot}{symbols}{\mathbin}
171 \fdsy@DeclareSymbol{\vdotdot}{symbols}{\mathbin}
     \fdsy@DeclareAlias{\colon}{symbols}{\mathpunct}
172
     \fdsy@DeclareAlias{\mathcolon}{symbols}{\mathpunct}
173
     \fdsy@DeclareAlias{\mathratio}{symbols}{\mathrel}
174
175 \fdsy@DeclareSymbol{\udotdot}{symbols}{\mathbin}
176 \fdsy@DeclareSymbol{\ddotdot}{symbols}{\mathbin}
177 \fdsy@DeclareSymbol{\hdots}{symbols}{\mathord}
     \fdsy@DeclareAlias{\@cdots}{symbols}{\mathinner}
     \let\cdots\@cdots
180 \fdsy@DeclareSymbol{\@vdots}{symbols}{\mathord}
```

```
181 \DeclareRobustCommand{\vdots}{\ifmmode\@vdots\else\hbox{$\@vdots$}\fi}
182 \fdsy@DeclareSymbol{\udots}{symbols}{\mathord}
     \fdsv@DeclareAlias{\adots}{svmbols}{\mathord}
184 \fdsy@DeclareSymbol{\ddots}{symbols}{\mathord}
185 \fdsv@DeclareSvmbol{\righttherefore}{svmbols}{\mathord}
186 \fdsy@DeclareSymbol{\uptherefore}{symbols}{\mathord}
     \fdsy@DeclareAlias{\therefore}{symbols}{\mathord}
188 \fdsy@DeclareSymbol{\lefttherefore}{symbols}{\mathord}
189 \fdsy@DeclareSymbol{\downtherefore}{symbols}{\mathord}
     \fdsy@DeclareAlias{\because}{symbols}{\mathord}
190
191
    fdsy@DeclareSymbol{\squaredots}{symbols}{\mathord}
    \fdsy@DeclareAlias{\Colon}{symbols}{\mathrel}
192
193 \fdsy@DeclareSymbol{\minus}{symbols}{\mathbin}
194 \fdsy@DeclareSymbol{\medslash}{symbols}{\mathbin}
     \fdsy@DeclareAlias{\smalldivslash}{symbols}{\mathbin}
196 \fdsy@DeclareSymbol{\medbackslash}{symbols}{\mathbin}
     \fdsy@DeclareAlias{\smallsetminus}{symbols}{\mathbin}
198 \fdsy@DeclareSymbol{\plus}{symbols}{\mathbin}
199 \fdsv@DeclareSvmbol{\times}{svmbols}{\mathbin}
200 \fdsy@DeclareSymbol{\pm}{symbols}{\mathbin}
201\fdsy@DeclareSymbol{\mp}{symbols}{\mathbin}
202 \fdsy@DeclareSymbol{\dotminus}{symbols}{\mathbin}
203 \fdsy@DeclareSymbol{\minusdot}{symbols}{\mathbin}
204 \fdsy@DeclareSymbol{\minusfdots}{symbols}{\mathbin}
205 \fdsy@DeclareSymbol{\minusrdots}{symbols}{\mathbin}
206 \fdsy@DeclareSymbol{\dotsminusdots}{symbols}{\mathbin}
207 \fdsy@DeclareSymbol{\div}{symbols}{\mathbin}
208 \fdsy@DeclareSymbol{\neg}{symbols}{\mathord}
209
     \fdsy@DeclareAlias{\lnot}{symbols}{\mathord}
    \fdsv@DeclareAlias{\minushookdown}{svmbols}{\mathbin}
210
  \fdsy@DeclareSymbol{\backneg}{symbols}{\mathord}
    \fdsy@DeclareAlias{\hookdownminus}{symbols}{\mathbin}
212
     \fdsy@DeclareAlias{\invneg}{symbols}{\mathord}
213
    \fdsy@DeclareAlias{\invnot}{symbols}{\mathord}
214
215 \fdsv@DeclareSvmbol{\intprod}{svmbols}{\mathbin}
216
    \fdsy@DeclareAlias{\minushookup}{symbols}{\mathbin}
    \fdsy@DeclareAlias{\turnedneg}{symbols}{\mathord}
217
    \fdsy@DeclareAlias{\turnednot}{symbols}{\mathord}
218
   fdsy@DeclareSymbol{\intprodr}{symbols}{\mathbin}
219
     \fdsy@DeclareAlias{\hookupminus}{symbols}{\mathbin}
220
221
    \fdsy@DeclareAlias{\turnedbackneg}{symbols}{\mathord}
222 \fdsy@DeclareSymbol{\leftthreetimes}{symbols}{\mathbin}
223 \fdsy@DeclareSymbol{\rightthreetimes}{symbols}{\mathbin}
224 \fdsy@DeclareSymbol{\dtimes}{symbols}{\mathbin}
```

\fdsy@DeclareAlias{\btimes}{symbols}{\mathbin}

```
226 \fdsy@DeclareSymbol{\rtimes}{symbols}{\mathbin}
     \fdsy@DeclareAlias{\rJoin}{symbols}{\mathrel}
  \fdsv@DeclareSvmbol{\utimes}{svmbols}{\mathbin}
228
     \fdsy@DeclareAlias{\ttimes}{symbols}{\mathbin}
229
230 \fdsv@DeclareSvmbol{\ltimes}{svmbols}{\mathbin}
     \fdsy@DeclareAlias{\lJoin}{symbols}{\mathrel}
232 \fdsy@DeclareSymbol{\bowtie}{symbols}{\mathrel}
     \fdsy@DeclareAlias{\Join}{symbols}{\mathrel}
     \fdsy@DeclareAlias{\lrtimes}{symbols}{\mathbin}
234
235 \fdsy@DeclareSymbol{\upbowtie}{symbols}{\mathbin}
    \fdsy@DeclareAlias{\hourglass}{symbols}{\mathbin}
236
237 \fdsy@DeclareSymbol{\rightY}{symbols}{\mathbin}
238 \fdsy@DeclareSymbol{\upY}{symbols}{\mathbin}
239 \fdsy@DeclareSymbol{\leftY}{symbols}{\mathbin}
240 \fdsy@DeclareSymbol{\downY}{symbols}{\mathbin}
241 \fdsy@DeclareSymbol{\wedge}{symbols}{\mathbin}
     \fdsy@DeclareAlias{\land}{symbols}{\mathbin}
242
   fdsy@DeclareSymbol{\vee}{symbols}{\mathbin}
     \fdsv@DeclareAlias{\lor}{svmbols}{\mathbin}
245 \fdsy@DeclareSymbol{\wedgedot}{symbols}{\mathbin}
246 \fdsv@DeclareSvmbol{\veedot}{svmbols}{\mathbin}
  \fdsy@DeclareSymbol{\doublewedge}{symbols}{\mathbin}
     \fdsy@DeclareAlias{\wedgeonwedge}{symbols}{\mathbin}
248
  \fdsy@DeclareSymbol{\doublevee}{symbols}{\mathbin}
    \fdsy@DeclareAlias{\veeonvee}{symbols}{\mathbin}
250
251 \fdsy@DeclareSymbol{\curlywedge}{symbols}{\mathbin}
252 \fdsy@DeclareSymbol{\curlyvee}{symbols}{\mathbin}
253 \fdsy@DeclareSymbol{\curlywedgedot}{symbols}{\mathbin}
254 \fdsy@DeclareSymbol{\curlyveedot}{symbols}{\mathbin}
255 \fdsv@DeclareSymbol{\doublecurlywedge}{symbols}{\mathbin}
256 \fdsy@DeclareSymbol{\doublecurlyvee}{symbols}{\mathbin}
257 \fdsy@DeclareSymbol{\cup}{symbols}{\mathbin}
258 \fdsy@DeclareSymbol{\cap}{symbols}{\mathbin}
259 \fdsy@DeclareSymbol{\doublecup}{symbols}{\mathbin}
     \fdsv@DeclareAlias{\Cup}{svmbols}{\mathbin}
260
261 \fdsy@DeclareSymbol{\doublecap}{symbols}{\mathbin}
     \fdsy@DeclareAlias{\Cap}{symbols}{\mathbin}
262
263 \fdsy@DeclareSymbol{\cupdot}{symbols}{\mathbin}
264 \fdsy@DeclareSymbol{\capdot}{symbols}{\mathbin}
265 \fdsy@DeclareSymbol{\cupplus}{symbols}{\mathbin}
266
     \fdsy@DeclareAlias{\uplus}{symbols}{\mathbin}
267 \fdsy@DeclareSymbol{\capplus}{symbols}{\mathbin}
268 \fdsy@DeclareSymbol{\sqcup}{symbols}{\mathbin}
269 \fdsy@DeclareSymbol{\sqcap}{symbols}{\mathbin}
270 \fdsy@DeclareSymbol{\doublesqcup}{symbols}{\mathbin}
```

```
\fdsy@DeclareAlias{\Sqcup}{symbols}{\mathbin}
272 \fdsy@DeclareSymbol{\doublesqcap}{symbols}{\mathbin}
     \fdsv@DeclareAlias{\Sqcap}{svmbols}{\mathbin}
274 \fdsy@DeclareSymbol{\sqcupdot}{symbols}{\mathbin}
275 \fdsv@DeclareSvmbol{\sqcapdot}{svmbols}{\mathbin}
276 \fdsy@DeclareSymbol{\sqcupplus}{symbols}{\mathbin}
277 \fdsy@DeclareSymbol{\sqcapplus}{symbols}{\mathbin}
278 \fdsy@DeclareSymbol{\pullback}{symbols}{\mathbin}
279 \fdsy@DeclareSymbol{\pushout}{symbols}{\mathbin}
280 \fdsy@DeclareSymbol{\smalltriangleright}{symbols}{\mathbin}
281 \fdsy@DeclareSymbol{\smalltriangleup}{symbols}{\mathbin}
282 \fdsy@DeclareSymbol{\smalltriangleleft}{symbols}{\mathbin}
283 \fdsy@DeclareSymbol{\smalltriangledown}{symbols}{\mathbin}
284 \fdsv@DeclareSymbol{\smallblacktriangleright}{symbols}{\mathbin}
285 \fdsy@DeclareSymbol{\smallblacktriangleup}{symbols}{\mathbin}
286 \fdsy@DeclareSymbol{\smallblacktriangleleft}{symbols}{\mathbin}
  \fdsy@DeclareSymbol{\smallblacktriangledown}{symbols}{\mathbin}
   fdsy@DeclareSymbol{\medtriangleright}{symbols}{\mathbin}
     \fdsv@DeclareAlias{\triangleright}{svmbols}{\mathbin}
289
290
  \fdsy@DeclareSymbol{\medtriangleup}{symbols}{\mathbin}
     \fdsv@DeclareAlias{\triangle}{svmbols}{\mathbin}
291
     \fdsy@DeclareAlias{\vartriangle}{symbols}{\mathbin}
292
   fdsy@DeclareSymbol{\medtriangleleft}{symbols}{\mathbin}
293 \
     \fdsy@DeclareAlias{\triangleleft}{symbols}{\mathbin}
294
    fdsy@DeclareSymbol{\medtriangledown}{symbols}{\mathbin}
295
     \fdsy@DeclareAlias{\triangledown}{symbols}{\mathbin}
296
   fdsy@DeclareSymbol{\medblacktriangleright}{symbols}{\mathbin}
297
     \fdsy@DeclareAlias{\blacktriangleright}{symbols}{\mathbin}
298
    fdsy@DeclareSymbol{\medblacktriangleup}{symbols}{\mathbin}
299
     \fdsv@DeclareAlias{\blacktriangle}{svmbols}{\mathbin}
300
   fdsy@DeclareSymbol{\medblacktriangleleft}{symbols}{\mathbin}
301
     \fdsy@DeclareAlias{\blacktriangleleft}{symbols}{\mathbin}
302
   fdsy@DeclareSymbol{\medblacktriangledown}{symbols}{\mathbin}
303
     \fdsy@DeclareAlias{\blacktriangledown}{symbols}{\mathbin}
304
   .fdsv@DeclareSymbol{\largetriangleup}{symbols}{\mathord}
305
306
     \fdsy@DeclareAlias{\bigtriangleup}{symbols}{\mathbin}
   fdsy@DeclareSymbol{\largetriangledown}{symbols}{\mathord}
307
     \fdsy@DeclareAlias{\bigtriangledown}{symbols}{\mathbin}
308
    fdsv@DeclareSymbol{\smallcircle}{symbols}{\mathbin}
309
     \fdsy@DeclareAlias{\circ}{symbols}{\mathbin}
310
311
     \fdsy@DeclareAlias{\smwhtcircle}{symbols}{\mathbin}
   fdsy@DeclareSymbol{\smallblackcircle}{symbols}{\mathbin}
312 \
     \fdsy@DeclareAlias{\bullet}{symbols}{\mathbin}
313
     \fdsy@DeclareAlias{\smblkcircle}{symbols}{\mathbin}
315 \fdsy@DeclareSymbol{\medcircle}{symbols}{\mathbin}
```

```
\fdsy@DeclareAlias{\mdlgwhtcircle}{symbols}{\mathbin}
317 \fdsy@DeclareSymbol{\medblackcircle}{symbols}{\mathbin}
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320 \fdsv@DeclareSvmbol{\overt}{svmbols}{\mathbin}
     \fdsy@DeclareAlias{\circledvert}{symbols}{\mathbin}
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    fdsy@DeclareSymbol{\obackslash}{symbols}{\mathbin}
     \fdsy@DeclareAlias{\obslash}{symbols}{\mathbin}
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     \fdsv@DeclareAlias{\circledcirc}{svmbols}{\mathbin}
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    fdsy@DeclareSymbol{\oast}{symbols}{\mathbin}
     \fdsy@DeclareAlias{\circledast}{symbols}{\mathbin}
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   fdsy@DeclareSymbol{\odash}{symbols}{\mathbin}
332
     \fdsy@DeclareAlias{\circleddash}{symbols}{\mathbin}
333
   fdsv@DeclareSvmbol{\oequal}{svmbols}{\mathbin}
334 \
     \fdsy@DeclareAlias{\circledequal}{symbols}{\mathbin}
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  \fdsv@DeclareSvmbol{\emptyset}{svmbols}{\mathord}
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     \fdsy@DeclareAlias{\diameter}{symbols}{\mathord}
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     \fdsy@DeclareAlias{\varnothing}{symbols}{\mathord}
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   fdsy@DeclareSymbol{\largecircle}{symbols}{\mathord}
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     \fdsy@DeclareAlias{\bigcirc}{symbols}{\mathord}
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   fdsy@DeclareSymbol{\largeblackcircle}{symbols}{\mathord}
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     \fdsy@DeclareAlias{\lgblkcircle}{symbols}{\mathord}
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   fdsv@DeclareSvmbol{\smallsquare}{svmbols}{\mathbin}
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     \fdsy@DeclareAlias{\smwhtsquare}{symbols}{\mathbin}
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    fdsy@DeclareSymbol{\smallblacksquare}{symbols}{\mathbin}
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     \fdsy@DeclareAlias{\smblksquare}{symbols}{\mathbin}
348
   .fdsy@DeclareSymbol{\medsquare}{symbols}{\mathbin}
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     \fdsv@DeclareAlias{\square}{svmbols}{\mathbin}
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    \fdsy@DeclareAlias{\Box}{symbols}{\mathbin}
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    \fdsy@DeclareAlias{\mdlgwhtsquare}{symbols}{\mathbin}
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     \fdsy@DeclareAlias{\mdwhtsquare}{symbols}{\mathbin}
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    fdsy@DeclareSymbol{\medblacksquare}{symbols}{\mathbin}
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     \fdsy@DeclareAlias{\mdlgblksquare}{symbols}{\mathbin}
355
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   fdsy@DeclareSymbol{\boxvert}{symbols}{\mathbin}
     \fdsy@DeclareAlias{\boxbar}{symbols}{\mathbin}
360 \fdsy@DeclareSymbol{\boxslash}{symbols}{\mathbin}
```

```
\fdsy@DeclareAlias{\boxdiag}{symbols}{\mathbin}
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363
364 \fdsy@DeclareSymbol{\boxplus}{symbols}{\mathbin}
365 \fdsv@DeclareSvmbol{\boxtimes}{svmbols}{\mathbin}
366 \fdsy@DeclareSymbol{\boxdot}{symbols}{\mathbin}
367\fdsv@DeclareSvmbol{\boxbox}{svmbols}{\mathbin}
    fdsy@DeclareSymbol{\largesquare}{symbols}{\mathord}
     \fdsy@DeclareAlias{\lgwhtsquare}{symbols}{\mathord}
369
370
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     \fdsy@DeclareAlias{\diamond}{symbols}{\mathbin}
373
     \fdsv@DeclareAlias{\smwhtdiamond}{svmbols}{\mathbin}
374
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     \fdsv@DeclareAlias{\blackdiamond}{symbols}{\mathbin}
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   fdsy@DeclareSymbol{\meddiamond}{symbols}{\mathbin}
378
     \fdsv@DeclareAlias{\Diamond}{svmbols}{\mathbin}
379
380
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    \fdsv@DeclareAlias{\mdwhtdiamond}{svmbols}{\mathbin}
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     \fdsv@DeclareAlias{\mdlgblkdiamond}{svmbols}{\mathbin}
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385 \fdsy@DeclareSymbol{\diamondminus}{symbols}{\mathbin}
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     \fdsy@DeclareAlias{\diamondbslash}{symbols}{\mathbin}
390 \fdsv@DeclareSvmbol{\diamondplus}{svmbols}{\mathbin}
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   fdsy@DeclareSymbol{\diamonddot}{symbols}{\mathbin}
     \fdsy@DeclareAlias{\diamondcdot}{symbols}{\mathbin}
394 \fdsy@DeclareSymbol{\diamonddiamond}{symbols}{\mathbin}
  \fdsv@DeclareSvmbol{\smalllozenge}{svmbols}{\mathord}
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     \fdsy@DeclareAlias{\smblklozenge}{symbols}{\mathord}
398
    fdsy@DeclareSymbol{\medlozenge}{symbols}{\mathord}
399
    \fdsy@DeclareAlias{\lozenge}{symbols}{\mathord}
400
401
    \fdsy@DeclareAlias{\mdlgwhtlozenge}{symbols}{\mathord}
402
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   fdsy@DeclareSymbol{\medblacklozenge}{symbols}{\mathord}
     \fdsy@DeclareAlias{\blacklozenge}{symbols}{\mathord}
404
    \fdsy@DeclareAlias{\mdlgblklozenge}{symbols}{\mathord}
```

```
\fdsy@DeclareAlias{\mdblklozenge}{symbols}{\mathord}
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410 \fdsv@DeclareSvmbol{\smallblackstar}{svmbols}{\mathbin}
     \fdsy@DeclareAlias{\star}{symbols}{\mathbin}
412 \fdsy@DeclareSymbol{\medwhitestar}{symbols}{\mathbin}
    fdsy@DeclareSymbol{\medblackstar}{symbols}{\mathbin}
     \fdsy@DeclareAlias{\medstar}{symbols}{\mathbin}
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438 \fdsy@DeclareSymbol{\sphericalangleup}{symbols}{\mathord}
439 \fdsy@DeclareSymbol{\sphericalangleleft}{symbols}{\mathord}
     \fdsv@DeclareAlias{\revsphericalangle}{svmbols}{\mathord}
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     \fdsy@DeclareAlias{\gtlpar}{symbols}{\mathord}
442 \fdsy@DeclareSymbol{\sphericalangledown}{symbols}{\mathord}
443 \fdsy@DeclareSymbol{\rightangle}{symbols}{\mathord}
444 \fdsy@DeclareSymbol{\measuredrightangle}{symbols}{\mathord}
445 \fdsy@DeclareSymbol{\rightanglesquare}{symbols}{\mathord}
     \fdsy@DeclareAlias{\rightanglesqr}{symbols}{\mathord}
447\fdsy@DeclareSymbol{\measuredrightangledot}{symbols}{\mathord}
     \fdsy@DeclareAlias{\rightanglemdot}{symbols}{\mathord}
449 \fdsy@DeclareSymbol{\prime}{symbols}{\mathord}
450 \fdsy@DeclareSymbol{\backprime}{symbols}{\mathord}
```

```
451 \fdsy@DeclareSymbol{\smallprod}{symbols}{\mathop}
452 \fdsy@DeclareSymbol{\smallcoprod}{symbols}{\mathop}
     \fdsv@DeclareAlias{\amalg}{svmbols}{\mathbin}
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455 \fdsy@DeclareSymbol{\checkmark}{symbols}{\mathord}
456 \fdsy@DeclareSymbol{\lightning}{symbols}{\mathord}
     \fdsy@DeclareAlias{\downzigzagarrow}{symbols}{\mathord}
458 \fdsy@DeclareSymbol{\diamondsuit}{symbols}{\mathord}
459 \fdsy@DeclareSymbol{\vardiamondsuit}{symbols}{\mathord}
460 \fdsy@DeclareSymbol{\heartsuit}{symbols}{\mathord}
461 \fdsy@DeclareSymbol{\varheartsuit}{symbols}{\mathord}
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463 \fdsy@DeclareSymbol{\clubsuit}{symbols}{\mathord}
464 \fdsy@DeclareSymbol{\maltese}{symbols}{\mathord}
465 \fdsy@DeclareSymbol{\starofdavid}{symbols}{\mathord}
466 \fdsy@DeclareSymbol{\sector}{symbols}{\mathord}
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469 \fdsy@DeclareSymbol{\nexists}{symbols}{\mathord}
470 \fdsy@DeclareSymbol{\Finv}{symbols}{\mathord}
471 \fdsy@DeclareSymbol{\Game}{symbols}{\mathord}
472 \fdsy@DeclareSymbol{\complement}{symbols}{\mathord}
473 \fdsy@DeclareSymbol{\flat}{symbols}{\mathord}
474 \fdsy@DeclareSymbol{\natural}{symbols}{\mathord}
475 \fdsy@DeclareSymbol{\sharp}{symbols}{\mathord}
476\iffalse
477 \fdsy@DeclareSymbol{\aleph}{symbols}{\mathord}
478 \fdsy@DeclareSymbol{\beth}{symbols}{\mathord}
479 \fdsy@DeclareSymbol{\gimel}{symbols}{\mathord}
480 \fdsy@DeclareSymbol{\daleth}{symbols}{\mathord}
481\fi
482 \fdsy@setslot{202}
483 \fdsy@DeclareSymbol{\wp}{symbols}{\mathord}
FdSymbolB: relations
484 \fdsy@setslot{0}
485 \fdsy@DeclareSymbol{\equal}{relations}{\mathrel}
486 \fdsy@DeclareSymbol{\equiv}{relations}{\mathrel}
487 \fdsy@DeclareSymbol{\sim}{relations}{\mathrel}
488 \fdsy@DeclareSymbol{\backsim}{relations}{\mathrel}
489 \fdsy@DeclareSymbol{\approx}{relations}{\mathrel}
490 \fdsy@DeclareSymbol{\triplesim}{relations}{\mathrel}
    \fdsy@DeclareAlias{\approxident}{relations}{\mathrel}
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493 \fdsy@DeclareSymbol{\backsimeq}{relations}{\mathrel}
494 \fdsy@DeclareSymbol{\eqsim}{relations}{\mathrel}
```

```
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496 \fdsy@DeclareSymbol{\backcong}{relations}{\mathrel}
497 \fdsv@DeclareSymbol{\approxeq}{relations}{\mathrel}
498 \fdsy@DeclareSymbol{\bumpeq}{relations}{\mathrel}
499 \fdsy@DeclareSymbol{\bumpeqg}{relations}{\mathrel}
500 \fdsy@DeclareSymbol{\Bumpeq}{relations}{\mathrel}
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502 \fdsy@DeclareSymbol{\eqdot}{relations}{\mathrel}
503 \fdsy@DeclareSymbol{\Doteq}{relations}{\mathrel}
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     \fdsy@DeclareAlias{\smallfrown}{relations}{\mathrel}
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511 \fdsy@DeclareSymbol{\smilefrown}{relations}{\mathrel}
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513 \fdsv@DeclareSymbol{\frownsmile}{relations}{\mathrel}
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526 \fdsy@DeclareSymbol{\in}{relations}{\mathrel}
527 \fdsy@DeclareSymbol{\owns}{relations}{\mathrel}
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529 \fdsv@DeclareSvmbol{\less}{relations}{\mathrel}
530 \fdsy@DeclareSymbol{\gtr}{relations}{\mathrel}
531 \fdsy@DeclareSymbol{\leq}{relations}{\mathrel}
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539 \fdsy@DeclareSymbol{\lesssim}{relations}{\mathrel}
```

```
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     \fdsy@DeclareAlias{\gggtr}{relations}{\mathrel}
556
   fdsy@DeclareSymbol{\lessclosed}{relations}{\mathrel}
557
     \fdsv@DeclareAlias{\lhd}{relations}{\mathbin}
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     \fdsy@DeclareAlias{\vartriangleleft}{relations}{\mathrel}
559
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    \fdsy@DeclareAlias{\vartriangleright}{relations}{\mathrel}
562
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    \fdsy@DeclareAlias{\unlhd}{relations}{\mathbin}
564
     \fdsy@DeclareAlias{\trianglelefteg}{relations}{\mathrel}
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579 \fdsy@DeclareSymbol{\sqsubseteq}{relations}{\mathrel}
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584 \fdsy@DeclareSymbol{\Sqsupset}{relations}{\mathrel}
```

```
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600 \fdsy@DeclareSymbol{\succeqq}{relations}{\mathrel}
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605 \fdsy@DeclareSymbol{\lessdot}{relations}{\mathrel}
606 \fdsy@DeclareSymbol{\gtrdot}{relations}{\mathrel}
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     \fdsy@DeclareAlias{\gesdot}{relations}{\mathrel}
613 \fdsy@DeclareSymbol{\egslantless}{relations}{\mathrel}
614 \fdsy@DeclareSymbol{\eqslantgtr}{relations}{\mathrel}
615 \fdsy@DeclareSymbol{\curlyegprec}{relations}{\mathrel}
616 \fdsy@DeclareSymbol{\curlyeqsucc}{relations}{\mathrel}
617 \fdsy@DeclareSymbol{\nequal}{relations}{\mathrel}
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620 \fdsy@DeclareSymbol{\nequiv}{relations}{\mathrel}
621 \fdsy@DeclareSymbol{\nsim}{relations}{\mathrel}
622 \fdsy@DeclareSymbol{\nbacksim}{relations}{\mathrel}
623 \fdsy@DeclareSymbol{\napprox}{relations}{\mathrel}
624 \fdsy@DeclareSymbol{\ntriplesim}{relations}{\mathrel}
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626 \fdsy@DeclareSymbol{\nsimeq}{relations}{\mathrel}
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629 \fdsy@DeclareSymbol{\neqsim}{relations}{\mathrel}
```

```
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633 \fdsy@DeclareSymbol{\nbumpeq}{relations}{\mathrel}
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637 \fdsy@DeclareSymbol{\neqdot}{relations}{\mathrel}
638 \fdsy@DeclareSymbol{\nDoteg}{relations}{\mathrel}
639 \fdsy@DeclareSymbol{\nfallingdotseq}{relations}{\mathrel}
640 \fdsy@DeclareSymbol{\nrisingdotseq}{relations}{\mathrel}
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     \fdsy@DeclareAlias{\notin}{relations}{\mathrel}
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664 \fdsv@DeclareSvmbol{\ngeg}{relations}{\mathrel}
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674 \fdsy@DeclareSymbol{\ngtrless}{relations}{\mathrel}
```

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675 \fdsy@DeclareSymbol{\nlesseggtr}{relations}{\mathrel}
676 \fdsy@DeclareSymbol{\ngtreqless}{relations}{\mathrel}
677 \fdsv@DeclareSvmbol{\nlessegggtr}{relations}{\mathrel}
678 \fdsy@DeclareSymbol{\ngtreqqless}{relations}{\mathrel}
679 \fdsy@DeclareSymbol{\nlesseggtrslant}{relations}{\mathrel}
680 \fdsy@DeclareSymbol{\ngtreqlessslant}{relations}{\mathrel}
681 \fdsy@DeclareSymbol{\nll}{relations}{\mathrel}
682 \fdsy@DeclareSymbol{\ngg}{relations}{\mathrel}
683 \fdsy@DeclareSymbol{\nlll}{relations}{\mathrel}
684 \fdsy@DeclareSymbol{\nggg}{relations}{\mathrel}
685 \fdsy@DeclareSymbol{\nlessclosed}{relations}{\mathrel}
     \fdsy@DeclareAlias{\ntriangleleft}{relations}{\mathrel}
686
  \fdsy@DeclareSymbol{\ngtrclosed}{relations}{\mathrel}
     \fdsy@DeclareAlias{\ntriangleright}{relations}{\mathrel}
688
689 \fdsy@DeclareSymbol{\nlegclosed}{relations}{\mathrel}
     \fdsy@DeclareAlias{\ntrianglelefteq}{relations}{\mathrel}
690
691\fdsy@DeclareSymbol{\ngeqclosed}{relations}{\mathrel}
    \fdsy@DeclareAlias{\ntrianglerighteq}{relations}{\mathrel}
692
693 \fdsv@DeclareSvmbol{\nlesscc}{relations}{\mathrel}
     \fdsy@DeclareAlias{\nltcc}{relations}{\mathrel}
695 \fdsv@DeclareSvmbol{\ngtrcc}{relations}{\mathrel}
     \fdsy@DeclareAlias{\ngtcc}{relations}{\mathrel}
697\fdsy@DeclareSymbol{\nleqslcc}{relations}{\mathrel}
     \fdsy@DeclareAlias{\nlescc}{relations}{\mathrel}
698
699 \fdsy@DeclareSymbol{\ngeqslcc}{relations}{\mathrel}
    \fdsy@DeclareAlias{\ngescc}{relations}{\mathrel}
701\fdsy@DeclareSymbol{\nsqsubset}{relations}{\mathrel}
702 \fdsy@DeclareSymbol{\nsqsupset}{relations}{\mathrel}
703 \fdsy@DeclareSymbol{\nsgsubseteg}{relations}{\mathrel}
704 \fdsv@DeclareSvmbol{\nsqsupseteq}{relations}{\mathrel}
705 \fdsy@DeclareSymbol{\nsqsubseteqq}{relations}{\mathrel}
706 \fdsy@DeclareSymbol{\nsqsupseteqq}{relations}{\mathrel}
707 \fdsy@DeclareSymbol{\nSqsubset}{relations}{\mathrel}
708 \fdsy@DeclareSymbol{\nSqsupset}{relations}{\mathrel}
709 \fdsv@DeclareSymbol{\nsubset}{relations}{\mathrel}
710 \fdsy@DeclareSymbol{\nsupset}{relations}{\mathrel}
711 \fdsy@DeclareSymbol{\nsubseteg}{relations}{\mathrel}
712 \fdsy@DeclareSymbol{\nsupseteq}{relations}{\mathrel}
713 \fdsy@DeclareSymbol{\nsubseteqq}{relations}{\mathrel}
714 \fdsy@DeclareSymbol{\nsupsetegg}{relations}{\mathrel}
715 \fdsy@DeclareSymbol{\nSubset}{relations}{\mathrel}
716 \fdsy@DeclareSymbol{\nSupset}{relations}{\mathrel}
717 \fdsy@DeclareSymbol{\nprec}{relations}{\mathrel}
718 \fdsy@DeclareSymbol{\nsucc}{relations}{\mathrel}
719 \fdsy@DeclareSymbol{\npreceq}{relations}{\mathrel}
```

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720 \fdsy@DeclareSymbol{\nsucceq}{relations}{\mathrel}
721 \fdsy@DeclareSymbol{\npreccurlyeq}{relations}{\mathrel}
722 \fdsv@DeclareSvmbol{\nsucccurlveg}{relations}{\mathrel}
723 \fdsy@DeclareSymbol{\npreceqq}{relations}{\mathrel}
724 \fdsy@DeclareSymbol{\nsucceqq}{relations}{\mathrel}
725 \fdsy@DeclareSymbol{\nprecsim}{relations}{\mathrel}
726 \fdsy@DeclareSymbol{\nsuccsim}{relations}{\mathrel}
727 \fdsy@DeclareSymbol{\nprecapprox}{relations}{\mathrel}
728 \fdsy@DeclareSymbol{\nsuccapprox}{relations}{\mathrel}
729 \fdsy@DeclareSymbol{\nlessdot}{relations}{\mathrel}
730 \fdsy@DeclareSymbol{\ngtrdot}{relations}{\mathrel}
731 \fdsy@DeclareSymbol{\nleqdot}{relations}{\mathrel}
732 \fdsy@DeclareSymbol{\ngeqdot}{relations}{\mathrel}
733 \fdsy@DeclareSymbol{\nlegslantdot}{relations}{\mathrel}
     \fdsy@DeclareAlias{\nlesdot}{relations}{\mathrel}
735 \fdsy@DeclareSymbol{\ngeqslantdot}{relations}{\mathrel}
     \fdsy@DeclareAlias{\ngesdot}{relations}{\mathrel}
737 \fdsy@DeclareSymbol{\neqslantless}{relations}{\mathrel}
738 \fdsv@DeclareSymbol{\negslantgtr}{relations}{\mathrel}
739 \fdsy@DeclareSymbol{\ncurlyeqprec}{relations}{\mathrel}
740 \fdsy@DeclareSymbol{\ncurlyeqsucc}{relations}{\mathrel}
741 \fdsy@DeclareSymbol{\simneqq}{relations}{\mathrel}
742 \fdsy@DeclareSymbol{\backsimneqq}{relations}{\mathrel}
743 \fdsy@DeclareSymbol{\lneg}{relations}{\mathrel}
744 \fdsy@DeclareSymbol{\gneq}{relations}{\mathrel}
745 \fdsy@DeclareSymbol{\lnegg}{relations}{\mathrel}
    \fdsy@DeclareAlias{\lvertneqq}{relations}{\mathrel}
747 \fdsy@DeclareSymbol{\gneqq}{relations}{\mathrel}
     \fdsy@DeclareAlias{\gvertneqq}{relations}{\mathrel}
749 \fdsy@DeclareSymbol{\lnsim}{relations}{\mathrel}
750 \fdsy@DeclareSymbol{\gnsim}{relations}{\mathrel}
751\fdsy@DeclareSymbol{\lnapprox}{relations}{\mathrel}
752 \fdsy@DeclareSymbol{\gnapprox}{relations}{\mathrel}
753 \fdsy@DeclareSymbol{\lessneqggtr}{relations}{\mathrel}
754 \fdsv@DeclareSymbol{\gtrneggless}{relations}{\mathrel}
755 \fdsy@DeclareSymbol{\sqsubsetneq}{relations}{\mathrel}
756 \fdsy@DeclareSymbol{\sqsupsetneq}{relations}{\mathrel}
757 \fdsy@DeclareSymbol{\sqsubsetneqq}{relations}{\mathrel}
758 \fdsy@DeclareSymbol{\sqsupsetneqq}{relations}{\mathrel}
759 \fdsy@DeclareSymbol{\subsetneg}{relations}{\mathrel}
760
     \fdsy@DeclareAlias{\varsubsetneq}{relations}{\mathrel}
761\fdsy@DeclareSymbol{\supsetneg}{relations}{\mathrel}
     \fdsy@DeclareAlias{\varsupsetneg}{relations}{\mathrel}
763 \fdsy@DeclareSymbol{\subsetnegg}{relations}{\mathrel}
    \fdsy@DeclareAlias{\varsubsetneqg}{relations}{\mathrel}
```

```
765 \fdsy@DeclareSymbol{\supsetneqq}{relations}{\mathrel}
    \fdsy@DeclareAlias{\varsupsetneqq}{relations}{\mathrel}
767 \fdsy@DeclareSymbol{\precneg}{relations}{\mathrel}
768 \fdsy@DeclareSymbol{\succneq}{relations}{\mathrel}
769 \fdsy@DeclareSymbol{\precneqg}{relations}{\mathrel}
770 \fdsy@DeclareSymbol{\succneqq}{relations}{\mathrel}
771 \fdsy@DeclareSymbol{\precnsim}{relations}{\mathrel}
772 \fdsy@DeclareSymbol{\succnsim}{relations}{\mathrel}
773 \fdsy@DeclareSymbol{\precnapprox}{relations}{\mathrel}
774 \fdsy@DeclareSymbol{\succnapprox}{relations}{\mathrel}
775
776 \DeclareRobustCommand{\coloneq}{\mathrel{{\vdotdot}{\equal}}}
777 \let\coloneqq\coloneq
FdSymbolC: arrows
778 \fdsy@setslot{0}
779 \fdsy@DeclareSymbol{\rightarrow}{arrows}{\mathrel}
    \fdsy@DeclareAlias{\to}{arrows}{\mathrel}
781 \fdsy@DeclareSymbol{\uparrow}{arrows}{\mathrel}
782 \fdsy@DeclareSymbol{\leftarrow}{arrows}{\mathrel}
783 \fdsy@DeclareAlias{\gets}{arrows}{\mathrel}
784 \fdsy@DeclareSymbol{\downarrow}{arrows}{\mathrel}
785 \fdsy@DeclareSymbol{\nearrow}{arrows}{\mathrel}
786 \fdsy@DeclareSymbol{\nwarrow}{arrows}{\mathrel}
787 \fdsy@DeclareSymbol{\swarrow}{arrows}{\mathrel}
788 \fdsy@DeclareSymbol{\searrow}{arrows}{\mathrel}
789 \fdsy@DeclareSymbol{\Rightarrow}{arrows}{\mathrel}
790 \fdsy@DeclareSymbol{\Uparrow}{arrows}{\mathrel}
791 \fdsy@DeclareSymbol{\Leftarrow}{arrows}{\mathrel}
792 \fdsy@DeclareSymbol{\Downarrow}{arrows}{\mathrel}
793 \fdsy@DeclareSymbol{\Nearrow}{arrows}{\mathrel}
794 \fdsy@DeclareSymbol{\Nwarrow}{arrows}{\mathrel}
795 \fdsy@DeclareSymbol{\Swarrow}{arrows}{\mathrel}
796 \fdsy@DeclareSymbol{\Searrow}{arrows}{\mathrel}
797 \fdsy@DeclareSymbol{\leftrightarrow}{arrows}{\mathrel}
798 \fdsy@DeclareSymbol{\updownarrow}{arrows}{\mathrel}
799 \fdsy@DeclareSymbol{\neswarrow}{arrows}{\mathrel}
800 \fdsy@DeclareSymbol{\nwsearrow}{arrows}{\mathrel}
801\fdsy@DeclareSymbol{\Leftrightarrow}{arrows}{\mathrel}
802 \fdsy@DeclareSymbol{\Updownarrow}{arrows}{\mathrel}
803 \fdsy@DeclareSymbol{\Neswarrow}{arrows}{\mathrel}
804 \fdsy@DeclareSymbol{\Nwsearrow}{arrows}{\mathrel}
805 \fdsy@DeclareSymbol{\twoheadrightarrow}{arrows}{\mathrel}
806 \fdsy@DeclareSymbol{\twoheaduparrow}{arrows}{\mathrel}
807\fdsy@DeclareSymbol{\twoheadleftarrow}{arrows}{\mathrel}
808 \fdsy@DeclareSymbol{\twoheaddownarrow}{arrows}{\mathrel}
```

```
809 \fdsy@DeclareSymbol{\twoheadnearrow}{arrows}{\mathrel}
810 \fdsy@DeclareSymbol{\twoheadnwarrow}{arrows}{\mathrel}
811 \fdsv@DeclareSvmbol{\twoheadswarrow}{arrows}{\mathrel}
812 \fdsy@DeclareSymbol{\twoheadsearrow}{arrows}{\mathrel}
813 \fdsy@DeclareSymbol{\rightarrowtail}{arrows}{\mathrel}
814 \fdsy@DeclareSymbol{\uparrowtail}{arrows}{\mathrel}
815 \fdsy@DeclareSymbol{\leftarrowtail}{arrows}{\mathrel}
816 \fdsy@DeclareSymbol{\downarrowtail}{arrows}{\mathrel}
817 \fdsy@DeclareSymbol{\nearrowtail}{arrows}{\mathrel}
818 \fdsy@DeclareSymbol{\nwarrowtail}{arrows}{\mathrel}
819 \fdsy@DeclareSymbol{\swarrowtail}{arrows}{\mathrel}
820 \fdsy@DeclareSymbol{\searrowtail}{arrows}{\mathrel}
821 \fdsy@DeclareSymbol{\rightmapsto}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\mapsto}{arrows}{\mathrel}
823 \fdsy@DeclareSymbol{\upmapsto}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\mapsup}{arrows}{\mathrel}
825 \fdsy@DeclareSymbol{\leftmapsto}{arrows}{\mathrel}
    \fdsy@DeclareAlias{\mapsfrom}{arrows}{\mathrel}
827 \fdsv@DeclareSvmbol{\downmapsto}{arrows}{\mathrel}
    \fdsy@DeclareAlias{\mapsdown}{arrows}{\mathrel}
829 \fdsv@DeclareSvmbol{\nemapsto}{arrows}{\mathrel}
830 \fdsy@DeclareSymbol{\nwmapsto}{arrows}{\mathrel}
831 \fdsy@DeclareSymbol{\swmapsto}{arrows}{\mathrel}
832 \fdsy@DeclareSymbol{\semapsto}{arrows}{\mathrel}
833 \fdsy@DeclareSymbol{\lhookrightarrow}{arrows}{\mathrel}
    \fdsy@DeclareAlias{\hookrightarrow}{arrows}{\mathrel}
835 \fdsy@DeclareSymbol{\lhookuparrow}{arrows}{\mathrel}
836 \fdsy@DeclareSymbol{\lhookleftarrow}{arrows}{\mathrel}
837 \fdsy@DeclareSymbol{\lhookdownarrow}{arrows}{\mathrel}
838 \fdsv@DeclareSvmbol{\lhooknearrow}{arrows}{\mathrel}
839 \fdsy@DeclareSymbol{\lhooknwarrow}{arrows}{\mathrel}
    \fdsy@DeclareAlias{\hknwarrow}{arrows}{\mathrel}
841 \fdsy@DeclareSymbol{\lhookswarrow}{arrows}{\mathrel}
842 \fdsy@DeclareSymbol{\lhooksearrow}{arrows}{\mathrel}
    \fdsv@DeclareAlias{\hksearrow}{arrows}{\mathrel}
844 \fdsy@DeclareSymbol{\rhookrightarrow}{arrows}{\mathrel}
845 \fdsy@DeclareSymbol{\rhookuparrow}{arrows}{\mathrel}
846 \fdsy@DeclareSymbol{\rhookleftarrow}{arrows}{\mathrel}
    \fdsy@DeclareAlias{\hookleftarrow}{arrows}{\mathrel}
848 \fdsy@DeclareSymbol{\rhookdownarrow}{arrows}{\mathrel}
849 \fdsy@DeclareSymbol{\rhooknearrow}{arrows}{\mathrel}
    \fdsy@DeclareAlias{\hknearrow}{arrows}{\mathrel}
851 \fdsy@DeclareSymbol{\rhooknwarrow}{arrows}{\mathrel}
852 \fdsy@DeclareSymbol{\rhookswarrow}{arrows}{\mathrel}
    \fdsy@DeclareAlias{\hkswarrow}{arrows}{\mathrel}
```

```
854 \fdsy@DeclareSymbol{\rhooksearrow}{arrows}{\mathrel}
855 \fdsy@DeclareSymbol{\rightharpoonup}{arrows}{\mathrel}
856 \fdsv@DeclareSvmbol{\upharpoonleft}{arrows}{\mathrel}
857 \fdsy@DeclareSymbol{\leftharpoondown}{arrows}{\mathrel}
858 \fdsy@DeclareSymbol{\downharpoonright}{arrows}{\mathrel}
859 \fdsy@DeclareSymbol{\neharpoonnw}{arrows}{\mathrel}
860 \fdsy@DeclareSymbol{\nwharpoonsw}{arrows}{\mathrel}
861 \fdsy@DeclareSymbol{\swharpoonse}{arrows}{\mathrel}
862 \fdsy@DeclareSymbol{\seharpoonne}{arrows}{\mathrel}
863 \fdsy@DeclareSymbol{\rightharpoondown}{arrows}{\mathrel}
864 \fdsy@DeclareSymbol{\upharpoonright}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\restriction}{arrows}{\mathrel}
866 \fdsy@DeclareSymbol{\leftharpoonup}{arrows}{\mathrel}
867 \fdsy@DeclareSymbol{\downharpoonleft}{arrows}{\mathrel}
868 \fdsy@DeclareSymbol{\neharpoonse}{arrows}{\mathrel}
869 \fdsy@DeclareSymbol{\nwharpoonne}{arrows}{\mathrel}
870 \fdsy@DeclareSymbol{\swharpoonnw}{arrows}{\mathrel}
871 \fdsy@DeclareSymbol{\seharpoonsw}{arrows}{\mathrel}
872 \fdsy@DeclareSymbol{\leftrightharpoonupdown}{arrows}{\mathrel}
873 \fdsy@DeclareSymbol{\updownharpoonleftright}{arrows}{\mathrel}
874 \fdsy@DeclareSymbol{\neswharpoonnwse}{arrows}{\mathrel}
875 \fdsy@DeclareSymbol{\nwseharpoonnesw}{arrows}{\mathrel}
876 \fdsy@DeclareSymbol{\leftrightharpoondownup}{arrows}{\mathrel}
877\fdsy@DeclareSymbol{\updownharpoonrightleft}{arrows}{\mathrel}
878 \fdsy@DeclareSymbol{\neswharpoonsenw}{arrows}{\mathrel}
879 \fdsy@DeclareSymbol{\nwseharpoonswne}{arrows}{\mathrel}
880 \fdsy@DeclareSymbol{\rightleftharpoons}{arrows}{\mathrel}
881 \fdsy@DeclareSymbol{\updownharpoons}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\updownharpoonsleftright}{arrows}{\mathrel}
883 \fdsy@DeclareSymbol{\neswharpoons}{arrows}{\mathrel}
884 \fdsy@DeclareSymbol{\senwharpoons}{arrows}{\mathrel}
885 \fdsy@DeclareSymbol{\leftrightharpoons}{arrows}{\mathrel}
886 \fdsy@DeclareSymbol{\downupharpoons}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\downupharpoonsleftright}{arrows}{\mathrel}
888 \fdsv@DeclareSymbol{\swneharpoons}{arrows}{\mathrel}
889 \fdsy@DeclareSymbol{\nwseharpoons}{arrows}{\mathrel}
890 \fdsy@DeclareSymbol{\rightbkarrow}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\dasharrow}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\dashrightarrow}{arrows}{\mathrel}
892
893 \fdsy@DeclareSymbol{\upbkarrow}{arrows}{\mathrel}
894 \fdsy@DeclareSymbol{\leftbkarrow}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\dashleftarrow}{arrows}{\mathrel}
896 \fdsy@DeclareSymbol{\downbkarrow}{arrows}{\mathrel}
897 \fdsy@DeclareSymbol{\nebkarrow}{arrows}{\mathrel}
898 \fdsy@DeclareSymbol{\nwbkarrow}{arrows}{\mathrel}
```

```
899 \fdsy@DeclareSymbol{\swbkarrow}{arrows}{\mathrel}
900 \fdsy@DeclareSymbol{\sebkarrow}{arrows}{\mathrel}
901\fdsv@DeclareSvmbol{\rightspoon}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\multimap}{arrows}{\mathrel}
903 \fdsy@DeclareSymbol{\upspoon}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\cirmid}{arrows}{\mathrel}
905 \fdsy@DeclareSymbol{\leftspoon}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\multimapinv}{arrows}{\mathrel}
907\fdsy@DeclareSymbol{\downspoon}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\midcir}{arrows}{\mathrel}
909 \fdsy@DeclareSymbol{\rightblackspoon}{arrows}{\mathrel}
910 \fdsy@DeclareSymbol{\upblackspoon}{arrows}{\mathrel}
911 \fdsy@DeclareSymbol{\leftblackspoon}{arrows}{\mathrel}
912 \fdsy@DeclareSymbol{\downblackspoon}{arrows}{\mathrel}
913 \fdsy@DeclareSymbol{\rightpitchfork}{arrows}{\mathrel}
914 \fdsy@DeclareSymbol{\uppitchfork}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\pitchfork}{arrows}{\mathrel}
916 \fdsy@DeclareSymbol{\leftpitchfork}{arrows}{\mathrel}
917 \fdsv@DeclareSymbol{\downpitchfork}{arrows}{\mathrel}
918 \fdsy@DeclareSymbol{\rightrightarrows}{arrows}{\mathrel}
919 \fdsy@DeclareSymbol{\upuparrows}{arrows}{\mathrel}
920 \fdsy@DeclareSymbol{\leftleftarrows}{arrows}{\mathrel}
921\fdsy@DeclareSymbol{\downdownarrows}{arrows}{\mathrel}
922 \fdsy@DeclareSymbol{\nenearrows}{arrows}{\mathrel}
923 \fdsy@DeclareSymbol{\nwnwarrows}{arrows}{\mathrel}
924 \fdsy@DeclareSymbol{\swswarrows}{arrows}{\mathrel}
925 \fdsy@DeclareSymbol{\sesearrows}{arrows}{\mathrel}
926 \fdsy@DeclareSymbol{\rightleftarrows}{arrows}{\mathrel}
927 \fdsy@DeclareSymbol{\updownarrows}{arrows}{\mathrel}
928 \fdsv@DeclareSvmbol{\neswarrows}{arrows}{\mathrel}
929 \fdsy@DeclareSymbol{\nwsearrows}{arrows}{\mathrel}
930 \fdsy@DeclareSymbol{\leftrightarrows}{arrows}{\mathrel}
931 \fdsy@DeclareSymbol{\downuparrows}{arrows}{\mathrel}
932 \fdsy@DeclareSymbol{\swnearrows}{arrows}{\mathrel}
933 \fdsv@DeclareSymbol{\senwarrows}{arrows}{\mathrel}
934 \fdsy@DeclareSymbol{\rightlsquigarrow}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\leadsto}{arrows}{\mathrel}
935
     \fdsy@DeclareAlias{\rightsquigarrow}{arrows}{\mathrel}
937 \fdsy@DeclareSymbol{\uplsquigarrow}{arrows}{\mathrel}
938 \fdsy@DeclareSymbol{\leftlsquigarrow}{arrows}{\mathrel}
939 \fdsy@DeclareSymbol{\downlsquigarrow}{arrows}{\mathrel}
940 \fdsy@DeclareSymbol{\rightrsquigarrow}{arrows}{\mathrel}
941 \fdsy@DeclareSymbol{\uprsquigarrow}{arrows}{\mathrel}
942 \fdsy@DeclareSymbol{\leftrsquigarrow}{arrows}{\mathrel}
    \fdsy@DeclareAlias{\leftsquigarrow}{arrows}{\mathrel}
```

```
944 \fdsy@DeclareSymbol{\downrsquigarrow}{arrows}{\mathrel}
945 \fdsy@DeclareSymbol{\leftrightsquigarrow}{arrows}{\mathrel}
946 \fdsv@DeclareSymbol{\updownsquigarrow}{arrows}{\mathrel}
947\fdsy@DeclareSymbol{\rightleftsquigarrow}{arrows}{\mathrel}
948 \fdsv@DeclareSvmbol{\downupsquigarrow}{arrows}{\mathrel}
949 \fdsy@DeclareSymbol{\rightlcurvearrow}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\curvearrowright}{arrows}{\mathrel}
951\fdsy@DeclareSymbol{\uplcurvearrow}{arrows}{\mathrel}
952 \fdsy@DeclareSymbol{\leftlcurvearrow}{arrows}{\mathrel}
953 \fdsy@DeclareSymbol{\downlcurvearrow}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\cwrightarcarrow}{arrows}{\mathrel}
955 \fdsy@DeclareSymbol{\nelcurvearrow}{arrows}{\mathrel}
956 \fdsy@DeclareSymbol{\nwlcurvearrow}{arrows}{\mathrel}
957 \fdsv@DeclareSymbol{\swlcurvearrow}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\cwundercurvearrow}{arrows}{\mathrel}
959 \fdsy@DeclareSymbol{\selcurvearrow}{arrows}{\mathrel}
960 \fdsy@DeclareSymbol{\rightrcurvearrow}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\acwunderarcarrow}{arrows}{\mathrel}
962 \fdsv@DeclareSymbol{\uprcurvearrow}{arrows}{\mathrel}
963 \fdsy@DeclareSymbol{\leftrcurvearrow}{arrows}{\mathrel}
     \fdsv@DeclareAlias{\curvearrowleft}{arrows}{\mathrel}
964
     \fdsy@DeclareAlias{\acwoverarcarrow}{arrows}{\mathrel}
966 \fdsy@DeclareSymbol{\downrcurvearrow}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\acwleftarcarrow}{arrows}{\mathrel}
968 \fdsy@DeclareSymbol{\nercurvearrow}{arrows}{\mathrel}
969 \fdsy@DeclareSymbol{\nwrcurvearrow}{arrows}{\mathrel}
970 \fdsy@DeclareSymbol{\swrcurvearrow}{arrows}{\mathrel}
971 \fdsy@DeclareSymbol{\sercurvearrow}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\ccwundercurvearrow}{arrows}{\mathrel}
973 \fdsv@DeclareSvmbol{\leftrightcurvearrow}{arrows}{\mathrel}
974 \fdsy@DeclareSymbol{\updowncurvearrow}{arrows}{\mathrel}
975 \fdsy@DeclareSymbol{\rightleftcurvearrow}{arrows}{\mathrel}
976 \fdsy@DeclareSymbol{\downupcurvearrow}{arrows}{\mathrel}
977 \fdsy@DeclareSymbol{\neswcurvearrow}{arrows}{\mathrel}
978 \fdsv@DeclareSvmbol{\nwsecurvearrow}{arrows}{\mathrel}
979 \fdsy@DeclareSymbol{\swnecurvearrow}{arrows}{\mathrel}
980 \fdsy@DeclareSymbol{\senwcurvearrow}{arrows}{\mathrel}
981 \fdsy@DeclareSymbol{\leftfootline}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\vlongdash}{arrows}{\mathrel}
983 \fdsy@DeclareSymbol{\rightfootline}{arrows}{\mathrel}
984
     \fdsy@DeclareAlias{\longdashv}{arrows}{\mathrel}
985 \fdsy@DeclareSymbol{\acwcirclearrowup}{arrows}{\mathrel}
986 \fdsy@DeclareSymbol{\acwcirclearrowleft}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\circlearrowleft}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\acwopencirclearrow}{arrows}{\mathrel}
```

```
989 \fdsy@DeclareSymbol{\acwcirclearrowdown}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\acwgapcirclearrow}{arrows}{\mathrel}
991\fdsv@DeclareSvmbol{\acwcirclearrowright}{arrows}{\mathrel}
992\fdsv@DeclareSymbol{\cwcirclearrowdown}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\cwgapcirclearrow}{arrows}{\mathrel}
993
994 \fdsy@DeclareSymbol{\cwcirclearrowright}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\circlearrowright}{arrows}{\mathrel}
995
     \fdsy@DeclareAlias{\cwopencirclearrow}{arrows}{\mathrel}
997\fdsy@DeclareSymbol{\cwcirclearrowup}{arrows}{\mathrel}
998 \fdsy@DeclareSymbol{\cwcirclearrowleft}{arrows}{\mathrel}
999 \fdsy@DeclareSymbol{\Rrightarrow}{arrows}{\mathrel}
1000 \fdsy@DeclareSymbol{\Uuparrow}{arrows}{\mathrel}
1001 \fdsy@DeclareSymbol{\Lleftarrow}{arrows}{\mathrel}
1002 \fdsy@DeclareSymbol{\Ddownarrow}{arrows}{\mathrel}
1003 \fdsy@DeclareSymbol{\Lsh}{arrows}{\mathrel}
1004 \fdsy@DeclareSymbol{\Rsh}{arrows}{\mathrel}
1005 \fdsy@DeclareSymbol{\Ldsh}{arrows}{\mathrel}
1006 \fdsy@DeclareSymbol{\Rdsh}{arrows}{\mathrel}
1007\fdsy@DeclareSymbol{\looparrowright}{arrows}{\mathrel}
1008 \fdsy@DeclareSymbol{\looparrowleft}{arrows}{\mathrel}
1009 \fdsv@setslot{224}
1010 \fdsy@DeclareSymbol{\rightvdash}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\vdash}{arrows}{\mathrel}
1011
     \fdsy@DeclareAlias{\assert}{arrows}{\mathrel}
1013 \fdsy@DeclareSymbol{\upvdash}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\perp}{arrows}{\mathrel}
1015 \fdsy@DeclareSymbol{\leftvdash}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\dashv}{arrows}{\mathrel}
1017 \fdsy@DeclareSymbol{\downvdash}{arrows}{\mathrel}
1018 \fdsy@DeclareSymbol{\rightvDash}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\vDash}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\models}{arrows}{\mathrel}
1020
1021 \fdsy@DeclareSymbol{\upvDash}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\Vbar}{arrows}{\mathrel}
1022
1023 \fdsv@DeclareSvmbol{\leftvDash}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\Dashv}{arrows}{\mathrel}
1025 \fdsy@DeclareSymbol{\downvDash}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\barV}{arrows}{\mathrel}
1027 \fdsy@DeclareSymbol{\rightVdash}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\Vdash}{arrows}{\mathrel}
1029 \fdsy@DeclareSymbol{\upVdash}{arrows}{\mathrel}
1030 \fdsy@DeclareSymbol{\leftVdash}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\dashV}{arrows}{\mathrel}
1032 \fdsy@DeclareSymbol{\downVdash}{arrows}{\mathrel}
1033 \fdsy@DeclareSymbol{\rightVDash}{arrows}{\mathrel}
```

```
\fdsy@DeclareAlias{\VDash}{arrows}{\mathrel}
1035 \fdsy@DeclareSymbol{\upVDash}{arrows}{\mathrel}
1036 \fdsy@DeclareSymbol{\leftVDash}{arrows}{\mathrel}
     \fdsy@DeclareAlias{\DashV}{arrows}{\mathrel}
1038 \fdsy@DeclareSymbol{\downVDash}{arrows}{\mathrel}
1039 \fdsy@DeclareSymbol{\Vvdash}{arrows}{\mathrel}
1041 \DeclareRobustCommand{\relbar}{\mathrel{\smash-}}
1042 \DeclareRobustCommand{\Relbar}{\mathrel=}
1043 \let\joinrel\undefined
1044 \DeclareRobustCommand\joinrel{\mathrel{\mkern-4mu}}
1045 \DeclareRobustCommand\longrightarrow{\DOTSB\relbar\joinrel\rightarrow}
1046 \DeclareRobustCommand\longleftarrow{\DOTSB\leftarrow\joinrel\relbar}
1047 \DeclareRobustCommand\longleftrightarrow{\DOTSB\leftarrow\joinrel\rightarrow}
1048 \DeclareRobustCommand\Longrightarrow{\DOTSB\Relbar\joinrel\Rightarrow}
1049 \DeclareRobustCommand\Longleftarrow{\DOTSB\Leftarrow\joinrel\Relbar}
1050 \DeclareRobustCommand\Longleftrightarrow{\DOTSB\Leftarrow\joinrel\Rightarrow}
1051 \DeclareRobustCommand\longmapsto{\DOTSB\leftfootline\mkern-7mu\rightarrow}
1052 \DeclareRobustCommand\emptyblackspoon{\DOTSB\leftspoon\mkern-13mu\rightblackspoon}
1053 \let\origof\emptyblackspoon
1054 \DeclareRobustCommand\filledemptyspoon{\DOTSB\leftblackspoon\mkern-13mu\rightspoon}
1055 \let\imageof\filledemptyspoon
1056 \DeclareRobustCommand\leftrightspoon{\DOTSB\leftspoon\mkern-13mu\rightspoon}
1057 \let\dualmap\leftrightspoon
1058 \DeclareRobustCommand\leftrightblackspoon{\DOTSB\leftblackspoon\mkern-13mu\rightblackspoon}
 FdSymbolD: stroked arrows
1059 \fdsy@setslot{0}
1060 \fdsy@DeclareSymbol{\nrightarrow}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\nto}{narrows}{\mathrel}
1062 \fdsy@DeclareSymbol{\nuparrow}{narrows}{\mathrel}
1063 \fdsy@DeclareSymbol{\nleftarrow}{narrows}{\mathrel}
1064 \fdsy@DeclareAlias{\ngets}{narrows}{\mathrel}
1065 \fdsy@DeclareSymbol{\ndownarrow}{narrows}{\mathrel}
1066 \fdsy@DeclareSymbol{\nnearrow}{narrows}{\mathrel}
1067 \fdsy@DeclareSymbol{\nnwarrow}{narrows}{\mathrel}
1068 \fdsy@DeclareSymbol{\nswarrow}{narrows}{\mathrel}
1069 \fdsy@DeclareSymbol{\nsearrow}{narrows}{\mathrel}
1070 \fdsy@DeclareSymbol{\nRightarrow}{narrows}{\mathrel}
1071 \fdsy@DeclareSymbol{\nUparrow}{narrows}{\mathrel}
1072 \fdsy@DeclareSymbol{\nLeftarrow}{narrows}{\mathrel}
1073 \fdsy@DeclareSymbol{\nDownarrow}{narrows}{\mathrel}
1074 \fdsy@DeclareSymbol{\nNearrow}{narrows}{\mathrel}
1075 \fdsy@DeclareSymbol{\nNwarrow}{narrows}{\mathrel}
1076 \fdsy@DeclareSymbol{\nSwarrow}{narrows}{\mathrel}
1077 \fdsy@DeclareSymbol{\nSearrow}{narrows}{\mathrel}
```

```
1078 \fdsy@DeclareSymbol{\nleftrightarrow}{narrows}{\mathrel}
1079 \fdsy@DeclareSymbol{\nupdownarrow}{narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narrows}{\narr
1080 \fdsv@DeclareSvmbol{\nneswarrow}{narrows}{\mathrel}
1081 \fdsy@DeclareSymbol{\nnwsearrow}{narrows}{\mathrel}
1082 \fdsy@DeclareSymbol{\nLeftrightarrow}{narrows}{\mathrel}
1083 \fdsy@DeclareSymbol{\nUpdownarrow}{narrows}{\mathrel}
1084 \fdsy@DeclareSymbol{\nNeswarrow}{narrows}{\mathrel}
1085 \fdsy@DeclareSymbol{\nNwsearrow}{narrows}{\mathrel}
1086 \fdsy@DeclareSymbol{\ntwoheadrightarrow}{narrows}{\mathrel}
1087 \fdsy@DeclareSymbol{\ntwoheaduparrow}{narrows}{\mathrel}
1088 \fdsy@DeclareSymbol{\ntwoheadleftarrow}{narrows}{\mathrel}
1089 \fdsy@DeclareSymbol{\ntwoheaddownarrow}{narrows}{\mathrel}
1090 \fdsy@DeclareSymbol{\ntwoheadnearrow}{narrows}{\mathrel}
1091 \fdsy@DeclareSymbol{\ntwoheadnwarrow}{narrows}{\mathrel}
1092 \fdsy@DeclareSymbol{\ntwoheadswarrow}{narrows}{\mathrel}
1093 \fdsy@DeclareSymbol{\ntwoheadsearrow}{narrows}{\mathrel}
1094 \fdsy@DeclareSymbol{\nrightarrowtail}{narrows}{\mathrel}
1095 \fdsy@DeclareSymbol{\nuparrowtail}{narrows}{\mathrel}
1096 \fdsy@DeclareSymbol{\nleftarrowtail}{narrows}{\mathrel}
1097 \fdsy@DeclareSymbol{\ndownarrowtail}{narrows}{\mathrel}
1098 \fdsy@DeclareSymbol{\nnearrowtail}{narrows}{\mathrel}
1099 \fdsy@DeclareSymbol{\nnwarrowtail}{narrows}{\mathrel}
1100 \fdsy@DeclareSymbol{\nswarrowtail}{narrows}{\mathrel}
1101 \fdsy@DeclareSymbol{\nsearrowtail}{narrows}{\mathrel}
1102 \fdsy@DeclareSymbol{\nrightmapsto}{narrows}{\mathrel}
          \fdsy@DeclareAlias{\nmapsto}{narrows}{\mathrel}
1104 \fdsy@DeclareSymbol{\nupmapsto}{\narrows}{\mathrel}
          \fdsy@DeclareAlias{\nmapsup}{\narrows}{\mathrel}
1105
1106 \fdsy@DeclareSymbol{\nleftmapsto}{narrows}{\mathrel}
          \fdsy@DeclareAlias{\nmapsfrom}{narrows}{\mathrel}
1108 \fdsy@DeclareSymbol{\ndownmapsto}{narrows}{\mathrel}
          \fdsy@DeclareAlias{\nmapsdown}{narrows}{\mathrel}
1110 \fdsy@DeclareSymbol{\nnemapsto}{narrows}{\mathrel}
1111 \fdsy@DeclareSymbol{\nnwmapsto}{\narrows}{\mathrel}
1112 \fdsv@DeclareSvmbol{\nswmapsto}{narrows}{\mathrel}
1113 \fdsy@DeclareSymbol{\nsemapsto}{\narrows}{\mathrel}
1114 \fdsy@DeclareSymbol{\nlhookrightarrow}{narrows}{\mathrel}
          \fdsy@DeclareAlias{\nhookrightarrow}{narrows}{\mathrel}
1116 \fdsy@DeclareSymbol{\nlhookuparrow}{narrows}{\mathrel}
1117 \fdsy@DeclareSymbol{\nlhookleftarrow}{narrows}{\mathrel}
1118 \fdsy@DeclareSymbol{\nlhookdownarrow}{narrows}{\mathrel}
1119 \fdsy@DeclareSymbol{\nlhooknearrow}{narrows}{\mathrel}
1120 \fdsy@DeclareSymbol{\nlhooknwarrow}{narrows}{\mathrel}
         \fdsy@DeclareAlias{\nhknwarrow}{narrows}{\mathrel}
1122 \fdsy@DeclareSymbol{\nlhookswarrow}{narrows}{\mathrel}
```

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1123 \fdsy@DeclareSymbol{\nlhooksearrow}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\nhksearrow}{narrows}{\mathrel}
1125 \fdsv@DeclareSymbol {\nrhookrightarrow} {\narrows} {\mathrel}
1126 \fdsy@DeclareSymbol{\nrhookuparrow}{narrows}{\mathrel}
1127 \fdsy@DeclareSymbol{\nrhookleftarrow}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\nhookleftarrow}{narrows}{\mathrel}
1129 \fdsy@DeclareSymbol{\nrhookdownarrow}{narrows}{\mathrel}
1130 \fdsy@DeclareSymbol{\nrhooknearrow}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\nhknearrow}{narrows}{\mathrel}
1132 \fdsy@DeclareSymbol{\nrhooknwarrow}{narrows}{\mathrel}
1133 \fdsy@DeclareSymbol{\nrhookswarrow}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\nhkswarrow}{narrows}{\mathrel}
1135 \fdsy@DeclareSymbol{\nrhooksearrow}{narrows}{\mathrel}
1136 \fdsy@DeclareSymbol{\nrightharpoonup}{narrows}{\mathrel}
1137 \fdsy@DeclareSymbol{\nupharpoonleft}{narrows}{\mathrel}
1138 \fdsy@DeclareSymbol{\nleftharpoondown}{narrows}{\mathrel}
1139 \fdsy@DeclareSymbol{\ndownharpoonright}{narrows}{\mathrel}
1140 \fdsy@DeclareSymbol{\nneharpoonnw}{narrows}{\mathrel}
1141 \fdsy@DeclareSymbol{\nnwharpoonsw}{narrows}{\mathrel}
1142 \fdsy@DeclareSymbol{\nswharpoonse}{narrows}{\mathrel}
1143 \fdsy@DeclareSymbol{\nseharpoonne}{narrows}{\mathrel}
1144 \fdsy@DeclareSymbol{\nrightharpoondown}{narrows}{\mathrel}
1145 \fdsy@DeclareSymbol{\nupharpoonright}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\nrestriction}{narrows}{\mathrel}
1147 \fdsy@DeclareSymbol{\nleftharpoonup}{narrows}{\mathrel}
1148 \fdsy@DeclareSymbol{\ndownharpoonleft}{narrows}{\mathrel}
1149 \fdsy@DeclareSymbol{\nneharpoonse}{narrows}{\mathrel}
1150 \fdsy@DeclareSymbol{\nnwharpoonne}{narrows}{\mathrel}
1151 \fdsy@DeclareSymbol{\nswharpoonnw}{narrows}{\mathrel}
1152 \fdsy@DeclareSymbol{\nseharpoonsw}{narrows}{\mathrel}
1153 \fdsy@DeclareSymbol{\nleftrightharpoonupdown}{narrows}{\mathrel}
1154 \fdsy@DeclareSymbol{\nupdownharpoonleftright}{narrows}{\mathrel}
1155 \fdsy@DeclareSymbol{\nneswharpoonnwse}{narrows}{\mathrel}
1156 \fdsy@DeclareSymbol{\nnwseharpoonnesw}{narrows}{\mathrel}
1157 \fdsv@DeclareSymbol {\nleftrightharpoondownup} {\narrows} {\mathrel}
1158 \fdsy@DeclareSymbol{\nupdownharpoonrightleft}{narrows}{\mathrel}
1159 \fdsy@DeclareSymbol{\nneswharpoonsenw}{narrows}{\mathrel}
1160 \fdsy@DeclareSymbol{\nnwseharpoonswne}{narrows}{\mathrel}
1161 \fdsy@DeclareSymbol{\nrightleftharpoons}{narrows}{\mathrel}
1162 \fdsy@DeclareSymbol{\nupdownharpoons}{\narrows}{\mathrel}
     \fdsy@DeclareAlias{\nupdownharpoonsleftright}{narrows}{\mathrel}
1164 \fdsy@DeclareSymbol{\nneswharpoons}{narrows}{\mathrel}
1165 \fdsy@DeclareSymbol{\nsenwharpoons}{narrows}{\mathrel}
1166 \fdsy@DeclareSymbol{\nleftrightharpoons}{narrows}{\mathrel}
1167 \fdsy@DeclareSymbol{\ndownupharpoons}{narrows}{\mathrel}
```

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\fdsy@DeclareAlias{\ndownupharpoonsleftright}{narrows}{\mathrel}
1169 \fdsy@DeclareSymbol{\nswneharpoons}{narrows}{\mathrel}
1170 \fdsv@DeclareSvmbol{\nnwseharpoons}{narrows}{\mathrel}
1171 \fdsy@DeclareSymbol{\nrightbkarrow}{narrows}{\mathrel}
     \fdsv@DeclareAlias{\ndasharrow}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\ndashrightarrow}{narrows}{\mathrel}
1174 \fdsy@DeclareSymbol{\nupbkarrow}{narrows}{\mathrel}
1175 \fdsy@DeclareSymbol{\nleftbkarrow}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\ndashleftarrow}{narrows}{\mathrel}
1177 \fdsy@DeclareSymbol{\ndownbkarrow}{narrows}{\mathrel}
1178 \fdsy@DeclareSymbol{\nnebkarrow}{\narrows}{\mathrel}
1179 \fdsy@DeclareSymbol{\nnwbkarrow}{\narrows}{\mathrel}
1180 \fdsy@DeclareSymbol{\nswbkarrow}{narrows}{\mathrel}
1181 \fdsy@DeclareSymbol{\nsebkarrow}{narrows}{\mathrel}
1182 \fdsy@DeclareSymbol{\nrightspoon}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\nmultimap}{narrows}{\mathrel}
1184 \fdsy@DeclareSymbol{\nupspoon}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\ncirmid}{narrows}{\mathrel}
1186 \fdsv@DeclareSvmbol{\nleftspoon}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\nmultimapinv}{narrows}{\mathrel}
1188 \fdsv@DeclareSvmbol{\ndownspoon}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\nmidcir}{narrows}{\mathrel}
1190 \fdsy@DeclareSymbol{\nrightblackspoon}{narrows}{\mathrel}
1191 \fdsy@DeclareSymbol{\nupblackspoon}{narrows}{\mathrel}
1192 \fdsy@DeclareSymbol{\nleftblackspoon}{narrows}{\mathrel}
1193 \fdsy@DeclareSymbol{\ndownblackspoon}{narrows}{\mathrel}
1194 \fdsy@DeclareSymbol{\nrightpitchfork}{narrows}{\mathrel}
1195 \fdsy@DeclareSymbol{\nuppitchfork}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\npitchfork}{narrows}{\mathrel}
1197 \fdsy@DeclareSymbol{\nleftpitchfork}{narrows}{\mathrel}
1198 \fdsy@DeclareSymbol{\ndownpitchfork}{narrows}{\mathrel}
1199 \fdsy@DeclareSymbol{\nrightrightarrows}{\narrows}{\mathrel}
1200 \fdsy@DeclareSymbol{\nupuparrows}{narrows}{\mathrel}
1201 \fdsy@DeclareSymbol{\nleftleftarrows}{narrows}{\mathrel}
1202 \fdsv@DeclareSvmbol{\ndowndownarrows}{\narrows}{\mathrel}
1203 \fdsy@DeclareSymbol{\nnenearrows}{\narrows}{\mathrel}
1204 \fdsy@DeclareSymbol{\nnwnwarrows}{narrows}{\mathrel}
1205 \fdsy@DeclareSymbol{\nswswarrows}{\narrows}{\mathrel}
1206 \fdsy@DeclareSymbol{\nsesearrows}{\narrows}{\mathrel}
1207 \fdsy@DeclareSymbol{\nrightleftarrows}{narrows}{\mathrel}
1208 \fdsy@DeclareSymbol{\nupdownarrows}{\narrows}{\mathrel}
1209 \fdsy@DeclareSymbol{\nneswarrows}{\narrows}{\mathrel}
1210 \fdsy@DeclareSymbol{\nnwsearrows}{\narrows}{\mathrel}
1211 \fdsy@DeclareSymbol{\nleftrightarrows}{narrows}{\mathrel}
1212 \fdsy@DeclareSymbol{\ndownuparrows}{narrows}{\mathrel}
```

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1213 \fdsy@DeclareSymbol{\nswnearrows}{\narrows}{\mathrel}
1214 \fdsy@DeclareSymbol{\nsenwarrows}{narrows}{\mathrel}
1215 \fdsv@DeclareSymbol{\nrightlsquigarrow}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\nleadsto}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\nrightsquigarrow}{narrows}{\mathrel}
1218 \fdsy@DeclareSymbol{\nuplsquigarrow}{narrows}{\mathrel}
1219 \fdsy@DeclareSymbol{\nleftlsquigarrow}{narrows}{\mathrel}
1220 \fdsy@DeclareSymbol{\ndownlsquigarrow}{narrows}{\mathrel}
1221 \fdsy@DeclareSymbol{\nrightrsquigarrow}{narrows}{\mathrel}
1222 \fdsy@DeclareSymbol{\nuprsquigarrow}{narrows}{\mathrel}
1223 \fdsy@DeclareSymbol{\nleftrsquigarrow}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\nleftsquigarrow}{narrows}{\mathrel}
1225 \fdsy@DeclareSymbol{\ndownrsquigarrow}{narrows}{\mathrel}
1226 \fdsy@DeclareSymbol{\nleftrightsquigarrow}{\narrows}{\mathrel}
1227 \fdsy@DeclareSymbol{\nupdownsquigarrow}{narrows}{\mathrel}
1228 \fdsy@DeclareSymbol{\nrightleftsquigarrow}{narrows}{\mathrel}
1229 \fdsy@DeclareSymbol{\ndownupsquigarrow}{narrows}{\mathrel}
1230 \fdsy@DeclareSymbol{\nrightlcurvearrow}{narrows}{\mathrel}
     \fdsv@DeclareAlias{\ncurvearrowright}{narrows}{\mathrel}
1232 \fdsy@DeclareSymbol{\nuplcurvearrow}{narrows}{\mathrel}
1233 \fdsy@DeclareSymbol{\nleftlcurvearrow}{narrows}{\mathrel}
1234 \fdsy@DeclareSymbol{\ndownlcurvearrow}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\ncwrightarcarrow}{narrows}{\mathrel}
1236 \fdsy@DeclareSymbol{\nnelcurvearrow}{narrows}{\mathrel}
1237 \fdsy@DeclareSymbol{\nnwlcurvearrow}{narrows}{\mathrel}
1238 \fdsy@DeclareSymbol{\nswlcurvearrow}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\ncwundercurvearrow}{narrows}{\mathrel}
1240 \fdsy@DeclareSymbol{\nselcurvearrow}{narrows}{\mathrel}
1241 \fdsy@DeclareSymbol{\nrightrcurvearrow}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\nacwunderarcarrow}{narrows}{\mathrel}
1243 \fdsy@DeclareSymbol{\nuprcurvearrow}{narrows}{\mathrel}
1244 \fdsy@DeclareSymbol{\nleftrcurvearrow}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\ncurvearrowleft}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\nacwoverarcarrow}{narrows}{\mathrel}
1246
1247 \fdsv@DeclareSvmbol{\ndownrcurvearrow}{\narrows}{\mathrel}
     \fdsy@DeclareAlias{\nacwleftarcarrow}{narrows}{\mathrel}
1249 \fdsy@DeclareSymbol{\nnercurvearrow}{narrows}{\mathrel}
1250 \fdsy@DeclareSymbol{\nnwrcurvearrow}{narrows}{\mathrel}
1251 \fdsy@DeclareSymbol{\nswrcurvearrow}{narrows}{\mathrel}
1252 \fdsy@DeclareSymbol{\nsercurvearrow}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\nccwundercurvearrow}{narrows}{\mathrel}
1254 \fdsy@DeclareSymbol{\nleftrightcurvearrow}{narrows}{\mathrel}
1255 \fdsy@DeclareSymbol{\nupdowncurvearrow}{narrows}{\mathrel}
1256 \fdsy@DeclareSymbol{\nrightleftcurvearrow}{narrows}{\mathrel}
1257 \fdsy@DeclareSymbol{\ndownupcurvearrow}{narrows}{\mathrel}
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1258 \fdsy@DeclareSymbol{\nneswcurvearrow}{narrows}{\mathrel}
1259 \fdsy@DeclareSymbol{\nnwsecurvearrow}{narrows}{\mathrel}
1260 \fdsv@DeclareSymbol{\nswnecurvearrow}{narrows}{\mathrel}
1261 \fdsv@DeclareSymbol{\nsenwcurvearrow}{narrows}{\mathrel}
1262 \fdsv@DeclareSvmbol{\nleftfootline}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\nvlongdash}{narrows}{\mathrel}
1264 \fdsv@DeclareSvmbol{\nrightfootline}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\nlongdashv}{narrows}{\mathrel}
1266 \fdsy@DeclareSymbol{\nacwcirclearrowup}{narrows}{\mathrel}
1267 \fdsy@DeclareSymbol{\nacwcirclearrowleft}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\ncirclearrowleft}{narrows}{\mathrel}
1268
     \fdsy@DeclareAlias{\nacwopencirclearrow}{narrows}{\mathrel}
1269
1270 \fdsy@DeclareSymbol{\nacwcirclearrowdown}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\nacwgapcirclearrow}{narrows}{\mathrel}
1272 \fdsy@DeclareSymbol{\nacwcirclearrowright}{\narrows}{\mathrel}
1273 \fdsv@DeclareSvmbol{\ncwcirclearrowdown}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\ncwgapcirclearrow}{narrows}{\mathrel}
1275 \fdsy@DeclareSymbol{\ncwcirclearrowright}{narrows}{\mathrel}
     \fdsv@DeclareAlias{\ncirclearrowright}{narrows}{\mathrel}
1277
     \fdsy@DeclareAlias{\ncwopencirclearrow}{narrows}{\mathrel}
1278 \fdsv@DeclareSvmbol{\ncwcirclearrowup}{narrows}{\mathrel}
1279 \fdsy@DeclareSymbol{\ncwcirclearrowleft}{narrows}{\mathrel}
1280 \fdsy@DeclareSymbol{\nRrightarrow}{narrows}{\mathrel}
1281 \fdsy@DeclareSymbol{\nUuparrow}{narrows}{\mathrel}
1282 \fdsy@DeclareSymbol{\nLleftarrow}{narrows}{\mathrel}
1283 \fdsy@DeclareSymbol{\nDdownarrow}{narrows}{\mathrel}
1284 \fdsy@setslot{224}
1285 \fdsy@DeclareSymbol{\nrightvdash}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\nvdash}{narrows}{\mathrel}
1286
     \fdsv@DeclareAlias{\nassert}{narrows}{\mathrel}
1287
   \fdsy@DeclareSymbol{\nupvdash}{narrows}{\mathrel}
     \fdsv@DeclareAlias{\nperp}{narrows}{\mathrel}
1289
1290 \fdsy@DeclareSymbol{\nleftvdash}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\ndashv}{narrows}{\mathrel}
1292 \fdsv@DeclareSvmbol{\ndownvdash}{narrows}{\mathrel}
    fdsy@DeclareSymbol{\nrightvDash}{narrows}{\mathrel}
     \fdsv@DeclareAlias{\nvDash}{narrows}{\mathrel}
1294
     \fdsy@DeclareAlias{\nmodels}{narrows}{\mathrel}
1295
    fdsy@DeclareSymbol{\nupvDash}{narrows}{\mathrel}
1296
     \fdsy@DeclareAlias{\nVbar}{narrows}{\mathrel}
1297
1298 \fdsy@DeclareSymbol{\nleftvDash}{narrows}{\mathrel}
1299
     \fdsy@DeclareAlias{\nDashv}{narrows}{\mathrel}
   \fdsy@DeclareSymbol{\ndownvDash}{narrows}{\mathrel}
1300
     \fdsy@DeclareAlias{\nbarV}{narrows}{\mathrel}
1302 \fdsy@DeclareSymbol{\nrightVdash}{narrows}{\mathrel}
```

```
\fdsy@DeclareAlias{\nVdash}{narrows}{\mathrel}
1304 \fdsy@DeclareSymbol{\nupVdash}{narrows}{\mathrel}
1305 \fdsv@DeclareSvmbol{\nleftVdash}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\ndashV}{narrows}{\mathrel}
1307 \fdsv@DeclareSvmbol{\ndownVdash}{narrows}{\mathrel}
1308 \fdsy@DeclareSymbol{\nrightVDash}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\nVDash}{narrows}{\mathrel}
1310 \fdsy@DeclareSymbol{\nupVDash}{narrows}{\mathrel}
1311 \fdsy@DeclareSymbol{\nleftVDash}{narrows}{\mathrel}
     \fdsy@DeclareAlias{\nDashV}{narrows}{\mathrel}
1313 \fdsy@DeclareSymbol{\ndownVDash}{narrows}{\mathrel}
 FdSymbolE: large operators
1314 \fdsy@setslot{0}
1315 \fdsy@DeclareSymbol{\tbigplus}{largesymbols}{\mathop}
1316 \fdsy@DeclareSymbol{\dbigplus}{largesymbols}{\mathop}
1317 \fdsy@DeclareSymbol{\tbigtimes}{largesymbols}{\mathop}
1318 \fdsy@DeclareSymbol{\dbigtimes}{largesymbols}{\mathop}
1319 \fdsy@DeclareSymbol{\tbigwedge}{largesymbols}{\mathop}
1320 \fdsy@DeclareSymbol{\dbigwedge}{largesymbols}{\mathop}
1321 \fdsy@DeclareSymbol{\tbigvee}{largesymbols}{\mathop}
1322 \fdsy@DeclareSymbol{\dbigvee}{largesymbols}{\mathop}
1323 \fdsy@DeclareSymbol{\tbigwedgedot}{largesymbols}{\mathop}
1324 \fdsy@DeclareSymbol{\dbigwedgedot}{largesymbols}{\mathop}
1325 \fdsy@DeclareSymbol{\tbigveedot}{largesymbols}{\mathop}
1326 \fdsy@DeclareSymbol{\dbigveedot}{largesymbols}{\mathop}
1327 \fdsy@DeclareSymbol{\tbigdoublewedge}{largesymbols}{\mathop}
1328
     \fdsy@DeclareAlias{\tconjquant}{largesymbols}{\mathop}
1329 \fdsy@DeclareSymbol{\dbigdoublewedge}{largesymbols}{\mathop}
     \fdsy@DeclareAlias{\dconjquant}{largesymbols}{\mathop}
1330
1331 \fdsy@DeclareSymbol{\tbigdoublevee}{largesymbols}{\mathop}
     \fdsy@DeclareAlias{\tdisjquant}{largesymbols}{\mathop}
1332
1333 \fdsy@DeclareSymbol{\dbigdoublevee}{largesymbols}{\mathop}
     \fdsy@DeclareAlias{\ddisjquant}{largesymbols}{\mathop}
1335 \fdsy@DeclareSymbol{\tbigcurlywedge}{largesymbols}{\mathop}
1336 \fdsy@DeclareSymbol{\dbigcurlywedge}{largesymbols}{\mathop}
1337 \fdsy@DeclareSymbol{\tbigcurlyvee}{largesymbols}{\mathop}
1338 \fdsy@DeclareSymbol{\dbigcurlyvee}{largesymbols}{\mathop}
1339 \fdsy@DeclareSymbol{\tbigcurlywedgedot}{largesymbols}{\mathop}
1340 \fdsy@DeclareSymbol{\dbigcurlywedgedot}{largesymbols}{\mathop}
1341 \fdsy@DeclareSymbol{\tbigcurlyveedot}{largesymbols}{\mathop}
1342 \fdsv@DeclareSvmbol{\dbigcurlvveedot}{largesvmbols}{\mathop}
1343 \fdsy@DeclareSymbol{\tbigdoublecurlywedge} {largesymbols} {\mathop}
1344 \fdsy@DeclareSymbol{\dbigdoublecurlywedge}{largesymbols}{\mathop}
1345 \fdsy@DeclareSymbol{\tbigdoublecurlyvee}{largesymbols}{\mathop}
1346 \fdsy@DeclareSymbol{\dbigdoublecurlyvee}{largesymbols}{\mathop}
```

```
1347 \fdsy@DeclareSymbol{\tbigcap}{largesymbols}{\mathop}
1348 \fdsy@DeclareSymbol{\dbigcap}{largesymbols}{\mathop}
1349 \fdsv@DeclareSvmbol{\tbigcup}{largesvmbols}{\mathop}
1350 \fdsy@DeclareSymbol{\dbigcup}{largesymbols}{\mathop}
1351 \fdsy@DeclareSymbol{\tbigcapdot}{largesymbols}{\mathop}
1352 \fdsy@DeclareSymbol{\dbigcapdot}{largesymbols}{\mathop}
1353 \fdsy@DeclareSymbol{\tbigcupdot}{largesymbols}{\mathop}
1354 \fdsy@DeclareSymbol{\dbigcupdot}{largesymbols}{\mathop}
1355 \fdsy@DeclareSymbol{\tbigcapplus}{largesymbols}{\mathop}
1356 \fdsy@DeclareSymbol{\dbigcapplus}{largesymbols}{\mathop}
1357 \fdsy@DeclareSymbol{\tbigcupplus}{largesymbols}{\mathop}
     \fdsy@DeclareAlias{\tbiguplus}{largesymbols}{\mathop}
1359 \fdsy@DeclareSymbol{\dbigcupplus}{largesymbols}{\mathop}
     \fdsy@DeclareAlias{\dbiguplus}{largesymbols}{\mathop}
1361 \fdsy@DeclareSymbol{\tbigsqcap}{largesymbols}{\mathop}
1362 \fdsy@DeclareSymbol{\dbigsqcap}{largesymbols}{\mathop}
1363 \fdsy@DeclareSymbol{\tbigsqcup}{largesymbols}{\mathop}
1364 \fdsy@DeclareSymbol{\dbigsqcup}{largesymbols}{\mathop}
1365 \fdsy@DeclareSymbol{\tbigsqcapdot}{largesymbols}{\mathop}
1366 \fdsy@DeclareSymbol{\dbigsqcapdot}{largesymbols}{\mathop}
1367 \fdsy@DeclareSymbol{\tbigsqcupdot}{largesymbols}{\mathop}
1368 \fdsy@DeclareSymbol{\dbigsqcupdot}{largesymbols}{\mathop}
1369 \fdsy@DeclareSymbol{\tbigsqcapplus}{largesymbols}{\mathop}
1370 \fdsy@DeclareSymbol{\dbigsqcapplus}{largesymbols}{\mathop}
1371 \fdsy@DeclareSymbol{\tbigsqcupplus}{largesymbols}{\mathop}
1372 \fdsy@DeclareSymbol{\dbigsqcupplus}{largesymbols}{\mathop}
1373 \fdsy@DeclareSymbol{\tbigoplus}{largesymbols}{\mathop}
1374 \fdsy@DeclareSymbol{\dbigoplus}{largesymbols}{\mathop}
1375 \fdsy@DeclareSymbol{\tbigotimes}{largesymbols}{\mathop}
1376 \fdsy@DeclareSymbol{\dbigotimes}{largesymbols}{\mathop}
1377 \fdsy@DeclareSymbol{\tbigodot}{largesymbols}{\mathop}
1378 \fdsy@DeclareSymbol{\dbigodot}{largesymbols}{\mathop}
1379 \fdsy@DeclareSymbol{\tbigoast}{largesymbols}{\mathop}
1380 \fdsy@DeclareSymbol{\dbigoast}{largesymbols}{\mathop}
1381 \fdsv@DeclareSymbol{\tprod}{largesymbols}{\mathop}
1382 \fdsy@DeclareSymbol{\dprod}{largesymbols}{\mathop}
1383 \fdsy@DeclareSymbol{\tcoprod}{largesymbols}{\mathop}
1384 \fdsy@DeclareSymbol{\dcoprod}{largesymbols}{\mathop}
1385 \fdsy@DeclareSymbol{\tsum}{largesymbols}{\mathop}
1386 \fdsy@DeclareSymbol{\dsum}{largesymbols}{\mathop}
1387 \fdsy@DeclareSymbol{\tosum}{largesymbols}{\mathop}
1388 \fdsy@DeclareSymbol{\dosum}{largesymbols}{\mathop}
1389 \fdsy@DeclareSymbol{\tint}{largesymbols}{\mathop}
1390 \fdsy@DeclareSymbol{\dint}{largesymbols}{\mathop}
1391 \fdsy@DeclareSymbol{\tiint}{largesymbols}{\mathop}
```

```
1392 \fdsy@DeclareSymbol{\diint}{largesymbols}{\mathop}
1393 \fdsy@DeclareSymbol{\tiiint}{largesymbols}{\mathop}
1394 \fdsv@DeclareSvmbol{\diint}{largesvmbols}{\mathop}
1395 \fdsy@DeclareSymbol{\tiiiint}{largesymbols}{\mathop}
1396 \fdsy@DeclareSymbol{\diiiint}{largesymbols}{\mathop}
1397 \fdsy@DeclareSymbol{\tidotsint}{largesymbols}{\mathop}
     \fdsy@DeclareAlias{\tdotsint}{largesymbols}{\mathop}
   \fdsy@DeclareSymbol{\didotsint}{largesymbols}{\mathop}
     \fdsy@DeclareAlias{\ddotsint}{largesymbols}{\mathop}
1400
   \fdsy@DeclareSymbol{\tlandupint}{largesymbols}{\mathop}
     \fdsy@DeclareAlias{\tintclockwise}{largesymbols}{\mathop}
1402
1403 \fdsy@DeclareSymbol{\dlandupint}{largesymbols}{\mathop}
1404
     \fdsy@DeclareAlias{\dintclockwise}{largesymbols}{\mathop}
1405 \fdsy@DeclareSymbol{\tlanddownint}{largesymbols}{\mathop}
1406
     \fdsy@DeclareAlias{\tawint}{largesymbols}{\mathop}
     \fdsy@DeclareAlias{\tintctrclockwise}{largesymbols}{\mathop}
1407
1408 \fdsy@DeclareSymbol{\dlanddownint}{largesymbols}{\mathop}
     \fdsy@DeclareAlias{\dawint}{largesymbols}{\mathop}
1409
     \fdsv@DeclareAlias{\dintctrclockwise}{largesvmbols}{\mathop}
1411 \fdsy@DeclareSymbol{\tintbar}{largesymbols}{\mathop}
1412 \fdsy@DeclareSymbol{\dintbar}{largesymbols}{\mathop}
1413 \fdsy@DeclareSymbol{\tintBar}{largesymbols}{\mathop}
1414 \fdsy@DeclareSymbol{\dintBar}{largesymbols}{\mathop}
1415 \fdsy@DeclareSymbol{\tfint}{largesymbols}{\mathop}
1416 \fdsy@DeclareSymbol{\dfint}{largesymbols}{\mathop}
1417 \fdsy@DeclareSymbol{\toint}{largesymbols}{\mathop}
1418 \fdsy@DeclareSymbol{\doint}{largesymbols}{\mathop}
1419 \fdsy@DeclareSymbol{\toiint}{largesymbols}{\mathop}
1420 \fdsy@DeclareSymbol{\doiint}{largesymbols}{\mathop}
1421 \fdsy@DeclareSymbol{\toiiint}{largesymbols}{\mathop}
1422 \fdsy@DeclareSymbol{\doiiint}{largesymbols}{\mathop}
1423 \fdsy@DeclareSymbol{\trcirclerightint}{largesymbols}{\mathop}
     \fdsy@DeclareAlias{\tointctrclockwise}{largesymbols}{\mathop}
1425 \fdsy@DeclareSymbol{\drcirclerightint}{largesymbols}{\mathop}
     \fdsv@DeclareAlias{\dointctrclockwise}{largesvmbols}{\mathop}
1426
1427 \fdsy@DeclareSymbol{\tlcirclerightint}{largesymbols}{\mathop}
     \fdsy@DeclareAlias{\tvarointclockwise}{largesymbols}{\mathop}
1428
   \fdsy@DeclareSymbol{\dlcirclerightint}{largesymbols}{\mathop}
     \fdsy@DeclareAlias{\dvarointclockwise}{largesymbols}{\mathop}
1430
    fdsy@DeclareSymbol{\trcircleleftint}{largesymbols}{\mathop}
1431
1432
     \fdsy@DeclareAlias{\tvarointctrclockwise}{largesymbols}{\mathop}
1433 \fdsy@DeclareSymbol{\drcircleleftint}{largesymbols}{\mathop}
     \fdsy@DeclareAlias{\dvarointctrclockwise}{largesymbols}{\mathop}
1434
1435 \fdsy@DeclareSymbol{\tlcircleleftint}{largesymbols}{\mathop}
     \fdsy@DeclareAlias{\tointclockwise}{largesymbols}{\mathop}
```

```
1437 \fdsy@DeclareSymbol{\dlcircleleftint}{largesymbols}{\mathop}
     \fdsy@DeclareAlias{\dointclockwise}{largesymbols}{\mathop}
1439 \fdsy@DeclareSymbol{\tsumint}{largesymbols}{\mathop}
1440 \fdsy@DeclareSymbol{\dsumint}{largesymbols}{\mathop}
1441 \let\intop\tint
1442 \let\ointop\toint
1444 \fdsy@DeclareOperator{\bigplus}{\dbigplus}{\tbigplus}
1445 \fdsy@DeclareOperator{\bigtimes}{\dbigtimes} {\tbigtimes}
1446 \fdsy@DeclareOperator{\bigwedge}{\dbigwedge}{\tbigwedge}
1447 \fdsy@DeclareOperator{\bigvee}{\dbigvee}{\tbigvee}
1448 \fdsy@DeclareOperator{\bigwedgedot}{\dbigwedgedot}{\tbigwedgedot}
1449 \fdsy@DeclareOperator{\bigveedot}{\dbigveedot}{\tbigveedot}
1450 \fdsy@DeclareOperator{\bigdoublewedge}{\dbigdoublewedge}{\tbigdoublewedge}
1451 \fdsy@DeclareOperator{\conjquant}{\dconjquant}{\tconjquant}
1452 \fdsy@DeclareOperator{\bigdoublevee}{\dbigdoublevee} {\tbigdoublevee}
1453 \fdsy@DeclareOperator{\disjquant}{\ddisjquant}{\tdisjquant}
1454 \fdsy@DeclareOperator{\bigcurlywedge}{\dbigcurlywedge}{\tbigcurlywedge}
1455 \fdsy@DeclareOperator{\bigcurlyvee}{\dbigcurlyvee}{\tbigcurlyvee}
1456 \fdsy@DeclareOperator{\bigcurlywedgedot}{\dbigcurlywedgedot}{\tbigcurlywedgedot}
1457 \fdsy@DeclareOperator{\bigcurlyveedot}{\dbigcurlyveedot}{\tbigcurlyveedot}
1458 \fdsy@DeclareOperator{\bigdoublecurlywedge}{\dbigdoublecurlywedge}{\tbigdoublecurlywedge}
1459 \fdsy@DeclareOperator{\bigdoublecurlyvee}{\dbigdoublecurlyvee}{\tbigdoublecurlyvee}
1460 \fdsy@DeclareOperator{\bigcap}{\dbigcap}{\tbigcap}
1461 \fdsy@DeclareOperator{\bigcup}{\dbigcup}{\tbigcup}
1462 \fdsy@DeclareOperator{\bigcapdot}{\dbigcapdot}{\tbigcapdot}
1463 \fdsy@DeclareOperator{\bigcupdot}{\dbigcupdot}{\tbigcupdot}
1464 \fdsy@DeclareOperator{\bigcapplus}{\dbigcapplus}{\tbigcapplus}
1465 \fdsy@DeclareOperator{\bigcupplus}{\dbigcupplus}{\tbigcupplus}
1466 \fdsy@DeclareOperator{\biguplus}{\dbiguplus}{\tbiguplus}
1467\fdsy@DeclareOperator{\bigsqcap}{\dbigsqcap}{\tbigsqcap}
1468 \fdsy@DeclareOperator{\bigsqcup}{\dbigsqcup}{\tbigsqcup}
1469 \fdsy@DeclareOperator{\bigsqcapdot}{\dbigsqcapdot}{\tbigsqcapdot}
1470 \fdsy@DeclareOperator{\bigsqcupdot}{\dbigsqcupdot}{\tbigsqcupdot}
1471 \fdsy@DeclareOperator{\bigsqcapplus}{\dbigsqcapplus}{\tbigsqcapplus}
1472 \fdsy@DeclareOperator{\bigsqcupplus}{\dbigsqcupplus}{\tbigsqcupplus}
1473 \fdsy@DeclareOperator{\bigoplus}{\dbigoplus}{\tbigoplus}
1474 \fdsy@DeclareOperator{\bigotimes}{\dbigotimes} {\tbigotimes}
1475 \fdsy@DeclareOperator{\bigodot}{\dbigodot}{\tbigodot}
1476 \fdsy@DeclareOperator{\bigoast}{\dbigoast}{\tbigoast}
1477 \fdsy@DeclareOperator{\sum}{\dsum}{\tsum}
1478 \fdsy@DeclareOperator{\osum}{\dosum}{\tosum}
1479 \fdsy@DeclareOperator{\prod}{\dprod}{\tprod}
1480 \fdsy@DeclareOperator{\coprod}{\dcoprod}{\tcoprod}
1481 \fdsy@DeclareIntegral{\iint}{\diint}{\tiint}
```

```
1482 \fdsy@DeclareIntegral {\iiint} {\diiint} {\tiiint}
1483 \fdsy@DeclareIntegral{\iiiint}{\diiint}{\tiiint}
1484 \fdsy@DeclareIntegral{\idotsint}{\didotsint}{\tidotsint}
1485 \fdsy@DeclareIntegral{\dotsint}{\ddotsint}{\tdotsint}
1486 \fdsy@DeclareIntegral{\landupint}{\dlandupint}{\tlandupint}
1487 \fdsy@DeclareIntegral{\intclockwise}{\dintclockwise}{\tintclockwise}
1488 \fdsy@DeclareIntegral{\landdownint}{\dlanddownint}{\tlanddownint}
1489 \fdsy@DeclareIntegral{\awint}{\dawint}{\tawint}
1490 \fdsy@DeclareIntegral{\intctrclockwise}{\dintctrclockwise}{\tintctrclockwise}
1491 \fdsy@DeclareIntegral{\landdownint}{\dlanddownint}{\tlanddownint}
1492 \fdsy@DeclareIntegral{\intbar}{\dintbar}{\tintbar}
1493 \fdsy@DeclareIntegral{\intBar}{\dintBar}{\tintBar}
1494 \fdsy@DeclareIntegral{\fint}{\dfint}{\tfint}
1495 \fdsy@DeclareIntegral{\oiint}{\doiint}{\toiint}
1496 \fdsy@DeclareIntegral{\oiiint}{\doiiint}{\toiiint}
1497 \fdsy@DeclareIntegral{\rcirclerightint}{\drcirclerightint}{\trcirclerightint}
1498 \fdsy@DeclareIntegral{\ointctrclockwise}{\dointctrclockwise}{\tointctrclockwise}
1499 \fdsy@DeclareIntegral{\lcirclerightint}{\dlcirclerightint}{\tlcirclerightint}
1500 \fdsy@DeclareIntegral{\varointclockwise}{\dvarointclockwise}{\tvarointclockwise}
1501 \fdsy@DeclareIntegral{\rcircleleftint}{\drcircleleftint}{\trcircleleftint}
1502\fdsy@DeclareIntegral{\varointctrclockwise}{\dvarointctrclockwise}{\tvarointctrclockwise}
1503 \fdsy@DeclareIntegral{\lcircleleftint}{\dlcircleleftint}{\tlcircleleftint}
1504 \fdsy@DeclareIntegral{\ointclockwise}{\dointclockwise}{\tointclockwise}
1505 \fdsy@DeclareIntegral{\sumint}{\dsumint} \{\tsumint}
1506
1507 \def\intkern@{\mkern-8.5mu\mathchoice{\mkern-1mu}{}{}}}
1508 \def\intdots@{\mkern-6mu%
     \mathchoice{\@cdots}%
     {{\cdotp}\mkern0.5mu{\cdotp}\mkern0.5mu{\cdotp}}%
1511 {{\cdotp}{\cdotp}}%
1512 {{\cdotp}{\cdotp}}\%
1513 \mkern-6mu}
 Math accents.
1514 \DeclareMathAccent{\widehat}{\mathord}{largesymbols}{"72}
1515 \DeclareMathAccent{\widetilde}{\mathord}{largesymbols}{"78}
1516 \DeclareMathAccent{\wideparen}{\mathord}{largesymbols}{"7E}
1517 \DeclareMathAccent{\vec}{\mathord}{largesymbols}{"84}
1518 \DeclareMathAccent{\middlebar}{\mathord}{\largesymbols}{"85}
1519 \DeclareMathAccent{\middleslash}{\mathord}{largesymbols}{"86}
1520 \DeclareMathAccent{\strokethrough}{\mathord}{largesymbols}{"87}
 FdSymbolF: delimiters
1521 \let\lfloor\undefined
1522 \let\rfloor\undefined
1523 \let\lceil\undefined
1524 \let\rceil\undefined
```

```
1525 \let\langle\undefined
1526 \let\rangle\undefined
1527\iffdsv@largedelims
     \fdsy@DeclareOpen{(){delimiters}{"01}
1528
1529
     \fdsv@DeclareClose{)}{delimiters}{"07}
     \fdsy@DeclareOpen{\lparen}{delimiters}{"01}
1530
     \fdsy@DeclareClose{\rparen}{delimiters}{"07}
1531
     \fdsy@DeclareOpen{[}{delimiters}{"13}
1532
     \fdsy@DeclareClose{]}{delimiters}{"19}
1533
1534
     \fdsy@DeclareOpen{\lbrack}{delimiters}{"13}
     \fdsy@DeclareClose{\rbrack}{delimiters}{"19}
1535
     \fdsy@DeclareOpen{\lfloor}{delimiters}{"1F}
1536
1537
     \fdsy@DeclareClose{\rfloor}{delimiters}{"25}
     \fdsy@DeclareOpen{\lceil}{delimiters}{"2B}
1538
     \fdsy@DeclareClose{\rceil}{delimiters}{"31}
1539
     \fdsy@DeclareOpen{\ulcorner}{delimiters}{"37}
1540
     \fdsy@DeclareClose{\urcorner}{delimiters}{"3D}
1541
     \fdsy@DeclareOpen{\llcorner}{delimiters}{"43}
1542
     \fdsv@DeclareClose{\lrcorner}{delimiters}{"49}
1543
1544
     \fdsy@DeclareOpen{\ullcorner}{delimiters}{"4F}
1545
     \fdsv@DeclareClose{\ulrcorner}{delimiters}{"55}
     \fdsy@DeclareOpen{\lsem}{delimiters}{"61}
1546
     \fdsy@DeclareClose{\rsem}{delimiters}{"67}
1547
     \fdsy@DeclareOpen{\lBrack}{delimiters}{"61}
1548
     \fdsy@DeclareClose{\rBrack}{delimiters}{"67}
1549
1550
     \fdsy@DeclareOpen{\lbrace}{delimiters}{"73}
1551
     \fdsy@DeclareClose{\rbrace}{delimiters}{"79}
1552
     \fdsy@DeclareOpen{<}{delimiters}{"86}
     \fdsy@DeclareClose{>}{delimiters}{"8C}
1553
     \fdsy@DeclareOpen{\langle}{delimiters}{"86}
1554
     \fdsy@DeclareClose{\rangle}{delimiters}{"8C}
1555
     \fdsy@DeclareOpen{\lAngle}{delimiters}{"92}
1556
     \fdsy@DeclareClose{\rAngle}{delimiters}{"98}
1557
     \fdsy@DeclareOpen{\langledot}{delimiters}{"9E}
1558
     \fdsv@DeclareClose{\rangledot}{delimiters}{"A4}
1559
1560
     \fdsy@DeclareDelimiter{/}{\mathord}{delimiters}{"AA}
1561
     \fdsy@DeclareDelimiter{\mathslash}{\mathord}{delimiters}{"AA}
     \DeclareMathSymbol{\divslash}{\mathbin}{delimiters}{"AA}
1562
     \fdsy@DeclareDelimiter{\backslash}{\mathord}{delimiters}{"B0}
1563
     \expandafter\DeclareMathDelimiter\@backslashchar%
1564
1565
        {\mathord}{delimiters}{"B0}{delimiters}{"B0}
1566
     \DeclareMathSymbol{\setminus}{\mathbin}{delimiters}{"B0}
     \fdsy@DeclareDelimiter{|}{\mathord}{delimiters}{"B7}
1567
     \fdsy@DeclareDelimiter{\vert}{\mathord}{delimiters}{"B7}
1568
```

\fdsy@DeclareOpen{\lvert}{delimiters}{"B7}

1569

```
\fdsy@DeclareClose{\rvert}{delimiters}{"B7}
1570
     \DeclareMathSymbol{\mid}{\mathrel}{delimiters}{"B7}
1571
     \DeclareMathSymbol{\nmid}{\mathrel}{delimiters}{"BA}
1572
     \fdsy@DeclareDelimiter{\Vert}{\mathord}{delimiters}{"BE}
1573
     \fdsy@DeclareOpen{\lVert}{delimiters}{"BE}
1574
     \fdsy@DeclareClose{\rVert}{delimiters}{"BE}
1575
     \DeclareMathSymbol{\parallel}{\mathrel}{delimiters}{"BE}
1576
1577
     \DeclareMathSymbol{\nparallel}{\mathrel}{delimiters}{"C1}
     \fdsy@DeclareDelimiter{\Vvert}{\mathord}{delimiters}{"C4}
1578
1579
     \fdsy@DeclareOpen{\lVvert}{delimiters}{"C4}
     \fdsy@DeclareClose{\rVvert}{delimiters}{"C4}
1580
1581 \else
     \fdsy@DeclareOpen{(){delimiters}{"00}
1582
     \fdsv@DeclareClose{)}{delimiters}{"06}
1583
     \fdsy@DeclareOpen{\lparen}{delimiters}{"00}
1584
     \fdsy@DeclareClose{\rparen}{delimiters}{"06}
1585
     \fdsy@DeclareOpen{[}{delimiters}{"12}
1586
     \fdsy@DeclareClose{]}{delimiters}{"18}
1587
     \fdsv@DeclareOpen{\lbrack}{delimiters}{"12}
1588
1589
     \fdsy@DeclareClose{\rbrack}{delimiters}{"18}
     \fdsv@DeclareOpen{\lfloor}{delimiters}{"1E}
1590
     \fdsy@DeclareClose{\rfloor}{delimiters}{"24}
1591
     \fdsy@DeclareOpen{\lceil}{delimiters}{"2A}
1592
     \fdsy@DeclareClose{\rceil}{delimiters}{"30}
1593
     \fdsy@DeclareOpen{\ulcorner}{delimiters}{"36}
1594
1595
     \fdsy@DeclareClose{\urcorner}{delimiters}{"3C}
1596
     \fdsy@DeclareOpen{\llcorner}{delimiters}{"42}
1597
     \fdsy@DeclareClose{\lrcorner}{delimiters}{"48}
     \fdsy@DeclareOpen{\ullcorner}{delimiters}{"4E}
1598
     \fdsv@DeclareClose{\ulrcorner}{delimiters}{"54}
1599
     \fdsy@DeclareOpen{\lsem}{delimiters}{"60}
1600
     \fdsy@DeclareClose{\rsem}{delimiters}{"66}
1601
     \fdsy@DeclareOpen{\lBrack}{delimiters}{"60}
1602
     \fdsy@DeclareClose{\rBrack}{delimiters}{"66}
1603
     \fdsv@DeclareOpen{\lbrace}{delimiters}{"72}
1604
     \fdsy@DeclareClose{\rbrace}{delimiters}{"78}
1605
1606
     \fdsy@DeclareOpen{<}{delimiters}{"85}
     \fdsy@DeclareClose{>}{delimiters}{"8B}
1607
     \fdsy@DeclareOpen{\langle}{delimiters}{"85}
1608
     \fdsy@DeclareClose{\rangle}{delimiters}{"8B}
1609
1610
     \fdsy@DeclareOpen{\lAngle}{delimiters}{"91}
1611
     \fdsy@DeclareClose{\rAngle}{delimiters}{"97}
     \fdsy@DeclareOpen{\langledot}{delimiters}{"9D}
1612
      \fdsy@DeclareClose{\rangledot}{delimiters}{"A3}
1613
```

\fdsy@DeclareDelimiter{/}{\mathord}{delimiters}{"A9}

1614

```
\fdsy@DeclareDelimiter{\mathslash}{\mathord}{delimiters}{"A9}
1615
     \DeclareMathSymbol{\divslash}{\mathbin}{delimiters}{"A9}
1616
1617
     \fdsv@DeclareDelimiter{\backslash}{\mathord}{delimiters}{"AF}
     \expandafter\DeclareMathDelimiter\@backslashchar%
1618
       {\mathord}{delimiters}{"AF}{delimiters}{"AF}
1619
1620
     \DeclareMathSymbol{\setminus}{\mathbin}{delimiters}{"AF}
     \fdsy@DeclareDelimiter{|}{\mathord}{delimiters}{"B6}
1621
1622
     \fdsy@DeclareDelimiter{\vert}{\mathord}{delimiters}{"B6}
     \fdsy@DeclareOpen{\lvert}{delimiters}{"B6}
1623
1624
     \fdsy@DeclareClose{\rvert}{delimiters}{"B6}
     \DeclareMathSymbol{\mid}{\mathrel}{delimiters}{"B6}
1625
     \DeclareMathSymbol{\nmid}{\mathrel}{delimiters}{"B9}
1626
     \fdsy@DeclareDelimiter{\Vert}{\mathord}{delimiters}{"BD}
1627
     \fdsy@DeclareOpen{\lVert}{delimiters}{"BD}
1628
1629
     \fdsy@DeclareClose{\rVert}{delimiters}{"BD}
     \DeclareMathSymbol{\parallel}{\mathrel}{delimiters}{"BD}
1630
     \DeclareMathSymbol{\nparallel}{\mathrel}{delimiters}{"C0}
1631
     \fdsy@DeclareDelimiter{\Vvert}{\mathord}{delimiters}{"C3}
1632
     \fdsy@DeclareOpen{\lVvert}{delimiters}{"C3}
1633
1634
     \fdsy@DeclareClose{\rVvert}{delimiters}{"C3}
1635\fi
1636 \let\|\Vert
1637 \let\divides\mid
1638 \let\ndivides\nmid
1639 \DeclareMathSymbol{\shortmid}{\mathrel}{delimiters}{"B5}
1640 \DeclareMathSymbol{\nshortmid}{\mathrel}{delimiters}{"B8}
1641 \DeclareMathSymbol{\shortparallel}{\mathrel}{delimiters}{"BC}
1642 \DeclareMathSymbol{\nshortparallel}{\mathrel}{delimiters}{"BF}
1644 \fdsy@DeclareDelimiter{\Arrowvert}{\mathord}{delimiters}{"C2}
1645 \fdsy@DeclareClose{\lgroup}{delimiters}{"7E}
1646 \fdsy@DeclareOpen{\rgroup}{delimiters}{"7F}
1647 \fdsy@DeclareClose{\rmoustache}{delimiters}{"80}
1648 \fdsy@DeclareOpen{\lmoustache}{delimiters}{"81}
1649 \fdsy@DeclareDelimiter{\bracevert}{\mathord}{delimiters}{"84}
1650 \let\uparrow\undefined
1651 \let\downarrow\undefined
1652 \let\updownarrow\undefined
1653 \let\Uparrow\undefined
1654 \let\Downarrow\undefined
1655 \let\Updownarrow\undefined
1656 \DeclareMathDelimiter{\uparrow}{\mathrel}{arrows}{\"01}{delimiters}{\"C6}
1657 \DeclareMathDelimiter{\downarrow}{\mathrel}{arrows}{"03}{delimiters}{"C7}
1658 \DeclareMathDelimiter{\updownarrow}{\mathrel}{arrows}{\"11}{delimiters}{\"C8}
```

1659 \DeclareMathDelimiter{\Uparrow}{\mathrel}{arrows}{\"09}{delimiters}{\"C9}

```
1660 \DeclareMathDelimiter{\Downarrow}{\mathrel}{arrows}{\"OB}{delimiters}{\"CA}
1661 \DeclareMathDelimiter{\Updownarrow}{\mathrel}{arrows}{\"15}{\delimiters}{\"CB}
 Horizontal braces.
1662 \DeclareMathSymbol{\braceld}{\mathord}{delimiters}{"CC}
1663 \DeclareMathSymbol{\bracelu}{\mathord}{delimiters}{"CD}
1664 \DeclareMathSymbol{\bracerd}{\mathord}{delimiters}{"CE}
1665 \DeclareMathSymbol{\braceru}{\mathord}{delimiters}{"CF}
1666 \DeclareMathSymbol{\bracemd}{\mathord}{delimiters}{"D0}
1667 \DeclareMathSymbol{\bracemu}{\mathord}{delimiters}{"D1}
1668 \DeclareMathSymbol{\bracemid}{\mathord}{delimiters}{"D2}
1669
1670 \def\bracefill@#1#2#3#4#5{$\m@th#5#1\leaders\hbox{$#4$}\hfill#2\leaders\hbox{$#4$}\hfill#3$}
1671 \def \downbracefill@\bracefill@\braceld\bracemd\bracerd\bracemid}
1672 \def\upbracefill@\bracefill@\bracelu\bracemu\braceru\bracemid}
1673 \def\downgroupfill@{\bracefill@\braceld{}\bracerd\bracemid}
1674 \def\upgroupfill@{\bracefill@\bracelu{}\braceru\bracemid}
1675 \def\linesegmentfill@{\arrowfill@\leftfootline\relbar\rightfootline}
1676 \def\leftharpoonfill@{\arrowfill@\leftharpoondown\relbar\relbar}
1677 \def\rightharpoonfill@{\arrowfill@\relbar\rightharpoonup}
1678
1679 \DeclareRobustCommand{\overbrace}[1] {\mathop{\mathpalette{\overarrow@\downbracefill@}{#1}}\limi
1681 \DeclareRobustCommand{\overgroup}{\mathpalette{\overarrow@\downgroupfill@}}
1682 \DeclareRobustCommand{\undergroup}{\mathpalette{\underarrow@\upgroupfill@}}
1683 \DeclareRobustCommand{\overlinesegment}{\mathpalette{\overarrow@\linesegmentfill@}}
1684 \DeclareRobustCommand{\overleftharpoon}{\mathpalette{\overarrow@\leftharpoonfill@}}
1685 \DeclareRobustCommand{\overrightharpoon}{\mathpalette{\overarrow@\rightharpoonfill@}}
1686 \DeclareRobustCommand{\underlinesegment}{\mathpalette{\underarrow@\linesegmentfill@}}
 Radical symbols.
1687 \iffdsy@largedelims
1688
     \DeclareMathRadical{\sqrtsign}{delimiters}{"D4}{delimiters}{"D4}
     \DeclareMathSymbol{\surd}{\mathop}{delimiters}{"D4}
1689
1690 \else
     \DeclareMathRadical{\sqrtsign}{delimiters}{"D3}{delimiters}{"D3}
1691
     \DeclareMathSymbol{\surd}{\mathop}{delimiters}{"D3}
1692
1693\fi
 In the n-th root, we don't want the n to come too close to the radical (adopted from
 package lucimatx).
1694 \ensuremath{$1$}\ensuremath{$1\sqrt{\#2}}\
     \dimen@\ht\z@ \advance\dimen@-\dp\z@
1696
     \mkern5mu\raise.6\dimen@\copy\rootbox \mkern-8mu\box\z@}
 Mathchars.
1697 \DeclareMathSymbol{+}{\mathbin}{symbols}{"11}
1698 \DeclareMathSymbol{-}{\mathbin}{symbols}{"OE}
```

```
1699 \DeclareMathSymbol{*}{\mathbin}{symbols}{"93}
1700 \DeclareMathSymbol{:}{\mathrel}{symbols}{"02}
1701 \DeclareMathSymbol{=}{\mathrel}{relations}{"00}
1702 \DeclareMathSymbol {<} {\mathrel} {relations} {"22}
1703 \DeclareMathSymbol{>}{\mathrel}{relations}{"23}
1704 \iffdsy@largedelims
     \DeclareMathSymbol{|}{\mathord}{delimiters}{"B6}
1705
     \DeclareMathSymbol{(){\mathopen}{delimiters}{"01}
     \DeclareMathSymbol{)}{\mathclose}{delimiters}{"07}
1707
1708
     \DeclareMathSymbol{[]}{\mathopen}{delimiters}{"13}
     \DeclareMathSymbol{]}{\mathclose}{delimiters}{"19}
1709
     \DeclareMathSymbol{/}{\mathord}{delimiters}{"AA}
1710
1711 \else
     \DeclareMathSymbol{|}{\mathord}{delimiters}{"B5}
1712
     \DeclareMathSymbol{(){\mathopen}{delimiters}{"00}
     \DeclareMathSymbol{))}{\mathclose}{delimiters}{"06}
1714
     \DeclareMathSymbol{[]{\mathopen}{delimiters}{"12}
1715
     \DeclareMathSymbol{]}{\mathclose}{delimiters}{"18}
1716
1717
     \DeclareMathSymbol{/}{\mathord}{delimiters}{"A9}
1718\fi
```

There is no \not symbol in FdSymbol since all relational symbols come with a stroked companion. For compatibility we define a \not command that places a virgule over the following symbol.