

Miscellaneous Mathematical Symbols-B

Range: 2980–29FF

This file contains an excerpt from the character code tables and list of character names for
The Unicode Standard, Version 7.0

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See <http://www.unicode.org/errata/> for an up-to-date list of errata.

See <http://www.unicode.org/charts/> for access to a complete list of the latest character code charts.
See <http://www.unicode.org/charts/PDF/Unicode-7.0/> for charts showing only the characters added in Unicode 7.0.
See <http://www.unicode.org/Public/7.0.0/charts/> for a complete archived file of character code charts for Unicode 7.0.

Disclaimer

These charts are provided as the online reference to the character contents of the Unicode Standard, Version 7.0 but do not provide all the information needed to fully support individual scripts using the Unicode Standard. For a complete understanding of the use of the characters contained in this file, please consult the appropriate sections of The Unicode Standard, Version 7.0, online at <http://www.unicode.org/versions/Unicode7.0.0/>, as well as Unicode Standard Annexes #9, #11, #14, #15, #24, #29, #31, #34, #38, #41, #42, #44, and #45, the other Unicode Technical Reports and Standards, and the Unicode Character Database, which are available online.

See <http://www.unicode.org/ucd/> and <http://www.unicode.org/reports/>

A thorough understanding of the information contained in these additional sources is required for a successful implementation.

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





































































































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See <http://www.unicode.org/pending/pending.html> and <http://www.unicode.org/alloc/Pipeline.html>.

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	298	299	29A	29B	29C	29D	29E	29F
0	 2980	 2990	 29A0	 29B0	 29C0	 29D0	 29E0	 29F0
1	 2981	 2991	 29A1	 29B1	 29C1	 29D1	 29E1	 29F1
2	 2982	 2992	 29A2	 29B2	 29C2	 29D2	 29E2	 29F2
3	 2983	 2993	 29A3	 29B3	 29C3	 29D3	 29E3	 29F3
4	 2984	 2994	 29A4	 29B4	 29C4	 29D4	 29E4	 29F4
5	 2985	 2995	 29A5	 29B5	 29C5	 29D5	 29E5	 29F5
6	 2986	 2996	 29A6	 29B6	 29C6	 29D6	 29E6	 29F6
7	 2987	 2997	 29A7	 29B7	 29C7	 29D7	 29E7	 29F7
8	 2988	 2998	 29A8	 29B8	 29C8	 29D8	 29E8	 29F8
9	 2989	 2999	 29A9	 29B9	 29C9	 29D9	 29E9	 29F9
A	 298A	 299A	 29AA	 29BA	 29CA	 29DA	 29EA	 29FA
B	 298B	 299B	 29AB	 29BB	 29CB	 29DB	 29EB	 29FB
C	 298C	 299C	 29AC	 29BC	 29CC	 29DC	 29EC	 29FC
D	 298D	 299D	 29AD	 29BD	 29CD	 29DD	 29ED	 29FD
E	 298E	 299E	 29AE	 29BE	 29CE	 29DE	 29EE	 29FE
F	 298F	 299F	 29AF	 29BF	 29CF	 29DF	 29EF	 29FF

Miscellaneous mathematical symbols

- 2980 \equiv TRIPLE VERTICAL BAR DELIMITER
 → 2AF4 \equiv triple vertical bar binary relation
 → 2AFC \equiv large triple vertical bar operator
- 2981 \bullet Z NOTATION SPOT
 • medium-small-sized black circle
 → 2219 \bullet bullet operator
 → 25CF \bullet black circle
- 2982 \colon Z NOTATION TYPE COLON
 → 0F7F \colon tibetan sign rnam bcad

Brackets

- 2983 $\{$ LEFT WHITE CURLY BRACKET
 2984 $\}$ RIGHT WHITE CURLY BRACKET
 2985 $($ LEFT WHITE PARENTHESIS
 → 2E28 $($ left double parenthesis
 → FF5F $($ fullwidth left white parenthesis
- 2986 $)$ RIGHT WHITE PARENTHESIS
 • used for Bourbakist intervals
 → 2E29 $)$ right double parenthesis
 → FF60 $)$ fullwidth right white parenthesis
- 2987 $[$ Z NOTATION LEFT IMAGE BRACKET
 2988 $]$ Z NOTATION RIGHT IMAGE BRACKET
 2989 \langle Z NOTATION LEFT BINDING BRACKET
 298A \rangle Z NOTATION RIGHT BINDING BRACKET
 298B \lfloor LEFT SQUARE BRACKET WITH UNDERBAR
 298C \rfloor RIGHT SQUARE BRACKET WITH UNDERBAR
 298D \lceil LEFT SQUARE BRACKET WITH TICK IN TOP CORNER
 298E \rceil RIGHT SQUARE BRACKET WITH TICK IN BOTTOM CORNER
 298F \lfloor LEFT SQUARE BRACKET WITH TICK IN BOTTOM CORNER
 2990 \rfloor RIGHT SQUARE BRACKET WITH TICK IN TOP CORNER
- 2991 \angle LEFT ANGLE BRACKET WITH DOT
 2992 \rangle RIGHT ANGLE BRACKET WITH DOT
 2993 \lessgtr LEFT ARC LESS-THAN BRACKET
 2994 \gtrless RIGHT ARC GREATER-THAN BRACKET
 2995 \lessgtr DOUBLE LEFT ARC GREATER-THAN BRACKET
 2996 \gtrless DOUBLE RIGHT ARC LESS-THAN BRACKET
 2997 \ulcorner LEFT BLACK TORTOISE SHELL BRACKET
 → 27EC \ulcorner mathematical left white tortoise shell bracket
 → 3014 \ulcorner left tortoise shell bracket
 → 3018 \ulcorner left white tortoise shell bracket
- 2998 \urcorner RIGHT BLACK TORTOISE SHELL BRACKET

Fences

- 2999 \vdots DOTTED FENCE
 • four close dots vertical
- 299A \zigzag VERTICAL ZIGZAG LINE
 → 2307 \zigzag wavy line

Angles

- 299B \sphericalangle MEASURED ANGLE OPENING LEFT
 → 2221 \sphericalangle measured angle
- 299C \square RIGHT ANGLE VARIANT WITH SQUARE
 → 221F \square right angle
- 299D \blacksquare MEASURED RIGHT ANGLE WITH DOT
- 299E \triangle ANGLE WITH S INSIDE
- 299F \sphericalangle ACUTE ANGLE
- 29A0 \sphericalangle SPHERICAL ANGLE OPENING LEFT
 → 2222 \sphericalangle spherical angle

- 29A1 \sphericalangle SPHERICAL ANGLE OPENING UP
- 29A2 \sphericalangle TURNED ANGLE
 → 2220 \sphericalangle angle
- 29A3 \sphericalangle REVERSED ANGLE
- 29A4 \sphericalangle ANGLE WITH UNDERBAR
- 29A5 \sphericalangle REVERSED ANGLE WITH UNDERBAR
- 29A6 \sphericalangle OBLIQUE ANGLE OPENING UP
- 29A7 \sphericalangle OBLIQUE ANGLE OPENING DOWN
- 29A8 \sphericalangle MEASURED ANGLE WITH OPEN ARM ENDING IN ARROW POINTING UP AND RIGHT
- 29A9 \sphericalangle MEASURED ANGLE WITH OPEN ARM ENDING IN ARROW POINTING UP AND LEFT
- 29AA \sphericalangle MEASURED ANGLE WITH OPEN ARM ENDING IN ARROW POINTING DOWN AND RIGHT
- 29AB \sphericalangle MEASURED ANGLE WITH OPEN ARM ENDING IN ARROW POINTING DOWN AND LEFT
- 29AC \sphericalangle MEASURED ANGLE WITH OPEN ARM ENDING IN ARROW POINTING RIGHT AND UP
- 29AD \sphericalangle MEASURED ANGLE WITH OPEN ARM ENDING IN ARROW POINTING LEFT AND UP
- 29AE \sphericalangle MEASURED ANGLE WITH OPEN ARM ENDING IN ARROW POINTING RIGHT AND DOWN
- 29AF \sphericalangle MEASURED ANGLE WITH OPEN ARM ENDING IN ARROW POINTING LEFT AND DOWN











Empty sets

- 29B0 \emptyset REVERSED EMPTY SET
 → 2205 \emptyset empty set
 → 2349 \emptyset apl functional symbol circle backslash
- 29B1 $\overline{\emptyset}$ EMPTY SET WITH OVERBAR
- 29B2 \emptyset EMPTY SET WITH SMALL CIRCLE ABOVE
- 29B3 \emptyset EMPTY SET WITH RIGHT ARROW ABOVE
- 29B4 \emptyset EMPTY SET WITH LEFT ARROW ABOVE









Circle symbols

- 29B5 \ominus CIRCLE WITH HORIZONTAL BAR
 → 2296 \ominus circled minus
- 29B6 \P CIRCLED VERTICAL BAR
 → 1F715 \P alchemical symbol for nitre
- 29B7 \P CIRCLED PARALLEL
- 29B8 \P CIRCLED REVERSE SOLIDUS
- 29B9 \P CIRCLED PERPENDICULAR
- 29BA \P CIRCLE DIVIDED BY HORIZONTAL BAR AND TOP HALF DIVIDED BY VERTICAL BAR
- 29BB \P CIRCLE WITH SUPERIMPOSED X
 → 2297 \P circled times
- 29BC \P CIRCLED ANTICLOCKWISE-ROTATED DIVISION SIGN
- 29BD \P UP ARROW THROUGH CIRCLE
- 29BE \P CIRCLED WHITE BULLET
 → 229A \P circled ring operator
 → 233E \P apl functional symbol circle jot
 → 25CE \P bullseye
- 29BF \P CIRCLED BULLET
 • forms part of a graduated set of circles with enclosed black circle of different sizes
 → 2299 \P circled dot operator
 → 25C9 \P fisheye
 → 2A00 \P n-ary circled dot operator
- 29C0 \P CIRCLED LESS-THAN
- 29C1 \P CIRCLED GREATER-THAN
- 29C2 \P CIRCLE WITH SMALL CIRCLE TO THE RIGHT
- 29C3 \P CIRCLE WITH TWO HORIZONTAL STROKES TO THE RIGHT












Square symbols

- 29C4  SQUARED RISING DIAGONAL SLASH
→ 2341  apl functional symbol quad slash
→ 303C  masu mark
- 29C5  SQUARED FALLING DIAGONAL SLASH
→ 2342  apl functional symbol quad backslash
- 29C6  SQUARED ASTERISK
- 29C7  SQUARED SMALL CIRCLE
→ 233B  apl functional symbol quad jot
- 29C8  SQUARED SQUARE
- 29C9  TWO JOINED SQUARES






Triangle symbols

- 29CA  TRIANGLE WITH DOT ABOVE
- 29CB  TRIANGLE WITH UNDERBAR
- 29CC  S IN TRIANGLE
- 29CD  TRIANGLE WITH SERIFS AT BOTTOM
→ 25B3  white up-pointing triangle
- 29CE  RIGHT TRIANGLE ABOVE LEFT TRIANGLE
- 29CF  LEFT TRIANGLE BESIDE VERTICAL BAR
- 29D0  VERTICAL BAR BESIDE RIGHT TRIANGLE














Bowtie symbols

- 29D1  BOWTIE WITH LEFT HALF BLACK
→ 22C8  bowtie
- 29D2  BOWTIE WITH RIGHT HALF BLACK
- 29D3  BLACK BOWTIE
- 29D4  TIMES WITH LEFT HALF BLACK
→ 22C9  left normal factor semidirect product
- 29D5  TIMES WITH RIGHT HALF BLACK
→ 22CA  right normal factor semidirect product
- 29D6  WHITE HOURGLASS
= vertical bowtie
= white framus
→ 231B  hourglass
- 29D7  BLACK HOURGLASS








Fences

- 29D8  LEFT WIGGLY FENCE
→ FE34  presentation form for vertical wavy low line
- 29D9  RIGHT WIGGLY FENCE
- 29DA  LEFT DOUBLE WIGGLY FENCE
- 29DB  RIGHT DOUBLE WIGGLY FENCE












Miscellaneous mathematical symbols

- 29DC  INCOMPLETE INFINITY
= ISOtech entity ⧜
→ 221E  infinity
- 29DD  TIE OVER INFINITY
- 29DE  INFINITY NEGATED WITH VERTICAL BAR
- 29DF  DOUBLE-ENDED MULTIMAP
→ 22B8  multimap
→ 1F73A  alchemical symbol for arsenic
- 29E0  SQUARE WITH CONTOURED OUTLINE
= D'Alembertian
→ 274F  lower right drop-shadowed white square
- 29E1  INCREASES AS
→ 22B4  normal subgroup of or equal to
- 29E2  SHUFFLE PRODUCT
→ 22FF  z notation bag membership







Relations

- 29E3  EQUALS SIGN AND SLANTED PARALLEL
→ 0023  number sign
→ 22D5  equal and parallel to
- 29E4  EQUALS SIGN AND SLANTED PARALLEL WITH TILDE ABOVE
- 29E5  IDENTICAL TO AND SLANTED PARALLEL
→ 2A68  triple horizontal bar with double vertical stroke
- 29E6  GLEICH STARK
= tautological equivalent









Miscellaneous mathematical symbols

- 29E7  THERMODYNAMIC
• vertical bar crossed by two horizontals
→ 2260  not equal to
- 29E8  DOWN-POINTING TRIANGLE WITH LEFT HALF BLACK
→ 25ED  up-pointing triangle with left half black
- 29E9  DOWN-POINTING TRIANGLE WITH RIGHT HALF BLACK
→ 25EE  up-pointing triangle with right half black
- 29EA  BLACK DIAMOND WITH DOWN ARROW
- 29EB  BLACK LOZENGE
→ 25CA  lozenge
- 29EC  WHITE CIRCLE WITH DOWN ARROW
- 29ED  BLACK CIRCLE WITH DOWN ARROW





Error bar symbols

- 29EE  ERROR-BARRED WHITE SQUARE
- 29EF  ERROR-BARRED BLACK SQUARE
- 29F0  ERROR-BARRED WHITE DIAMOND
- 29F1  ERROR-BARRED BLACK DIAMOND
- 29F2  ERROR-BARRED WHITE CIRCLE
- 29F3  ERROR-BARRED BLACK CIRCLE



Miscellaneous mathematical symbols

- 29F4  RULE-DELAYED
= colon right arrow
- 29F5  REVERSE SOLIDUS OPERATOR
→ 005C  reverse solidus
→ 2216  set minus
→ 27CD  mathematical falling diagonal
- 29F6  SOLIDUS WITH OVERBAR
- 29F7  REVERSE SOLIDUS WITH HORIZONTAL STROKE
→ 2340  apl functional symbol backslash bar




Large operators

- 29F8  BIG SOLIDUS
→ 2215  division slash
- 29F9  BIG REVERSE SOLIDUS
= z notation schema hiding
→ 2216  set minus

Specialized plus sign operators

- 29FA  DOUBLE PLUS
- 29FB  TRIPLE PLUS

Brackets

- 29FC  LEFT-POINTING CURVED ANGLE BRACKET
→ 227A  precedes
→ 2329  left-pointing angle bracket

29FD \succ RIGHT-POINTING CURVED ANGLE BRACKET
→ 227B \succ succeeds
→ 232A \succ right-pointing angle bracket

Miscellaneous mathematical symbols

29FE $+$ TINY
→ 002B $+$ plus sign
29FF $-$ MINY
→ 2212 $-$ minus sign