

Supplemental Mathematical Operators

Range: 2A00–2AFF

This file contains an excerpt from the character code tables and list of character names for *The Unicode Standard, Version 18.0 ALPHA REVIEW DRAFT*

Characters in this chart that are new for The Unicode Standard, Version 18.0 are shown in conjunction with any existing characters. For ease of reference, the new characters have been highlighted in the chart grid and in the names list. This file will not be updated with errata, or when additional characters are assigned to the Unicode Standard.

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

See <https://www.unicode.org/charts/> for access to a complete list of the latest character code charts. See <https://www.unicode.org/charts/PDF/Unicode-18.0/> for charts showing only the characters added in Unicode 18.0. See <https://www.unicode.org/Public/18.0.0/charts/> for a complete archived file of character code charts for Unicode 18.0. See <https://www.unicode.org/charts/About.html#Conventions> for conventions used in these code charts, and other general information.

Disclaimer

These charts are provided as the online reference to the character contents of the Unicode Standard, Version 18.0 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 18.0, online at <https://www.unicode.org/versions/Unicode18.0.0/>, as well as the Unicode Standard Annexes, the other Unicode Technical Reports and Standards, and the Unicode Character Database, which are available online.

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

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

Fonts

The shapes of the reference glyphs used in these code charts are not prescriptive. Considerable variation is to be expected in actual fonts.

See <https://www.unicode.org/charts/fonts.html> for a list.

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	2A0	2A1	2A2	2A3	2A4	2A5	2A6	2A7	2A8	2A9	2AA	2AB	2AC	2AD	2AE	2AF
0	○ 2A00	ƒ 2A10	ꝝ 2A20	ꝑ 2A30	ꝑ 2A40	ꝑ 2A50	ꝑ 2A60	ꝑ 2A70	ꝑ 2A80	ꝑ 2A90	ꝑ 2AA0	ꝑ 2AB0	ꝑ 2AC0	ꝑ 2AD0	ꝑ 2AE0	ꝑ 2AF0
1	⊕ 2A01	ƒ 2A11	ꝑ 2A21	ꝑ 2A31	ꝑ 2A41	ꝑ 2A51	ꝑ 2A61	ꝑ 2A71	ꝑ 2A81	ꝑ 2A91	ꝑ 2AA1	ꝑ 2AB1	ꝑ 2AC1	ꝑ 2AD1	ꝑ 2AE1	ꝑ 2AF1
2	ꝑ 2A02	ꝑ 2A12	ꝑ 2A22	ꝑ 2A32	ꝑ 2A42	ꝑ 2A52	ꝑ 2A62	ꝑ 2A72	ꝑ 2A82	ꝑ 2A92	ꝑ 2AA2	ꝑ 2AB2	ꝑ 2AC2	ꝑ 2AD2	ꝑ 2AE2	ꝑ 2AF2
3	ꝑ 2A03	ꝑ 2A13	ꝑ 2A23	ꝑ 2A33	ꝑ 2A43	ꝑ 2A53	ꝑ 2A63	ꝑ 2A73	ꝑ 2A83	ꝑ 2A93	ꝑ 2AA3	ꝑ 2AB3	ꝑ 2AC3	ꝑ 2AD3	ꝑ 2AE3	ꝑ 2AF3
4	ꝑ 2A04	ꝑ 2A14	ꝑ 2A24	ꝑ 2A34	ꝑ 2A44	ꝑ 2A54	ꝑ 2A64	ꝑ 2A74	ꝑ 2A84	ꝑ 2A94	ꝑ 2AA4	ꝑ 2AB4	ꝑ 2AC4	ꝑ 2AD4	ꝑ 2AE4	ꝑ 2AF4
5	ꝑ 2A05	ꝑ 2A15	ꝑ 2A25	ꝑ 2A35	ꝑ 2A45	ꝑ 2A55	ꝑ 2A65	ꝑ 2A75	ꝑ 2A85	ꝑ 2A95	ꝑ 2AA5	ꝑ 2AB5	ꝑ 2AC5	ꝑ 2AD5	ꝑ 2AE5	ꝑ 2AF5
6	ꝑ 2A06	ꝑ 2A16	ꝑ 2A26	ꝑ 2A36	ꝑ 2A46	ꝑ 2A56	ꝑ 2A66	ꝑ 2A76	ꝑ 2A86	ꝑ 2A96	ꝑ 2AA6	ꝑ 2AB6	ꝑ 2AC6	ꝑ 2AD6	ꝑ 2AE6	ꝑ 2AF6
7	ꝑ 2A07	ꝑ 2A17	ꝑ 2A27	ꝑ 2A37	ꝑ 2A47	ꝑ 2A57	ꝑ 2A67	ꝑ 2A77	ꝑ 2A87	ꝑ 2A97	ꝑ 2AA7	ꝑ 2AB7	ꝑ 2AC7	ꝑ 2AD7	ꝑ 2AE7	ꝑ 2AF7
8	ꝑ 2A08	ꝑ 2A18	ꝑ 2A28	ꝑ 2A38	ꝑ 2A48	ꝑ 2A58	ꝑ 2A68	ꝑ 2A78	ꝑ 2A88	ꝑ 2A98	ꝑ 2AA8	ꝑ 2AB8	ꝑ 2AC8	ꝑ 2AD8	ꝑ 2AE8	ꝑ 2AF8
9	ꝑ 2A09	ꝑ 2A19	ꝑ 2A29	ꝑ 2A39	ꝑ 2A49	ꝑ 2A59	ꝑ 2A69	ꝑ 2A79	ꝑ 2A89	ꝑ 2A99	ꝑ 2AA9	ꝑ 2AB9	ꝑ 2AC9	ꝑ 2AD9	ꝑ 2AE9	ꝑ 2AF9
A	ꝑ 2A0A	ꝑ 2A1A	ꝑ 2A2A	ꝑ 2A3A	ꝑ 2A4A	ꝑ 2A5A	ꝑ 2A6A	ꝑ 2A7A	ꝑ 2A8A	ꝑ 2A9A	ꝑ 2AA9	ꝑ 2AB9	ꝑ 2AC9	ꝑ 2AD9	ꝑ 2AE9	ꝑ 2AF9
B	ꝑ 2A0B	ꝑ 2A1B	ꝑ 2A2B	ꝑ 2A3B	ꝑ 2A4B	ꝑ 2A5B	ꝑ 2A6B	ꝑ 2A7B	ꝑ 2A8B	ꝑ 2A9B	ꝑ 2AA9	ꝑ 2AB9	ꝑ 2AC9	ꝑ 2AD9	ꝑ 2AE9	ꝑ 2AF9
C	ꝑ 2A0C	ꝑ 2A1C	ꝑ 2A2C	ꝑ 2A3C	ꝑ 2A4C	ꝑ 2A5C	ꝑ 2A6C	ꝑ 2A7C	ꝑ 2A8C	ꝑ 2A9C	ꝑ 2AA9	ꝑ 2AB9	ꝑ 2AC9	ꝑ 2AD9	ꝑ 2AE9	ꝑ 2AF9
D	ƒ 2A0D	ꝑ 2A1D	ꝑ 2A2D	ꝑ 2A3D	ꝑ 2A4D	ꝑ 2A5D	ꝑ 2A6D	ꝑ 2A7D	ꝑ 2A8D	ꝑ 2A9D	ꝑ 2AA9	ꝑ 2AB9	ꝑ 2AC9	ꝑ 2AD9	ꝑ 2AE9	ꝑ 2AF9
E	ƒ 2A0E	ꝑ 2A1E	ꝑ 2A2E	ꝑ 2A3E	ꝑ 2A4E	ꝑ 2A5E	ꝑ 2A6E	ꝑ 2A7E	ꝑ 2A8E	ꝑ 2A9E	ꝑ 2AA9	ꝑ 2AB9	ꝑ 2AC9	ꝑ 2AD9	ꝑ 2AE9	ꝑ 2AF9
F	ƒ 2A0F	ꝑ 2A1F	ꝑ 2A2F	ꝑ 2A3F	ꝑ 2A4F	ꝑ 2A5F	ꝑ 2A6F	ꝑ 2A7F	ꝑ 2A8F	ꝑ 2A9F	ꝑ 2AA9	ꝑ 2AB9	ꝑ 2AC9	ꝑ 2AD9	ꝑ 2AE9	ꝑ 2AF9

N-ary operators

2A00	⊕	N-ARY CIRCLED DOT OPERATOR → 2299 ⊕ circled dot operator → 25C9 ⊕ fisheye
2A01	⊕	N-ARY CIRCLED PLUS OPERATOR → 2295 ⊕ circled plus
2A02	⊗	N-ARY CIRCLED TIMES OPERATOR → 2297 ⊗ circled times → 2B59 ⊗ heavy circled saltre
2A03	∪	N-ARY UNION OPERATOR WITH DOT → 228D ∪ multiset multiplication
2A04	⊕	N-ARY UNION OPERATOR WITH PLUS → 228E ⊕ multiset union
2A05	Π	N-ARY SQUARE INTERSECTION OPERATOR → 2293 Π square cap
2A06	⊔	N-ARY SQUARE UNION OPERATOR → 2294 ⊔ square cup
2A07	ℳ	TWO LOGICAL AND OPERATOR = merge → 2A55 ℳ two intersecting logical and
2A08	ℳ	TWO LOGICAL OR OPERATOR → 2A56 ℳ two intersecting logical or
2A09	×	N-ARY TIMES OPERATOR → 00D7 × multiplication sign

Summations and integrals

2A0A	Σ	MODULO TWO SUM → 2211 Σ n-ary summation
2A0B	∫	SUMMATION WITH INTEGRAL
2A0C	∯	QUADRUPLE INTEGRAL OPERATOR → 222D ∯ triple integral ≈ 222B ∯ 222B ∯ 222B ∯
2A0D	⨍	FINITE PART INTEGRAL
2A0E	⨍	INTEGRAL WITH DOUBLE STROKE
2A0F	⨍	INTEGRAL AVERAGE WITH SLASH
2A10	⨍	CIRCULATION FUNCTION
2A11	⨍	ANTICLOCKWISE INTEGRATION
2A12	⨍	LINE INTEGRATION WITH RECTANGULAR PATH AROUND POLE
2A13	⨍	LINE INTEGRATION WITH SEMICIRCULAR PATH AROUND POLE
2A14	⨍	LINE INTEGRATION NOT INCLUDING THE POLE
2A15	∮	INTEGRAL AROUND A POINT OPERATOR → 222E ∮ contour integral
2A16	⨍	QUATERNION INTEGRAL OPERATOR
2A17	⨍	INTEGRAL WITH LEFTWARDS ARROW WITH HOOK
2A18	⨍	INTEGRAL WITH TIMES SIGN
2A19	⨍	INTEGRAL WITH INTERSECTION
2A1A	⨍	INTEGRAL WITH UNION
2A1B	⨍	INTEGRAL WITH OVERBAR = upper integral
2A1C	⨍	INTEGRAL WITH UNDERBAR = lower integral

Miscellaneous large operators

2A1D	⋈	JOIN = large bowtie • relational database theory → 22C8 ⋈ bowtie → 27D7 ⋈ full outer join
2A1E	◁	LARGE LEFT TRIANGLE OPERATOR • relational database theory → 25C1 ▷ white left-pointing triangle

2A1F	§	Z NOTATION SCHEMA COMPOSITION → 2A3E § z notation relational composition
2A20	»	Z NOTATION SCHEMA PIPING → 226B » much greater-than
2A21	↑	Z NOTATION SCHEMA PROJECTION → 21BE ↑ upwards harpoon with barb rightwards

Plus and minus sign operators

2A22	٫	PLUS SIGN WITH SMALL CIRCLE ABOVE
2A23	߂	PLUS SIGN WITH CIRCUMFLEX ACCENT ABOVE
2A24	߂	PLUS SIGN WITH TILDE ABOVE = positive difference or sum
2A25	߂	PLUS SIGN WITH DOT BELOW → 2214 ߂ dot plus
2A26	߂	PLUS SIGN WITH TILDE BELOW = sum or positive difference
2A27	߂	PLUS SIGN WITH SUBSCRIPT TWO = nim-addition
2A28	߂	PLUS SIGN WITH BLACK TRIANGLE
2A29	߂	MINUS SIGN WITH COMMA ABOVE
2A2A	߂	MINUS SIGN WITH DOT BELOW → 2238 ߂ dot minus
2A2B	߂	MINUS SIGN WITH FALLING DOTS
2A2C	߂	MINUS SIGN WITH RISING DOTS
2A2D	߂	PLUS SIGN IN LEFT HALF CIRCLE
2A2E	߂	PLUS SIGN IN RIGHT HALF CIRCLE

Multiplication and division sign operators

2A2F	×	VECTOR OR CROSS PRODUCT → 00D7 × multiplication sign
2A30	⊗	MULTIPLICATION SIGN WITH DOT ABOVE
2A31	⊗	MULTIPLICATION SIGN WITH UNDERBAR
2A32	⊗	SEMDIRECT PRODUCT WITH BOTTOM CLOSED
2A33	⊗	SMASH PRODUCT
2A34	⊗	MULTIPLICATION SIGN IN LEFT HALF CIRCLE
2A35	⊗	MULTIPLICATION SIGN IN RIGHT HALF CIRCLE
2A36	⊗	CIRCLED MULTIPLICATION SIGN WITH CIRCUMFLEX ACCENT
2A37	⊗	MULTIPLICATION SIGN IN DOUBLE CIRCLE
2A38	÷	CIRCLED DIVISION SIGN

Miscellaneous mathematical operators

2A39	▲	PLUS SIGN IN TRIANGLE
2A3A	▲	MINUS SIGN IN TRIANGLE
2A3B	▲	MULTIPLICATION SIGN IN TRIANGLE
2A3C	▬	INTERIOR PRODUCT → 230B▬ right floor ~ 2A3C FE00▬ tall variant with narrow foot
2A3D	▬	RIGHTHAND INTERIOR PRODUCT → 230A▬ left floor → 2319▬ turned not sign ~ 2A3D FE00▬ tall variant with narrow foot
2A3E	߂	Z NOTATION RELATIONAL COMPOSITION → 2A1F ߂ z notation schema composition
2A3F	܂	AMALGAMATION OR COPRODUCT → 2210 ܂ n-ary coproduct

Intersections and unions

2A40	܂	INTERSECTION WITH DOT → 2227܂ logical and → 27D1܂ and with dot
2A41	܂	UNION WITH MINUS SIGN = z notation bag subtraction → 228E܂ multiset union

2A42	Ӯ	UNION WITH OVERBAR
2A43	ӯ	INTERSECTION WITH OVERBAR
2A44	ӷ	INTERSECTION WITH LOGICAL AND
2A45	Ӹ	UNION WITH LOGICAL OR
2A46	ӹ	UNION ABOVE INTERSECTION
2A47	Ӻ	INTERSECTION ABOVE UNION
2A48	ӻ	UNION ABOVE BAR ABOVE INTERSECTION
2A49	ӻ	INTERSECTION ABOVE BAR ABOVE UNION
2A4A	ӻ	UNION BESIDE AND JOINED WITH UNION
2A4B	ӻ	INTERSECTION BESIDE AND JOINED WITH INTERSECTION
2A4C	ӻ	CLOSED UNION WITH SERIFS → 222A U union
2A4D	ӻ	CLOSED INTERSECTION WITH SERIFS → 2229 n intersection
2A4E	ӻ	DOUBLE SQUARE INTERSECTION
2A4F	ӻ	DOUBLE SQUARE UNION
2A50	ӻ	CLOSED UNION WITH SERIFS AND SMASH PRODUCT

Logical ands and ors

2A51	ߵ	LOGICAL AND WITH DOT ABOVE
2A52	߶	LOGICAL OR WITH DOT ABOVE
2A53	߷	DOUBLE LOGICAL AND
2A54	߸	DOUBLE LOGICAL OR
2A55	߹	TWO INTERSECTING LOGICAL AND → 2A07 ߹ two logical and operator
2A56	߻	TWO INTERSECTING LOGICAL OR → 2A08 ߻ two logical or operator
2A57	߻	SLOPING LARGE OR
2A58	߻	SLOPING LARGE AND
2A59	߻	LOGICAL OR OVERLAPPING LOGICAL AND
2A5A	߻	LOGICAL AND WITH MIDDLE STEM
2A5B	߻	LOGICAL OR WITH MIDDLE STEM
2A5C	߻	LOGICAL AND WITH HORIZONTAL DASH
2A5D	߻	LOGICAL OR WITH HORIZONTAL DASH
2A5E	߻	LOGICAL AND WITH DOUBLE OVERBAR → 2306 ߻ perspective
2A5F	߻	LOGICAL AND WITH UNDERBAR
2A60	߻	LOGICAL AND WITH DOUBLE UNDERBAR → 2259 ߻ estimates
2A61	߻	SMALL VEE WITH UNDERBAR → 225A ߻ equiangular to
2A62	߻	LOGICAL OR WITH DOUBLE OVERBAR
2A63	߻	LOGICAL OR WITH DOUBLE UNDERBAR → 225A ߻ equiangular to

Miscellaneous mathematical operators

2A64	߻	Z NOTATION DOMAIN ANTIRESTRICTION
2A65	߻	Z NOTATION RANGE ANTIRESTRICTION → 2332 ߻ conical taper

Relational operators

2A66	߻	EQUALS SIGN WITH DOT BELOW → 2250 ߻ approaches the limit
2A67	߻	IDENTICAL WITH DOT ABOVE
2A68	߻	TRIPLE HORIZONTAL BAR WITH DOUBLE VERTICAL STROKE = identical and parallel to → 22D5 ߻ equal and parallel to → 29E5 ߻ identical to and slanted parallel
2A69	߻	TRIPLE HORIZONTAL BAR WITH TRIPLE VERTICAL STROKE
2A6A	߻	~ TILDE OPERATOR WITH DOT ABOVE

2A6B	߻	TILDE OPERATOR WITH RISING DOTS → 223B ߻ homothetic
2A6C	߻	SIMILAR MINUS SIMILAR ~ 2A6C FE00 ߻ using lazy S
2A6D	߻	CONGRUENT WITH DOT ABOVE → 2245 ߻ approximately equal to
2A6E	߻	EQUALS WITH ASTERISK → 225B ߻ star equals
2A6F	߻	ALMOST EQUAL TO WITH CIRCUMFLEX ACCENT
2A70	߻	APPROXIMATELY EQUAL OR EQUAL TO → 2245 ߻ approximately equal to
2A71	߻	EQUALS SIGN ABOVE PLUS SIGN • black stands slightly better (chess notation)
2A72	߻	PLUS SIGN ABOVE EQUALS SIGN • white stands slightly better (chess notation)
2A73	߻	EQUALS SIGN ABOVE TILDE OPERATOR
2A74	߻	DOUBLE COLON EQUAL ≈ 003A : 003A : 003D =
2A75	߻	TWO CONSECUTIVE EQUALS SIGNS ≈ 003D = 003D =
2A76	߻	THREE CONSECUTIVE EQUALS SIGNS ≈ 003D = 003D = 003D =
2A77	߻	EQUALS SIGN WITH TWO DOTS ABOVE AND TWO DOTS BELOW
2A78	߻	EQUIVALENT WITH FOUR DOTS ABOVE
2A79	߻	LESS-THAN WITH CIRCLE INSIDE
2A7A	߻	GREATER-THAN WITH CIRCLE INSIDE
2A7B	߻	LESS-THAN WITH QUESTION MARK ABOVE
2A7C	߻	GREATER-THAN WITH QUESTION MARK ABOVE
2A7D	߻	LESS-THAN OR SLANTED EQUAL TO → 2264 ߻ less-than or equal to
2A7E	߻	GREATER-THAN OR SLANTED EQUAL TO → 2265 ߻ greater-than or equal to
2A7F	߻	LESS-THAN OR SLANTED EQUAL TO WITH DOT INSIDE
2A80	߻	GREATER-THAN OR SLANTED EQUAL TO WITH DOT INSIDE
2A81	߻	LESS-THAN OR SLANTED EQUAL TO WITH DOT ABOVE
2A82	߻	GREATER-THAN OR SLANTED EQUAL TO WITH DOT ABOVE
2A83	߻	LESS-THAN OR SLANTED EQUAL TO WITH DOT ABOVE RIGHT
2A84	߻	GREATER-THAN OR SLANTED EQUAL TO WITH DOT ABOVE LEFT
2A85	߻	LESS-THAN OR APPROXIMATE
2A86	߻	GREATER-THAN OR APPROXIMATE
2A87	߻	LESS-THAN AND SINGLE-LINE NOT EQUAL TO → 2268 ߻ less-than but not equal to
2A88	߻	GREATER-THAN AND SINGLE-LINE NOT EQUAL TO → 2269 ߻ greater-than but not equal to
2A89	߻	LESS-THAN AND NOT APPROXIMATE
2A8A	߻	GREATER-THAN AND NOT APPROXIMATE
2A8B	߻	LESS-THAN ABOVE DOUBLE-LINE EQUAL ABOVE GREATER-THAN → 22DA ߻ less-than equal to or greater-than
2A8C	߻	GREATER-THAN ABOVE DOUBLE-LINE EQUAL ABOVE LESS-THAN → 22DB ߻ greater-than equal to or less-than
2A8D	߻	LESS-THAN ABOVE SIMILAR OR EQUAL
2A8E	߻	GREATER-THAN ABOVE SIMILAR OR EQUAL

2A8F	\lessapprox	LESS-THAN ABOVE SIMILAR ABOVE GREATER-THAN	2AB1	$\not\sim$	PRECEDES ABOVE SINGLE-LINE NOT EQUAL TO
2A90	\gtrapprox	GREATER-THAN ABOVE SIMILAR ABOVE LESS-THAN	2AB2	$\not\sim$	SUCCEEDS ABOVE SINGLE-LINE NOT EQUAL TO
2A91	\lessdot	LESS-THAN ABOVE GREATER-THAN ABOVE DOUBLE-LINE EQUAL	2AB3	$\not\sim$	PRECEDES ABOVE EQUALS SIGN
2A92	\gtrdot	GREATER-THAN ABOVE LESS-THAN ABOVE DOUBLE-LINE EQUAL	2AB4	$\not\sim$	SUCCEEDS ABOVE EQUALS SIGN
2A93	$\lessapprox\approx$	LESS-THAN ABOVE SLANTED EQUAL ABOVE GREATER-THAN ABOVE SLANTED EQUAL	2AB5	$\not\sim$	PRECEDES ABOVE NOT EQUAL TO
2A94	$\gtrapprox\approx$	GREATER-THAN ABOVE SLANTED EQUAL ABOVE LESS-THAN ABOVE SLANTED EQUAL	2AB6	$\not\sim$	SUCCEEDS ABOVE NOT EQUAL TO
2A95	$\lessapprox\ll$	SLANTED EQUAL TO OR LESS-THAN → 22DC $\not\sim$ equal to or less-than	2AB7	$\not\approx\approx$	PRECEDES ABOVE ALMOST EQUAL TO
2A96	$\gtrapprox\gg$	SLANTED EQUAL TO OR GREATER-THAN → 22DD $\not\sim$ equal to or greater-than	2AB8	$\not\approx\approx$	SUCCEEDS ABOVE ALMOST EQUAL TO
2A97	$\lessapprox\ll$	SLANTED EQUAL TO OR LESS-THAN WITH DOT INSIDE	2AB9	$\not\approx\approx$	PRECEDES ABOVE NOT ALMOST EQUAL TO
2A98	$\gtrapprox\gg$	SLANTED EQUAL TO OR GREATER-THAN WITH DOT INSIDE	2ABA	$\not\approx\approx$	SUCCEEDS ABOVE NOT ALMOST EQUAL TO
2A99	$\lessapprox\approx$	DOUBLE-LINE EQUAL TO OR LESS-THAN → 22DC $\not\sim$ equal to or less-than	2ABB	$\not\ll$	DOUBLE PRECEDES
2A9A	$\gtrapprox\approx$	DOUBLE-LINE EQUAL TO OR GREATER-THAN → 22DD $\not\sim$ equal to or greater-than	2ABC	$\not\gg$	DOUBLE SUCCEEDS
2A9B	$\lessapprox\approx$	DOUBLE-LINE SLANTED EQUAL TO OR LESS-THAN			
2A9C	$\gtrapprox\approx$	DOUBLE-LINE SLANTED EQUAL TO OR GREATER-THAN			
2A9D	$\lessapprox\approx$	SIMILAR OR LESS-THAN ~ 2A9D FE00 $\not\sim$ with similar following the slant of the upper leg			
2A9E	$\gtrapprox\approx$	SIMILAR OR GREATER-THAN ~ 2A9E FE00 $\not\sim$ with similar following the slant of the upper leg	2ACD	$\not\supset$	SUPERSET OF ABOVE NOT EQUAL TO
2A9F	$\lessapprox\approx$	SIMILAR ABOVE LESS-THAN ABOVE EQUALS SIGN	2ACD	$\not\supset$	~ 2ACC FE00 $\not\supset$ with stroke through bottom members
2AA0	$\lessapprox\approx$	SIMILAR ABOVE GREATER-THAN ABOVE EQUALS SIGN	2ACD	\square	SQUARE LEFT OPEN BOX OPERATOR
2AA1	\ll	DOUBLE NESTED LESS-THAN = absolute continuity → 226A \ll much less-than	2ACE	\square	SQUARE RIGHT OPEN BOX OPERATOR
2AA2	\gg	DOUBLE NESTED GREATER-THAN → 226B \gg much greater-than	2ACF	\square	CLOSED SUBSET
2AA3	$\ll\bar{}$	DOUBLE NESTED LESS-THAN WITH UNDERBAR			→ 2282 \subset subset of
2AA4	\times	GREATER-THAN OVERLAPPING LESS-THAN	2AD0	\square	CLOSED SUPERSET
2AA5	\times	GREATER-THAN BESIDE LESS-THAN	2AD0	\square	→ 2283 \supset superset of
2AA6	\triangleleft	LESS-THAN CLOSED BY CURVE	2AD1	\square	CLOSED SUBSET OR EQUAL TO
2AA7	\triangleright	GREATER-THAN CLOSED BY CURVE	2AD2	\square	CLOSED SUPERSET OR EQUAL TO
2AA8	$\triangleleft\triangleleft$	LESS-THAN CLOSED BY CURVE ABOVE SLANTED EQUAL	2AD3	\sqsubset	SUBSET ABOVE SUPERSET
2AA9	$\triangleright\triangleright$	GREATER-THAN CLOSED BY CURVE ABOVE SLANTED EQUAL	2AD4	\sqsupset	SUPERSET ABOVE SUBSET
2AAA	\triangleleft	SMALLER THAN	2AD5	\sqsubset	SUBSET ABOVE SUBSET
2AAB	\triangleright	LARGER THAN	2AD6	\sqsupset	SUPERSET ABOVE SUPERSET
2AAC	$\triangleleft\triangleleft$	SMALLER THAN OR EQUAL TO ~ 2AAC FE00 \triangleleft with slanted equal	2AD7	$\triangleleft\triangleleft$	SUPERSET BESIDE SUBSET
2AAD	$\triangleright\triangleright$	LARGER THAN OR EQUAL TO ~ 2AAD FE00 \triangleright with slanted equal	2AD8	$\triangleleft\triangleleft$	SUPERSET BESIDE AND JOINED BY DASH WITH SUBSET
2AAE	\triangleq	EQUALS SIGN WITH BUMPY ABOVE → 224F \triangleq difference between			
2AAF	$\triangleleft\triangleleft$	PRECEDES ABOVE SINGLE-LINE EQUALS SIGN → 227C $\triangleleft\triangleleft$ precedes or equal to			
2AB0	$\triangleright\triangleright$	SUCCEEDS ABOVE SINGLE-LINE EQUALS SIGN → 227D $\triangleright\triangleright$ succeeds or equal to			

Subset and superset relations

2ABD	\subset	SUBSET WITH DOT
2ABE	\supset	SUPERSET WITH DOT
2ABF	\subset	SUBSET WITH PLUS SIGN BELOW
2AC0	\supset	SUPERSET WITH PLUS SIGN BELOW
2AC1	\subset	SUBSET WITH MULTIPLICATION SIGN BELOW
2AC2	\supset	SUPERSET WITH MULTIPLICATION SIGN BELOW
2AC3	\subset	SUBSET OF OR EQUAL TO WITH DOT ABOVE
2AC4	\supset	SUPERSET OF OR EQUAL TO WITH DOT ABOVE
2AC5	\subset	SUBSET OF ABOVE EQUALS SIGN
2AC6	\supset	SUPERSET OF ABOVE EQUALS SIGN
2AC7	\subset	SUBSET OF ABOVE TILDE OPERATOR
2AC8	\supset	SUPERSET OF ABOVE TILDE OPERATOR
2AC9	\subset	SUBSET OF ABOVE ALMOST EQUAL TO
2ACA	\supset	SUPERSET OF ABOVE ALMOST EQUAL TO
2ACB	\subset	SUBSET OF ABOVE NOT EQUAL TO ~ 2ACB FE00 \subset with stroke through bottom members
2ACC	$\not\supset$	SUPERSET OF ABOVE NOT EQUAL TO ~ 2ACC FE00 $\not\supset$ with stroke through bottom members
2ACD	\square	SQUARE LEFT OPEN BOX OPERATOR
2ACE	\square	SQUARE RIGHT OPEN BOX OPERATOR
2ACF	\square	CLOSED SUBSET
		→ 2282 \subset subset of
2AD0	\square	CLOSED SUPERSET
		→ 2283 \supset superset of
2AD1	\square	CLOSED SUBSET OR EQUAL TO
2AD2	\square	CLOSED SUPERSET OR EQUAL TO
2AD3	\sqsubset	SUBSET ABOVE SUPERSET
2AD4	\sqsupset	SUPERSET ABOVE SUBSET
2AD5	\sqsubset	SUBSET ABOVE SUBSET
2AD6	\sqsupset	SUPERSET ABOVE SUPERSET
2AD7	$\triangleleft\triangleleft$	SUPERSET BESIDE SUBSET
2AD8	$\triangleleft\triangleleft$	SUPERSET BESIDE AND JOINED BY DASH WITH SUBSET

Forks

2AD9	\pitchfork	ELEMENT OF OPENING DOWNWARDS → 2208 \in element of → 27D2 \pitchfork element of opening upwards
2ADA	$\pitchfork\top$	PITCHFORK WITH TEE TOP → 22D4 $\pitchfork\top$ pitchfork
2ADB	$\pitchfork\cap$	TRANSVERSAL INTERSECTION → 22D4 $\pitchfork\cap$ pitchfork

2ADC	\downarrow	FORKING = not independent • an equational logic symbol, not a computing science symbol • non-independence (original concept) is related to forking $\equiv 2ADD \downarrow 0338 \not\equiv$	2AF4	$\ \ $	TRIPLE VERTICAL BAR BINARY RELATION = interleave $\rightarrow 2980 \ \ $ triple vertical bar delimiter	
2ADD	\downarrow	NONFORKING = independent • an equational logic symbol, not a computing science symbol • independence (original concept) is related to non-forking	2AF5	$\#\#$	TRIPLE VERTICAL BAR WITH HORIZONTAL STROKE $\rightarrow 27CA \not\ $ vertical bar with horizontal stroke	
Tacks and turnstiles						
2ADE	\dashv	SHORT LEFT TACK $\rightarrow 22A3 \dashv$ left tack	2AF6	$:$	TRIPLE COLON OPERATOR • logic $\rightarrow 205D :$ tricolon $\rightarrow 22EE :$ vertical ellipsis	
2ADF	\top	SHORT DOWN TACK $\rightarrow 22A4 \top$ down tack	Relations			
2AE0	\perp	SHORT UP TACK $\rightarrow 22A5 \perp$ up tack	2AF7	$\ll\ll$	TRIPLE NESTED LESS-THAN $\rightarrow 22D8 \ll\ll$ very much less-than	
2AE1	$\perp\perp$	PERPENDICULAR WITH S	2AF8	$\gg\gg$	TRIPLE NESTED GREATER-THAN $\rightarrow 22D9 \gg\gg$ very much greater-than	
2AE2	$\not\equiv$	VERTICAL BAR TRIPLE RIGHT TURNSTILE = ordinarily satisfies	2AF9	$\not\leq\leq$	DOUBLE-LINE SLANTED LESS-THAN OR EQUAL TO $\rightarrow 2266 \not\leq\leq$ less-than over equal to	
2AE3	$\not\equiv\equiv$	DOUBLE VERTICAL BAR LEFT TURNSTILE $\rightarrow 22A9 \not\equiv\equiv$ forces	2AFA	$\not\geq\geq$	DOUBLE-LINE SLANTED GREATER-THAN OR EQUAL TO $\rightarrow 2267 \not\geq\geq$ greater-than over equal to	
2AE4	$\not\equiv\equiv\equiv$	VERTICAL BAR DOUBLE LEFT TURNSTILE $\rightarrow 22A8 \not\equiv\equiv\equiv$ true	2AFB	$\not\ \ \ $	TRIPLE SOLIDUS BINARY RELATION $\rightarrow 2AF4 \ \ $ triple vertical bar binary relation	
2AE5	$\not\equiv\equiv\equiv\equiv$	DOUBLE VERTICAL BAR DOUBLE LEFT TURNSTILE	Operators			
2AE6	$\not\equiv\equiv\equiv\equiv\equiv$	LONG DASH FROM LEFT MEMBER OF DOUBLE VERTICAL $\rightarrow 22A9 \not\equiv\equiv\equiv\equiv\equiv$ forces	2AFC	$\ \ \ \ $	LARGE TRIPLE VERTICAL BAR OPERATOR • often n-ary $\rightarrow 2AF4 \ \ $ triple vertical bar binary relation $\rightarrow 2980 \ \ $ triple vertical bar delimiter	
2AE7	$\not\equiv\equiv\equiv\equiv\equiv\equiv$	SHORT DOWN TACK WITH OVERBAR $\rightarrow 22A4 \top$ down tack $\rightarrow 2351 \overline{T}$ apl functional symbol up tack overbar $\rightarrow 3012 \overline{T}$ postal mark	2AFD	$\not\ \ \ \ $	DOUBLE SOLIDUS OPERATOR $\rightarrow 2225 \not\ \ \ \ $ parallel to	
2AE8	$\not\equiv\equiv\equiv\equiv\equiv\equiv\equiv$	SHORT UP TACK WITH UNDERBAR $\rightarrow 22A5 \perp$ up tack $\rightarrow 234A \underline{\perp}$ apl functional symbol down tack underbar	2AFE	$\not\ \ \ \ \ $	WHITE VERTICAL BAR = Dijkstra choice	
2AE9	$\not\equiv\equiv\equiv\equiv\equiv\equiv\equiv\equiv$	SHORT UP TACK ABOVE SHORT DOWN TACK	2AFF	$\not\ \ \ \ \ \ $	N-ARY WHITE VERTICAL BAR = n-ary Dijkstra choice	
2AEA	$\not\equiv\equiv\equiv\equiv\equiv\equiv\equiv\equiv\equiv$	DOUBLE DOWN TACK				
2AEB	$\not\equiv\equiv\equiv\equiv\equiv\equiv\equiv\equiv\equiv\equiv$	DOUBLE UP TACK = independence • probability theory				
2AEC	$\not\equiv\equiv\equiv\equiv\equiv\equiv\equiv\equiv\equiv\equiv\equiv$	DOUBLE STROKE NOT SIGN $\rightarrow 00AC \not\equiv$ not sign				
2AED	$\not\equiv\equiv\equiv\equiv\equiv\equiv\equiv\equiv\equiv\equiv\equiv\equiv$	REVERSED DOUBLE STROKE NOT SIGN $\rightarrow 2310 \not\equiv$ reversed not sign				
Vertical line operators						
2AEE	$\not\mid$	DOES NOT DIVIDE WITH REVERSED NEGATION SLASH $\rightarrow 2224 \not\mid$ does not divide				
2AEF	$\not\mid\mid$	VERTICAL LINE WITH CIRCLE ABOVE				
2AF0	$\not\mid\mid\mid$	VERTICAL LINE WITH CIRCLE BELOW				
2AF1	$\not\mid\mid\mid\mid$	DOWN TACK WITH CIRCLE BELOW = necessarily satisfies $\rightarrow 27DF \not\mid$ up tack with circle above				
2AF2	$\not\mid\mid\mid\mid\mid$	PARALLEL WITH HORIZONTAL STROKE $\rightarrow 2226 \not\mid$ not parallel to $\rightarrow 27CA \not\ $ vertical bar with horizontal stroke				
2AF3	$\not\mid\mid\mid\mid\mid\mid$	PARALLEL WITH TILDE OPERATOR				

Standardized Variation Sequences		
2A3C	 INTERIOR PRODUCT	
2A3C	 tall variant with narrow foot	
2A3D	 RIGHTHAND INTERIOR PRODUCT	
2A3D	 tall variant with narrow foot	
2A6C	 SIMILAR MINUS SIMILAR	
2A6C	 using lazy S	
2A9D	 SIMILAR OR LESS-THAN	
2A9D	 with similar following the slant of the upper leg	
2A9E	 SIMILAR OR GREATER-THAN	
2A9E	 with similar following the slant of the upper leg	
2AAC	 SMALLER THAN OR EQUAL TO	
2AAC	 with slanted equal	
2AAD	 LARGER THAN OR EQUAL TO	
2AAD	 with slanted equal	
2ACB	 SUBSET OF ABOVE NOT EQUAL TO	
2ACB	 with stroke through bottom members	
2ACC	 SUPERSET OF ABOVE NOT EQUAL TO	
2ACC	 with stroke through bottom members	