

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, last updated for
The Unicode Standard, Version 4.0.

This file may be updated as necessary to reflect errata without notice. For an up-to-date list of errata, see <http://www.unicode.org/errata/>

Disclaimer

These charts are provided as the on-line reference to the character contents of the Unicode Standard, Version 4.0 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 excerpt file, please consult the appropriate sections of The Unicode Standard, Version 4.0 (ISBN 0-321-18578-1), as well as Unicode Standard Annexes #9, #11, #14, #15, #24 and #29, the other Unicode Technical Reports and the Unicode Character Database, which are available on-line.

See <http://www.unicode.org/Public/UNIDATA/UCD.html> and <http://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. The particular fonts used in these charts were provided to the Unicode Consortium by a number of different font designers, who own the rights to the fonts.

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

Terms of Use

































































































































































































































































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

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

N-ary operators

- 2A00 \odot N-ARY CIRCLED DOT OPERATOR
 → 2299 \odot circled dot operator
 → 25C9 \odot fisheye
- 2A01 \oplus N-ARY CIRCLED PLUS OPERATOR
 → 2295 \oplus circled plus
- 2A02 \otimes N-ARY CIRCLED TIMES OPERATOR
 → 2297 \otimes circled times
- 2A03 $\dot{\cup}$ N-ARY UNION OPERATOR WITH DOT
- 2A04 $\dot{\cup}$ N-ARY UNION OPERATOR WITH PLUS
 → 228E $\dot{\cup}$ multiset union
- 2A05 \sqcap N-ARY SQUARE INTERSECTION OPERATOR
 → 2293 \sqcap square cap
- 2A06 \sqcup N-ARY SQUARE UNION OPERATOR
 → 2294 \sqcup square cup
- 2A07 \pitchfork TWO LOGICAL AND OPERATOR
 = merge
 → 2A55 \pitchfork two intersecting logical and
- 2A08 \vee TWO LOGICAL OR OPERATOR
 → 2A56 \vee two intersecting logical or
- 2A09 \times N-ARY TIMES OPERATOR
 → 00D7 \times multiplication sign

Summations and integrals

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

Miscellaneous large operators

- 2A1D \bowtie JOIN
 = large bowtie
 • relational database theory
 → 22C8 \bowtie bowtie
 → 27D7 \bowtie full outer join
- 2A1E \triangleleft LARGE LEFT TRIANGLE OPERATOR
 • relational database theory
 → 25C1 \triangleleft white left-pointing triangle
- 2A1F $\mathbin{\text{;}}$ Z NOTATION SCHEMA COMPOSITION
 → 2A3E $\mathbin{\text{;}}$ z notation relational composition
- 2A20 \gg Z NOTATION SCHEMA PIPING
 → 226B \gg much greater-than
- 2A21 \upharpoonright Z NOTATION SCHEMA PROJECTION
 → 21BE \upharpoonright upwards harpoon with barb rightwards

Plus and minus sign operators

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

Multiplication and division sign operators

- 2A2F \times VECTOR OR CROSS PRODUCT
 → 00D7 \times multiplication sign
- 2A30 \times MULTIPLICATION SIGN WITH DOT ABOVE
- 2A31 \times MULTIPLICATION SIGN WITH UNDERBAR
- 2A32 \times SEMIDIRECT PRODUCT WITH BOTTOM CLOSED
- 2A33 \ast SMASH PRODUCT
- 2A34 \otimes MULTIPLICATION SIGN IN LEFT HALF CIRCLE
- 2A35 \otimes MULTIPLICATION SIGN IN RIGHT HALF CIRCLE
- 2A36 \otimes CIRCLED MULTIPLICATION SIGN WITH CIRCUMFLEX ACCENT

2A37 \odot MULTIPLICATION SIGN IN DOUBLE CIRCLE

2A38 \oplus CIRCLED DIVISION SIGN

Miscellaneous mathematical operators

2A39 \triangle PLUS SIGN IN TRIANGLE

2A3A \triangle MINUS SIGN IN TRIANGLE

2A3B \triangle MULTIPLICATION SIGN IN TRIANGLE

2A3C \lrcorner INTERIOR PRODUCT

→ 230B \lrcorner right floor

2A3D \llcorner RIGHTHAND INTERIOR PRODUCT

→ 230A \llcorner left floor

→ 2319 \lrcorner turned not sign

2A3E $\mathbin{\text{;}}$ Z NOTATION RELATIONAL COMPOSITION

→ 2A1F $\mathbin{\text{;}}$ z notation schema composition

2A3F \sqcup AMALGAMATION OR COPRODUCT

→ 2210 \sqcup n-ary coproduct

Intersections and unions

2A40 \cap INTERSECTION WITH DOT

→ 2227 \cap logical and

→ 27D1 \cap and with dot

2A41 \cup UNION WITH MINUS SIGN

= z notation bag subtraction

→ 228E \cup multiset union

2A42 $\overline{\cap}$ UNION WITH OVERBAR

2A43 $\overline{\cap}$ INTERSECTION WITH OVERBAR

2A44 \cap INTERSECTION WITH LOGICAL AND

2A45 \cup UNION WITH LOGICAL OR

2A46 \cap UNION ABOVE INTERSECTION

2A47 \cap INTERSECTION ABOVE UNION

2A48 \cap UNION ABOVE BAR ABOVE INTERSECTION

2A49 \cap INTERSECTION ABOVE BAR ABOVE UNION

2A4A \cup UNION BESIDE AND JOINED WITH UNION

2A4B \cup INTERSECTION BESIDE AND JOINED WITH INTERSECTION

2A4C \sqcup CLOSED UNION WITH SERIFS

→ 222A \sqcup union

2A4D \sqcup CLOSED INTERSECTION WITH SERIFS

→ 2229 \cap intersection

2A4E \boxplus DOUBLE SQUARE INTERSECTION

2A4F \boxplus DOUBLE SQUARE UNION

2A50 \boxplus CLOSED UNION WITH SERIFS AND SMASH PRODUCT

Logical ands and ors

2A51 $\mathbin{\wedge}$ LOGICAL AND WITH DOT ABOVE

2A52 $\mathbin{\vee}$ LOGICAL OR WITH DOT ABOVE

2A53 $\mathbin{\wedge}$ DOUBLE LOGICAL AND

2A54 $\mathbin{\vee}$ DOUBLE LOGICAL OR

2A55 $\mathbin{\wedge}$ TWO INTERSECTING LOGICAL AND
→ 2A07 $\mathbin{\wedge}$ two logical and operator

2A56 $\mathbin{\wedge}$ TWO INTERSECTING LOGICAL OR
→ 2A08 $\mathbin{\vee}$ two logical or operator

2A57 $\mathbin{\vee}$ SLOPING LARGE OR

2A58 $\mathbin{\wedge}$ SLOPING LARGE AND

2A59 $\mathbin{\wedge}$ LOGICAL OR OVERLAPPING LOGICAL AND

2A5A $\mathbin{\wedge}$ LOGICAL AND WITH MIDDLE STEM

2A5B $\mathbin{\vee}$ LOGICAL OR WITH MIDDLE STEM

2A5C $\mathbin{\wedge}$ LOGICAL AND WITH HORIZONTAL DASH

2A5D $\mathbin{\vee}$ LOGICAL OR WITH HORIZONTAL DASH

2A5E $\overline{\mathbin{\wedge}}$ LOGICAL AND WITH DOUBLE OVERBAR
→ 2306 $\overline{\mathbin{\wedge}}$ perspective

2A5F $\underline{\mathbin{\wedge}}$ LOGICAL AND WITH UNDERBAR

2A60 $\underline{\mathbin{\wedge}}$ LOGICAL AND WITH DOUBLE UNDERBAR
→ 2259 $\underline{\mathbin{\wedge}}$ estimates

2A61 $\mathbin{\vee}$ SMALL VEE WITH UNDERBAR
→ 225A $\mathbin{\vee}$ equiangular to

2A62 $\overline{\mathbin{\vee}}$ LOGICAL OR WITH DOUBLE OVERBAR

2A63 $\underline{\mathbin{\vee}}$ LOGICAL OR WITH DOUBLE UNDERBAR
→ 225A $\mathbin{\vee}$ equiangular to

Miscellaneous mathematical operators

2A64 \Leftarrow Z NOTATION DOMAIN ANTIRESTRICTION

2A65 \Rightarrow Z NOTATION RANGE ANTIRESTRICTION
→ 2332 \Rightarrow conical taper

Relational operators

2A66 \doteq EQUALS SIGN WITH DOT BELOW
→ 2250 \doteq approaches the limit

2A67 \doteq IDENTICAL WITH DOT ABOVE

2A68 \equiv TRIPLE HORIZONTAL BAR WITH DOUBLE VERTICAL STROKE
= identical and parallel to
→ 22D5 \equiv equal and parallel to
→ 29E5 \equiv identical to and slanted parallel

2A69 \equiv TRIPLE HORIZONTAL BAR WITH TRIPLE VERTICAL STROKE

2A6A \sim TILDE OPERATOR WITH DOT ABOVE

2A6B \sim TILDE OPERATOR WITH RISING DOTS
→ 223B \sim homothetic

2A6C \approx SIMILAR MINUS SIMILAR

2A6D \doteq CONGRUENT WITH DOT ABOVE
→ 2245 \doteq approximately equal to

2A6E \star EQUALS WITH ASTERISK
→ 225B \star star equals

2A6F \approx ALMOST EQUAL TO WITH CIRCUMFLEX ACCENT

2A70 \approx APPROXIMATELY EQUAL OR EQUAL TO

2A71 $\overline{\mathbin{\wedge}}$ EQUALS SIGN ABOVE PLUS SIGN

2A72	±	PLUS SIGN ABOVE EQUALS SIGN	2A8F	≍	LESS-THAN ABOVE SIMILAR ABOVE GREATER-THAN
2A73	≍	EQUALS SIGN ABOVE TILDE OPERATOR	2A90	≎	GREATER-THAN ABOVE SIMILAR ABOVE LESS-THAN
2A74	≐	DOUBLE COLON EQUAL ≈ 003A : 003A : 003D =	2A91	≏	LESS-THAN ABOVE GREATER-THAN ABOVE DOUBLE-LINE EQUAL
2A75	==	TWO CONSECUTIVE EQUALS SIGNS ≈ 003D = 003D =	2A92	≐	GREATER-THAN ABOVE LESS-THAN ABOVE DOUBLE-LINE EQUAL
2A76	===	THREE CONSECUTIVE EQUALS SIGNS ≈ 003D = 003D = 003D =	2A93	≑	LESS-THAN ABOVE SLANTED EQUAL ABOVE GREATER-THAN ABOVE SLANTED EQUAL
2A77	≐	EQUALS SIGN WITH TWO DOTS ABOVE AND TWO DOTS BELOW	2A94	≒	GREATER-THAN ABOVE SLANTED EQUAL ABOVE LESS-THAN ABOVE SLANTED EQUAL
2A78	≐	EQUIVALENT WITH FOUR DOTS ABOVE	2A95	≓	SLANTED EQUAL TO OR LESS-THAN → 22DC ≓ equal to or less-than
2A79	⋈	LESS-THAN WITH CIRCLE INSIDE	2A96	≔	SLANTED EQUAL TO OR GREATER-THAN → 22DD ≔ equal to or greater-than
2A7A	⋉	GREATER-THAN WITH CIRCLE INSIDE	2A97	≕	SLANTED EQUAL TO OR LESS-THAN WITH DOT INSIDE
2A7B	⋈	LESS-THAN WITH QUESTION MARK ABOVE	2A98	≖	SLANTED EQUAL TO OR GREATER-THAN WITH DOT INSIDE
2A7C	⋉	GREATER-THAN WITH QUESTION MARK ABOVE	2A99	≗	DOUBLE-LINE EQUAL TO OR LESS-THAN → 22DC ≗ equal to or less-than
2A7D	⋈	LESS-THAN OR SLANTED EQUAL TO → 2264 ≤ less-than or equal to	2A9A	≘	DOUBLE-LINE EQUAL TO OR GREATER-THAN → 22DD ≘ equal to or greater-than
2A7E	⋉	GREATER-THAN OR SLANTED EQUAL TO → 2265 ≥ greater-than or equal to	2A9B	≙	DOUBLE-LINE SLANTED EQUAL TO OR LESS-THAN
2A7F	⋈	LESS-THAN OR SLANTED EQUAL TO WITH DOT INSIDE	2A9C	≚	DOUBLE-LINE SLANTED EQUAL TO OR GREATER-THAN
2A80	⋉	GREATER-THAN OR SLANTED EQUAL TO WITH DOT INSIDE	2A9D	≛	SIMILAR OR LESS-THAN
2A81	⋈	LESS-THAN OR SLANTED EQUAL TO WITH DOT ABOVE	2A9E	≜	SIMILAR OR GREATER-THAN
2A82	⋉	GREATER-THAN OR SLANTED EQUAL TO WITH DOT ABOVE	2A9F	≝	SIMILAR ABOVE LESS-THAN ABOVE EQUALS SIGN
2A83	⋈	LESS-THAN OR SLANTED EQUAL TO WITH DOT ABOVE RIGHT	2AA0	≞	SIMILAR ABOVE GREATER-THAN ABOVE EQUALS SIGN
2A84	⋉	GREATER-THAN OR SLANTED EQUAL TO WITH DOT ABOVE LEFT	2AA1	≟	DOUBLE NESTED LESS-THAN = absolute continuity → 226A ≟ much less-than
2A85	≐	LESS-THAN OR APPROXIMATE	2AA2	≠	DOUBLE NESTED GREATER-THAN → 226B ≠ much greater-than
2A86	≐	GREATER-THAN OR APPROXIMATE	2AA3	≡	DOUBLE NESTED LESS-THAN WITH UNDERBAR
2A87	≐	LESS-THAN AND SINGLE-LINE NOT EQUAL TO → 2268 ≐ less-than but not equal to	2AA4	≢	GREATER-THAN OVERLAPPING LESS-THAN
2A88	≐	GREATER-THAN AND SINGLE-LINE NOT EQUAL TO → 2269 ≐ greater-than but not equal to	2AA5	≣	GREATER-THAN BESIDE LESS-THAN
2A89	≐	LESS-THAN AND NOT APPROXIMATE	2AA6	⋈	LESS-THAN CLOSED BY CURVE
2A8A	≐	GREATER-THAN AND NOT APPROXIMATE	2AA7	⋉	GREATER-THAN CLOSED BY CURVE
2A8B	≐	LESS-THAN ABOVE DOUBLE-LINE EQUAL ABOVE GREATER-THAN → 22DA ≐ less-than equal to or greater-than	2AA8	⋈	LESS-THAN CLOSED BY CURVE ABOVE SLANTED EQUAL
2A8C	≐	GREATER-THAN ABOVE DOUBLE-LINE EQUAL ABOVE LESS-THAN → 22DB ≐ greater-than equal to or less-than	2AA9	⋉	GREATER-THAN CLOSED BY CURVE ABOVE SLANTED EQUAL
2A8D	≐	LESS-THAN ABOVE SIMILAR OR EQUAL	2AAA	≦	SMALLER THAN
2A8E	≐	GREATER-THAN ABOVE SIMILAR OR EQUAL	2AAB	≧	LARGER THAN
			2AAC	≦	SMALLER THAN OR EQUAL TO

2AAD	≥	LARGER THAN OR EQUAL TO
2AAE	≐	EQUALS SIGN WITH BUMPY ABOVE → 224F ≐ difference between
2AAF	≤	PRECEDES ABOVE SINGLE-LINE EQUALS SIGN → 227C ≤ precedes or equal to
2AB0	≥	SUCCEEDS ABOVE SINGLE-LINE EQUALS SIGN → 227D ≥ succeeds or equal to
2AB1	≧	PRECEDES ABOVE SINGLE-LINE NOT EQUAL TO
2AB2	≧	SUCCEEDS ABOVE SINGLE-LINE NOT EQUAL TO
2AB3	≧	PRECEDES ABOVE EQUALS SIGN
2AB4	≧	SUCCEEDS ABOVE EQUALS SIGN
2AB5	≧	PRECEDES ABOVE NOT EQUAL TO
2AB6	≧	SUCCEEDS ABOVE NOT EQUAL TO
2AB7	≧	PRECEDES ABOVE ALMOST EQUAL TO
2AB8	≧	SUCCEEDS ABOVE ALMOST EQUAL TO
2AB9	≧	PRECEDES ABOVE NOT ALMOST EQUAL TO
2ABA	≧	SUCCEEDS ABOVE NOT ALMOST EQUAL TO
2ABB	≧	DOUBLE PRECEDES
2ABC	≧	DOUBLE SUCCEEDS

Subset and superset relations

2ABD	⊆	SUBSET WITH DOT
2ABE	⊇	SUPERSET WITH DOT
2ABF	⊆	SUBSET WITH PLUS SIGN BELOW
2AC0	⊇	SUPERSET WITH PLUS SIGN BELOW
2AC1	⊆	SUBSET WITH MULTIPLICATION SIGN BELOW
2AC2	⊇	SUPERSET WITH MULTIPLICATION SIGN BELOW
2AC3	⊆	SUBSET OF OR EQUAL TO WITH DOT ABOVE
2AC4	⊆	SUPERSET OF OR EQUAL TO WITH DOT ABOVE
2AC5	⊆	SUBSET OF ABOVE EQUALS SIGN
2AC6	⊆	SUPERSET OF ABOVE EQUALS SIGN
2AC7	⊆	SUBSET OF ABOVE TILDE OPERATOR
2AC8	⊆	SUPERSET OF ABOVE TILDE OPERATOR
2AC9	⊆	SUBSET OF ABOVE ALMOST EQUAL TO
2ACA	⊆	SUPERSET OF ABOVE ALMOST EQUAL TO
2ACB	⊆	SUBSET OF ABOVE NOT EQUAL TO
2ACC	⊆	SUPERSET OF ABOVE NOT EQUAL TO
2ACD	⊆	SQUARE LEFT OPEN BOX OPERATOR
2ACE	⊆	SQUARE RIGHT OPEN BOX OPERATOR
2ACF	⊆	CLOSED SUBSET → 2282 ⊆ subset of

2AD0	⊆	CLOSED SUPERSET → 2283 ⊆ superset of
2AD1	⊆	CLOSED SUBSET OR EQUAL TO
2AD2	⊆	CLOSED SUPERSET OR EQUAL TO
2AD3	⊆	SUBSET ABOVE SUPERSET
2AD4	⊆	SUPERSET ABOVE SUBSET
2AD5	⊆	SUBSET ABOVE SUBSET
2AD6	⊆	SUPERSET ABOVE SUPERSET
2AD7	⊆	SUPERSET BESIDE SUBSET
2AD8	⊆	SUPERSET BESIDE AND JOINED BY DASH WITH SUBSET

Forks

2AD9	⊆	ELEMENT OF OPENING DOWNWARDS → 2208 ∈ element of → 27D2 ⊆ element of opening upwards
2ADA	⊆	PITCHFORK WITH TEE TOP → 22D4 ⊆ pitchfork
2ADB	⊆	TRANSVERSAL INTERSECTION → 22D4 ⊆ pitchfork
2ADC	⊆	FORKING = not independent • an equational logic symbol, not a computing science symbol • non-independence (original concept) is related to forking ≐ 2ADD ⊆ 0338 ⊆
2ADD	⊆	NONFORKING = independent • an equational logic symbol, not a computing science symbol • independence (original concept) is related to non-forking

Tacks and turnstiles

2ADE	⊆	SHORT LEFT TACK → 22A3 ⊆ left tack
2ADF	⊆	SHORT DOWN TACK → 22A4 ⊆ down tack
2AE0	⊆	SHORT UP TACK → 22A5 ⊆ up tack
2AE1	⊆	PERPENDICULAR WITH S
2AE2	⊆	VERTICAL BAR TRIPLE RIGHT TURNSTILE = ordinarily satisfies
2AE3	⊆	DOUBLE VERTICAL BAR LEFT TURNSTILE → 22A9 ⊆ forces
2AE4	⊆	VERTICAL BAR DOUBLE LEFT TURNSTILE → 22A8 ⊆ true
2AE5	⊆	DOUBLE VERTICAL BAR DOUBLE LEFT TURNSTILE
2AE6	⊆	LONG DASH FROM LEFT MEMBER OF DOUBLE VERTICAL → 22A9 ⊆ forces

2AE7 ⇐ SHORT DOWN TACK WITH OVERBAR
 → 22A4 ⌞ down tack
 → 2351 ⌞ apl functional symbol up tack overbar

2AE8 ⇐ SHORT UP TACK WITH UNDERBAR
 → 22A5 ⌚ up tack
 → 234A ⌚ apl functional symbol down tack underbar

2AE9 ⇐ SHORT UP TACK ABOVE SHORT DOWN TACK

2AEA ⌞ DOUBLE DOWN TACK

2AEB ⌚ DOUBLE UP TACK
 = independence
 • probability theory

2AEC ⇐ DOUBLE STROKE NOT SIGN
 → 00AC ¬ not sign

2AED ⇐ REVERSED DOUBLE STROKE NOT SIGN
 → 2310 ⌞ reversed not sign

2AFB ≡ TRIPLE SOLIDUS BINARY RELATION
 → 2AF4 ≡ triple vertical bar binary relation

Operators

2AFC ≡ LARGE TRIPLE VERTICAL BAR OPERATOR
 • often n-ary
 → 2AF4 ≡ triple vertical bar binary relation
 → 2980 ≡ triple vertical bar delimiter

2AFD ≡ DOUBLE SOLIDUS OPERATOR
 → 2225 ≡ parallel to

2AFE ≡ WHITE VERTICAL BAR
 = Dijkstra choice

2AFF ≡ N-ARY WHITE VERTICAL BAR
 = n-ary Dijkstra choice

Vertical line operators

2AEE † DOES NOT DIVIDE WITH REVERSED NEGATION SLASH
 → 2224 † does not divide

2AEF † VERTICAL LINE WITH CIRCLE ABOVE

2AF0 † VERTICAL LINE WITH CIRCLE BELOW

2AF1 † DOWN TACK WITH CIRCLE BELOW
 = necessarily satisfies
 → 27DF † up tack with circle above

2AF2 † PARALLEL WITH HORIZONTAL STROKE
 → 2226 † not parallel to

2AF3 † PARALLEL WITH TILDE OPERATOR

2AF4 ≡ TRIPLE VERTICAL BAR BINARY RELATION
 = interleave
 → 2980 ≡ triple vertical bar delimiter

2AF5 ≡ TRIPLE VERTICAL BAR WITH HORIZONTAL STROKE

Miscellaneous mathematical operator

2AF6 ∴ TRIPLE COLON OPERATOR
 • logic
 → 22EE ∴ vertical ellipsis

Relations

2AF7 ≡ TRIPLE NESTED LESS-THAN
 → 22D8 ≡ very much less-than

2AF8 ≡ TRIPLE NESTED GREATER-THAN
 → 22D9 ≡ very much greater-than

2AF9 ≡ DOUBLE-LINE SLANTED LESS-THAN OR EQUAL TO
 → 2266 ≡ less-than over equal to

2AFA ≡ DOUBLE-LINE SLANTED GREATER-THAN OR EQUAL TO
 → 2267 ≡ greater-than over equal to