

## Miscellaneous Mathematical Symbols-A

**Range: 27C0–27EF**

This file contains an excerpt from the character code tables and list of character names for *The Unicode Standard, Version 5.2*.

This file may be changed at any time without notice to reflect errata or other updates to the Unicode Standard. 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-5.2/> for charts showing only the characters added in Unicode 5.2. See <http://www.unicode.org/Public/5.2.0/charts/> for a complete archived file of character code charts for Unicode 5.2.

### Disclaimer

These charts are provided as the online reference to the character contents of the Unicode Standard, Version 5.2 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 5.2*, online at <http://www.unicode.org/versions/Unicode5.2.0/>, as well as Unicode Standard Annexes #9, #11, #14, #15, #24, #29, #31, #34, #38, #41, #42, and #44, 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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See <http://www.unicode.org/charts/fonts.html> for a list.

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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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	27C	27D	27E
0	 27C0	 27D0	 27E0
1	 27C1	 27D1	 27E1
2	 27C2	 27D2	 27E2
3	 27C3	 27D3	 27E3
4	 27C4	 27D4	 27E4
5	 27C5	 27D5	 27E5
6	 27C6	 27D6	 27E6
7	 27C7	 27D7	 27E7
8	 27C8	 27D8	 27E8
9	 27C9	 27D9	 27E9
A	 27CA	 27DA	 27EA
B		 27DB	 27EB
C	 27CC	 27DC	 27EC
D		 27DD	 27ED
E		 27DE	 27EE
F		 27DF	 27EF

**Miscellaneous symbols**

27C0	∠	THREE DIMENSIONAL ANGLE
		• used by Euclid
27C1	△	WHITE TRIANGLE CONTAINING SMALL WHITE TRIANGLE
		• used by Euclid
27C2	⊥	PERPENDICULAR
		= orthogonal to
		• relation, typeset with additional spacing
		→ 22A5 ⊥ up tack
27C3	⊆	OPEN SUBSET
27C4	⊇	OPEN SUPERSET
27C5	⌈	LEFT S-SHAPED BAG DELIMITER
27C6	⌋	RIGHT S-SHAPED BAG DELIMITER
27C7	∨	OR WITH DOT INSIDE
27C8	⊂	REVERSE SOLIDUS PRECEDING SUBSET
27C9	⊃	SUPERSET PRECEDING SOLIDUS

**Vertical line operator**

27CA	‡	VERTICAL BAR WITH HORIZONTAL STROKE
		→ 2AF2 ‡ parallel with horizontal stroke
		→ 2AF5 ‡ triple vertical bar with horizontal stroke

**Division operator**

27CC	⌋	LONG DIVISION
		• graphically extends over the dividend
		→ 00F7 ÷ division sign
		→ 2215 / division slash
		→ 221A √ square root

**Miscellaneous symbol**

27D0	◇	WHITE DIAMOND WITH CENTRED DOT
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**Operators**

27D1	∧	AND WITH DOT
		→ 2227 ∧ logical and
		→ 2A40 ∩ intersection with dot
27D2	⤴	ELEMENT OF OPENING UPWARDS
		→ 2AD9 ⤴ element of opening downwards
27D3	⤵	LOWER RIGHT CORNER WITH DOT
		= pullback
		→ 230B J right floor
27D4	⤶	UPPER LEFT CORNER WITH DOT
		= pushout
		→ 2308 Γ left ceiling

**Database theory operators**

27D5	⋈	LEFT OUTER JOIN
27D6	⋉	RIGHT OUTER JOIN
27D7	⋊	FULL OUTER JOIN
		→ 2A1D ⋊ join

**Tacks and turnstiles**

27D8	⊥	LARGE UP TACK
		→ 22A5 ⊥ up tack
27D9	⤵	LARGE DOWN TACK
		→ 22A4 ⤵ down tack
27DA	≡	LEFT AND RIGHT DOUBLE TURNSTILE
		→ 22A8 ≡ true
		→ 2AE4 ≡ vertical bar double left turnstile
27DB	≡	LEFT AND RIGHT TACK
		→ 22A2 ≡ right tack
27DC	↪	LEFT MULTIMAP
		→ 22B8 ↪ multimap

27DD	↩	LONG RIGHT TACK
		→ 22A2 ↩ right tack
27DE	↪	LONG LEFT TACK
		→ 22A3 ↪ left tack
27DF	⤴	UP TACK WITH CIRCLE ABOVE
		= radial component
		→ 2AF1 ⤴ down tack with circle below

**Modal logic operators**

27E0	◇	LOZENGE DIVIDED BY HORIZONTAL RULE
		• used as form of possibility in modal logic
		→ 25CA ◇ lozenge
27E1	◇	WHITE CONCAVE-SIDED DIAMOND
		= never (modal operator)
27E2	◊	WHITE CONCAVE-SIDED DIAMOND WITH LEFTWARDS TICK
		= was never (modal operator)
27E3	◊	WHITE CONCAVE-SIDED DIAMOND WITH RIGHTWARDS TICK
		= will never be (modal operator)
27E4	◻	WHITE SQUARE WITH LEFTWARDS TICK
		= was always (modal operator)
		→ 25A1 ◻ white square
27E5	◻	WHITE SQUARE WITH RIGHTWARDS TICK
		= will always be (modal operator)

**Mathematical brackets**

27E6	⌈	MATHEMATICAL LEFT WHITE SQUARE BRACKET
		= z notation left bag bracket
		→ 301A ⌈ left white square bracket
27E7	⌋	MATHEMATICAL RIGHT WHITE SQUARE BRACKET
		= z notation right bag bracket
		→ 301B ⌋ right white square bracket
27E8	⌠	MATHEMATICAL LEFT ANGLE BRACKET
		= bra
		= z notation left sequence bracket
		→ 2329 ⌠ left-pointing angle bracket
		→ 3008 ⌠ left angle bracket
27E9	⌡	MATHEMATICAL RIGHT ANGLE BRACKET
		= ket
		= z notation right sequence bracket
		→ 232A ⌡ right-pointing angle bracket
		→ 3009 ⌡ right angle bracket
27EA	⌵	MATHEMATICAL LEFT DOUBLE ANGLE BRACKET
		= z notation left chevron bracket
		→ 300A ⌵ left double angle bracket
27EB	⌶	MATHEMATICAL RIGHT DOUBLE ANGLE BRACKET
		= z notation right chevron bracket
		→ 300B ⌶ right double angle bracket
27EC	⌷	MATHEMATICAL LEFT WHITE TORTOISE SHELL BRACKET
		→ 2997 ⌷ left black tortoise shell bracket
		→ 3018 ⌷ left white tortoise shell bracket
27ED	⌸	MATHEMATICAL RIGHT WHITE TORTOISE SHELL BRACKET
		→ 2998 ⌸ right black tortoise shell bracket
		→ 3019 ⌸ right white tortoise shell bracket
27EE	⌹	MATHEMATICAL LEFT FLATTENED PARENTHESIS
		= lgroup

27EF ) MATHEMATICAL RIGHT FLATTENED  
PARENTHESIS  
= rgroup