

## LaTeX math mode commands with approximately matching Unicode character

Used packages: amssymb, amsmath, bbold, isomath, mathabx, mathdots, stmaryrd, wasysym.

Due to (8-bit) TeX's limitation to 16 math alphabets and conflicts between some packages, not all symbols can be accessed simultaneously. [na] in the math symbol column indicates that the symbol is not available with the currently selected packages.

| Command            | No.   | Text | Math | Category  | Requirements | Comments   |
|--------------------|-------|------|------|-----------|--------------|--|
| !!                 | 0203C | !!   | !!   | mathord   |              | DOUBLE EXCLAMATION MARK  |
| :-                 | 02239 | :-   | — :  | mathrel   |              | = \eqcolon (txfonts -mathabx), EXCESS  |
| ./.                | 02052 | ⋋    | ⋌    | mathord   |              | COMMERCIAL MINUS SIGN  |
| /                  | 02044 | /    | /    | mathbin   |              | FRACTION SLASH   |
| ::                 | 02237 | ::   | ::   | mathrel   |              | = \Proportion (wrisym), two colons   |
| ::=                | 02A74 | ⋈    | ⋈    | mathrel   |              | = \Coloneqq (txfonts), x \Coloneq (txfonts), DOUBLE COLON EQUAL                      |
| :=                 | 02254 | ⋈    | ⋈    | mathrel   |              | = \coloneq (mathabx -txfonts), = \coloneqq (txfonts), = \SetDelayed (wrisym), equals |
| =:                 | 02255 | ⋈    | ⋈    | mathrel   |              | = \eqcolon (mathabx -txfonts), = \eqqcolon (txfonts), equals, colon                  |
| ==                 | 02A75 | ⋈    | ⋈    | mathrel   |              | = \Equal (wrisym), TWO CONSECUTIVE EQUALS SIGNS                                      |
| ===                | 02A76 | ⋈    | ⋈    | mathrel   |              | = \Same (wrisym), THREE CONSECUTIVE EQUALS SIGNS                                     |
| ??                 | 02047 | ??   | ??   | mathord   |              | DOUBLE QUESTION MARK   |
| \#                 | 0266F | ♯    | [na] | mathord   | oz           | = \sharp, musical sharp, z notation infix bag count                                  |
| \AC                | 023E6 | ⋈    | ⋈    | mathord   | wasysym      | AC CURRENT   |
| \APLcirc{\APLbox}  | 0233C | ⊠    | ⊠    | mathord   | wasysym      | APL FUNCTIONAL SYMBOL QUAD CIRCLE  |
| \APLcirc{\Circle}  | 0233E | ⊙    | ⊙    | mathord   | wasysym      | APL FUNCTIONAL SYMBOL CIRCLE JOT   |
| \APLnot{\APLdown}  | 0236B | ⋈    | ⋈    | mathord   | wasysym      | APL FUNCTIONAL SYMBOL DEL TILDE  |
| \APLvert{\APLdown} | 02352 | ⋈    | ⋈    | mathord   | wasysym      | APL FUNCTIONAL SYMBOL DEL STILE  |
| \APLvert{\APLup}   | 0234B | ⋈    | ⋈    | mathord   | wasysym      | APL FUNCTIONAL SYMBOL DELTA STILE  |
| \APLvert{\Circle}  | 0233D | ⊙    | ⊙    | mathbin   | wasysym      | x \obar (stmaryrd), APL FUNCTIONAL SYMBOL CIRCLE STILE, circle with vertical bar     |
| \Game              | 02141 | ⊖    | ⊖    | mathord   | amssymb      | TURNED SANS-SERIF CAPITAL G (amssymb has mirrored G)                                 |
| \ast               | 0002A | *    | *    | mathord   |              | = *, (high) ASTERISK, star   |
| \ast               | 0204E | *    | *    | mathbin   |              | lowest, LOW ASTERISK   |
| \barwedge          | 02305 | ⋈    | ⋈    | mathbin   | amssymb      | PROJECTIVE (bar over small wedge) not nand   |
| \binampersand      | 00026 | &    | &    | mathord   | stmaryrd     | = \&   |
| \bindnasrepma      | 0214B | ⋈    | ⋈    | mathbin   | stmaryrd     | = \invamp (txfonts), TURNED AMPERSAND  |
| \blacklozenge      | 02B27 | ◆    | ◆    | mathord   | amssymb      | BLACK MEDIUM LOZENGE   |
| \blacksquare       | 0220E | ■    | ■    | mathord   | amssymb      | END OF PROOF   |
| \bullet            | 02022 | •    | •    | mathbin   |              | b: round BULLET, filled  |
| \cdot              | 000B7 | ·    | ·    | mathbin   |              | x \centerdot, b: MIDDLE DOT  |
| \centerdot         | 02B1D | ·    | ■    | mathord   | amssymb      | t \Squaredot (marvosym), BLACK VERY SMALL SQUARE                                     |
| \circledcirc       | 025CE | ⊙    | ⊙    | mathord   | amssymb      | BULLSEYE   |
| \doublebarwedge    | 02306 | ⋈    | ⋈    | mathbin   | amssymb      | PERSPECTIVE (double bar over small wedge)  |
| \hbar              | 0210F | ℏ    | ℏ    | mathalpha |              | = \hslash (amssymb fourier arevmath), =\HBar (wrisym), Planck's h over 2pi           |

| Command                            | No.   | Text                 | Math                 | Category   | Requirements       | Comments   |
|------------------------------------|-------|----------------------|----------------------|------------|--------------------|--|
| <code>\hspace{Opt}</code>          | 0200B |                      |                      |            |                    | zwspace  |
| <code>\langle</code>               | 03008 | ⟨                    | <                    | mathopen   |                    | LEFT ANGLE BRACKET (deprecated for math use)   |
| <code>\llbracket</code>            | 0301A | ⌈                    | ⌈                    | mathopen   | stmaryrd           | LEFT WHITE SQUARE BRACKET (deprecated for math use)  |
| <code>\lozenge</code>              | 02B28 | ◇                    | ◇                    | mathord    | amssymb            | WHITE MEDIUM LOZENGE   |
| <code>\mathring{\mathrm{A}}</code> | 0212B | Å                    | Å                    | mathalpha  |                    | = \Angstroem (wrisym), Ångström capital A with ring  |
| <code>\mathrm{\Delta}</code>       | 02206 | Δ                    | Δ                    | mathord    |                    | laplacian (Delta; nabla square)  |
| <code>\mathrm{\Omega}</code>       | 02126 | Ω                    | Ω                    | mathalpha  |                    | = \tcohm (mathcomp), ohm (deprecated in math, use greek letter)                                  |
| <code>\mathrm{\Upsilon}</code>     | 003D2 | Υ                    | Υ                    | mathalpha  |                    | GREEK UPSILON WITH HOOK SYMBOL   |
| <code>\mathrm{\mu}</code>          | 000B5 | μ                    | [na]                 | mathalpha  | omlmathrm          | = \Micro (wrisym), = \tcmu (mathcomp), t \textmu (textcomp), # \muup (kpfonts mathdesign), MICRO |
| <code>\mathsf{E}</code>            | 022FF | E                    | E                    | mathrel    |                    | Z NOTATION BAG MEMBERSHIP  |
| <code>\muup</code>                 | 000B5 | μ                    | [na]                 | mathalpha  | kpfonts mathdesign | = \Micro (wrisym), = \tcmu (mathcomp), t \textmu (textcomp), # \mathrm{\mu} (omlmathrm), MICRO   |
| <code>\overleftarrow</code>        | 020D6 | $\overleftarrow{x}$  | $\overleftarrow{x}$  | mathaccent |                    | = \LVec (wrisym), COMBINING LEFT ARROW ABOVE   |
| <code>\overrightarrow</code>       | 020D7 | $\overrightarrow{x}$ | $\overrightarrow{x}$ | mathaccent |                    | = \vec (-wrisym), = \Vec (wrisym), COMBINING RIGHT ARROW ABOVE                                   |
| <code>\rangle</code>               | 03009 | ⟩                    | >                    | mathclose  |                    | RIGHT ANGLE BRACKET (deprecated for math use)  |
| <code>\rrbracket</code>            | 0301B | ⌋                    | ⌋                    | mathclose  | stmaryrd           | RIGHT WHITE SQUARE BRACKET (deprecated for math use)   |
| <code>\sampi</code>                | 003E1 | ϣ                    | [na]                 | mathalpha  | wrisym             | = \sampi (arevmath), GREEK SMALL LETTER SAMPI  |
| <code>\sim</code>                  | 0007E | ~                    | ~                    | mathord    |                    | = \spilde (amsxtra), TILDE   |
| <code>\slash</code>                | 0002F | /                    | /                    | mathord    |                    | = /, SOLIDUS   |
| <code>\smallfrown</code>           | 02322 | ⋕                    | ⋕                    | mathrel    |                    | = \frown, FROWN (down curve)   |
| <code>\smallsmile</code>           | 02323 | ⋖                    | ⋖                    | mathrel    |                    | = \smile, SMILE (up curve)   |
| <code>\times</code>                | 02A2F | ×                    | ×                    | mathbin    |                    | VECTOR OR CROSS PRODUCT  |
| <code>\triangledown</code>         | 025BF | ▽                    | ▽                    | mathbin    | amssymb            | = \smalltriangledown (mathabx), WHITE DOWN-POINTING SMALL TRIANGLE                               |
| <code>\triangleleft</code>         | 025C3 | ◁                    | ◁                    | mathbin    |                    | = \smalltriangleleft (mathabx), x \triangleleft (mathabx), left triangle, open                   |
| <code>\triangleleft</code>         | 025C5 | ◁                    | ◁                    | mathord    | mathabx            | WHITE LEFT-POINTING POINTER  |
| <code>\triangleright</code>        | 025B9 | ▷                    | ▷                    | mathbin    |                    | = \smalltriangleright (mathabx), x \triangleright (mathabx), right triangle, open                |
| <code>\triangleright</code>        | 025BB | ▷                    | ▷                    | mathord    | mathabx            | WHITE RIGHT-POINTING POINTER   |
| <code>\varnothing</code>           | 02300 | ∅                    | ∅                    | mathord    | amssymb            | = \diameter (mathabx), DIAMETER SIGN   |
| <code>\varparallel</code>          | 02AFD | //                   | [na]                 | mathbin    | txfonts            | = \sslash (stmaryrd), DOUBLE SOLIDUS OPERATOR  |
| <code>\varpropto</code>            | 0221D | ∝                    | ∝                    | mathrel    | amssymb            | = \propto, is PROPORTIONAL TO  |
| <code>\vartriangle</code>          | 025B3 | △                    | △                    | mathbin    | amssymb            | = \bigtriangleup (-stmaryrd), = \triangle (amsfonts), big up triangle, open                      |
| <code>\vartriangle</code>          | 025B5 | △                    | △                    | mathbin    | amssymb            | = \smalltriangleup (mathabx), small up triangle, open  |
| <code>\vdash</code>                | 022A6 | ⊢                    | ⊢                    | mathrel    |                    | ASSERTION (vertical, short dash)   |
| <code>\widehat</code>              | 00302 | ̂                    | ̂                    | mathaccent | amssymb            | = \hat, circumflex accent  |
| <code>\widetilde</code>            | 00303 | ̃                    | ̃                    | mathaccent |                    | = \tilde, fourier, tilde   |
| <code>h</code>                     | 0210E | h                    | h                    | mathord    |                    | Planck constant  |