

# Harold's Greek & Math Symbols

## Cheat Sheet

28 January 2026

### Greek Alphabet

| UC        | LC                      | Name    | Physics Variables                                                                        | ALT Codes           | LaTeX                                           |
|-----------|-------------------------|---------|------------------------------------------------------------------------------------------|---------------------|-------------------------------------------------|
| A         |                         | Alpha   | Angular acceleration $A$ (mechanics)<br>Finite increment notation $A$                    | ALT+0913            | $\backslash Alpha$                              |
|           | $\alpha$                |         | Coefficient of thermal expansion $\alpha$<br>Fine-structure constant $\alpha$ (non-mech) | ALT+224<br>ALT+0945 | $\backslash alpha$                              |
| B         |                         | Beta    |                                                                                          | ALT+0914            | $\backslash Beta$                               |
|           | $\beta$                 |         | Velocity ratio $v/c$ $\beta$ (non-mech)<br>Beta radiation $\beta$                        | ALT+0946            | $\backslash beta$                               |
| $\Gamma$  |                         | Gamma   |                                                                                          | ALT+0915            | $\backslash Gamma$                              |
|           | $\gamma$                |         | Lorentz factor $\gamma$ (relativistic kinematics)<br>Shear rate (rheology) $\gamma$      | ALT+226<br>ALT+0947 | $\backslash gamma$                              |
| $\Delta$  |                         | Delta   | Finite change ( $\Delta x$ , $\Delta v$ )<br>Laplacian (older usage) $\Delta$            | ALT+0916            | $\backslash Delta$                              |
|           | $\delta$ , $\delta$     |         | Infinitesimal change $\delta$<br>Small deflection/offset $\delta$                        | ALT+235<br>ALT+0948 | $\backslash delta$                              |
| E         |                         | Epsilon |                                                                                          | ALT+0917            | $\backslash Epsilon$                            |
|           | $\epsilon$ , $\epsilon$ |         | Normal strain $\epsilon$                                                                 | ALT+238<br>ALT+0949 | $\backslash epsilon$<br>$\backslash varepsilon$ |
| Z         |                         | Zeta    |                                                                                          | ALT+0918            | $\backslash Zeta$                               |
|           | $\zeta$                 |         | Damping ratio $\zeta$                                                                    | ALT+0950            | $\backslash zeta$                               |
| H         |                         | Eta     |                                                                                          | ALT+0919            | $\backslash Eta$                                |
|           | $\eta$                  |         | Efficiency $\eta$<br>Dynamic viscosity $\eta$                                            | ALT+0951            | $\backslash eta$                                |
| $\Theta$  |                         | Theta   | Heaviside step $\Theta$ (signals)                                                        | ALT+233<br>ALT+0920 | $\backslash Theta$                              |
|           | $\theta$ , $\vartheta$  |         | Angular position $\theta$<br>Plane angle $\vartheta$                                     | ALT+0952            | $\backslash theta$<br>$\backslash vartheta$     |
| I         |                         | Iota    |                                                                                          | ALT+0921            | $\backslash Iota$                               |
|           | $\iota$                 |         | Very small quantity $\iota$ (informal)                                                   | ALT+0953            | $\backslash iota$                               |
| K         |                         | Kappa   |                                                                                          | ALT+0922            | $\backslash Kappa$                              |
|           | $\kappa$ , $\varkappa$  |         | Curvature $\kappa$                                                                       | ALT+0954            | $\backslash kappa$<br>$\backslash varkappa$     |
| $\Lambda$ |                         | Lambda  |                                                                                          | ALT+0923            | $\backslash Lambda$                             |
|           | $\lambda$               |         | Wavelength $\lambda$<br>Eigenvalue $\lambda$                                             | ALT+0955            | $\backslash lambda$                             |

|            |                     |         |                                                                    |                     |                     |
|------------|---------------------|---------|--------------------------------------------------------------------|---------------------|---------------------|
| M          |                     | Mu      |                                                                    | ALT+0924            | \Mu                 |
|            | $\mu$               |         | Coefficient of friction $\mu$<br>Reduced mass $\mu$                | ALT+230<br>ALT+0956 | \mu                 |
| N          |                     | Nu      |                                                                    | ALT+0925            | \Nu                 |
|            | $\nu$               |         | Kinematic viscosity $\nu$                                          | ALT+0957            | \nu                 |
| $\Xi$      |                     | Xi      |                                                                    | ALT+0926            | \Xi                 |
|            | $\xi$               |         | Modal/beam coordinate $\xi$ (FEM)                                  | ALT+0958            | \xi                 |
| O          |                     | Omicron |                                                                    | ALT+0927            | o                   |
|            | $o$                 |         |                                                                    | ALT+0959            | o                   |
| $\Pi$      |                     | Pi      | Product operator $\Pi$                                             | ALT+0928            | \Pi                 |
|            | $\pi, \varpi$       |         | Circle constant $\pi$                                              | ALT+227<br>ALT+0960 | \pi<br>\varpi       |
| P          |                     | Rho     |                                                                    | ALT+0929            | \Rho                |
|            | $\rho, \varrho$     |         | Mass density $\rho$                                                | ALT+0961            | \rho<br>\varrho     |
| $\Sigma$   |                     | Sigma   | Summation operator $\Sigma$                                        | ALT+228<br>ALT+0931 | \Sigma              |
|            | $\sigma, \varsigma$ |         | Normal stress $\sigma$                                             | ALT+229<br>ALT+0963 | \sigma<br>\varsigma |
| T          |                     | Tau     |                                                                    | ALT+0932            | \Tau                |
|            | $\tau$              |         | Torque/Shear stress $\tau$<br>Time constant $\tau$                 | ALT+231<br>ALT+0964 | \tau                |
| $\Upsilon$ |                     | Upsilon | Upsilon particle $\Upsilon$ (HEP)                                  | ALT+0933            | \Upsilon            |
|            | $u$                 |         | Specific volume $u$ (thermo/fluids)                                | ALT+0965            | u                   |
| $\Phi$     |                     | Phi     | Magnetic flux $\Phi$<br>Work function $\Phi$                       | ALT+232<br>ALT+0934 | \Phi                |
|            | $\phi, \varphi$     |         | Azimuth angle $\phi$<br>Rotation angle $\varphi$                   | ALT+237<br>ALT+0966 | \phi<br>\varphi     |
| $\chi$     |                     | Chi     |                                                                    | ALT+0935            | \Chi                |
|            | $\chi$              |         | Material susceptibility $\chi$<br>Chi-squared $\chi^2$             | ALT+0967            | \chi                |
| $\Psi$     |                     | Psi     |                                                                    | ALT+0936            | \Psi                |
|            | $\psi$              |         | Stream function $\psi$<br>Yaw/attitude angle $\psi$                | ALT+0968            | \psi                |
| $\Omega$   |                     | Omega   | Solid angle $\Omega$<br>Electrical resistance unit symbol $\Omega$ | ALT+234<br>ALT+0937 | \Omega              |
|            | $\omega$            |         | Angular velocity/frequency $\omega$                                | ALT+0969            | \omega              |

## Basic Math Symbols

| Math Symbol | Name                                      | ALT Codes                        | LaTeX                 |
|-------------|-------------------------------------------|----------------------------------|-----------------------|
| ×           | Multiplication<br>Cross product           | ALT+158<br>ALT+0215              | \times                |
| ÷           | Division                                  | ALT+246<br>ALT+0247              | \div                  |
| •           | Bullet                                    | ALT+8226<br>ALT+8729             | \bullet               |
| ◦           | Hollow dot                                | ALT+9702                         | \circ                 |
| ·           | Middle dot<br>Dot operator<br>Dot product | ALT+0183<br>ALT+8729<br>ALT+8901 | \cdot                 |
| °           | Degree                                    | ALT+248<br>ALT+0176              | ^\circ                |
| ±           | Plus-minus                                | ALT+241<br>ALT+0177              | \pm                   |
| ∓           | Minus-plus                                | ALT+8723                         | \mp                   |
| ≤           | Less-or-equal                             | ALT+8804                         | \leq (or \le)         |
| ≥           | Greater-or-equal                          | ALT+8805                         | \geq (or \ge)         |
| ≠           | Not less-or-equal                         | ALT+8816                         | \nleq                 |
| ≧           | Not greater-or-equal                      | ALT+8817                         | \ngeq                 |
| <           | Less than                                 | ALT+60                           | <                     |
| <<          | Much less than                            | ALT+8810                         | \ll                   |
| >           | Greater than                              | ALT+62                           | >                     |
| >>          | Much greater than                         | ALT+8811                         | \gg                   |
| ≠           | Not equal to                              | ALT+8800                         | \neq                  |
| ≈           | Approximately equal                       | ALT+8776                         | \approx               |
| ≉           | Not approximately equal                   | ALT+8777                         | \not\approx           |
| ≅           | Congruent to                              | ALT+8773                         | \cong                 |
| ≄           | Not congruent to                          | ALT+8775                         | \ncong                |
| ≡           | Identically equal to<br>Definition symbol | ALT+8801                         | \equiv                |
| ≢           | Not identically equal to                  | ALT+8802                         | \not\equiv<br>\nequiv |
| ∝           | Proportional to                           | ALT+8733                         | \propto               |
| <           | Less than                                 | ALT+60                           | <                     |

|                   |                            |                     |                              |
|-------------------|----------------------------|---------------------|------------------------------|
| $\ll$             | Much less than             | ALT+8810            | <code>\ll</code>             |
| $>$               | Greater than               | ALT+62              | <code>&gt;</code>            |
| $\gg$             | Much greater than          | ALT+8811            | <code>\gg</code>             |
| $\leftarrow$      | Left arrow                 | ALT+8592            | <code>\leftarrow</code>      |
| $\rightarrow$     | Right arrow                | ALT+8594            | <code>\rightarrow</code>     |
| $\uparrow$        | Up arrow                   | ALT+8593            | <code>\uparrow</code>        |
| $\downarrow$      | Down arrow                 | ALT+8595            | <code>\downarrow</code>      |
| $\leftrightarrow$ | Left-right arrow           | ALT+8596            | <code>\leftrightarrow</code> |
| $\updownarrow$    | Up-down arrow              | ALT+8597            | <code>\updownarrow</code>    |
| $\emptyset$       | Empty set                  | ALT+157<br>ALT+0216 | <code>\emptyset</code>       |
| $\cap$            | Intersection               | ALT+8745            | <code>\cap</code>            |
| $\cup$            | Union                      | ALT+8746            | <code>\cup</code>            |
| $\wedge$          | Logic and                  | ALT+9743            | <code>\wedge</code>          |
| $\vee$            | Logic or                   | ALT+8744            | <code>\vee</code>            |
| $\subseteq$       | Subset                     | ALT+8838            | <code>\subseteq</code>       |
| $\subset$         | Proper subset              | ALT+8834            | <code>\subset</code>         |
| $\supseteq$       | Superset                   | ALT+8839            | <code>\supseteq</code>       |
| $\supset$         | Proper superset            | ALT+8835            | <code>\supset</code>         |
| $\not\subseteq$   | Not a subset               | ALT+8840            | <code>\not\subseteq</code>   |
| $\subsetneq$      | Not a proper subset        | ALT+8836            | <code>\subsetneq</code>      |
| $\not\supseteq$   | Not a superset             | ALT+8841            | <code>\not\supseteq</code>   |
| $\not\supset$     | Not a proper superset      | ALT+8837            | <code>\not\supset</code>     |
| $\in$             | An element of              | ALT+8712            | <code>\in</code>             |
| $\notin$          | Not an element of          | ALT+8713            | <code>\notin</code>          |
| $\odot$           | Circled dot<br>Dot product | ALT+8857            | <code>\odot</code>           |
| $\otimes$         | Tensor<br>Vector cross     | ALT+8855            | <code>\otimes</code>         |
| $\oplus$          | Circle plus                | ALT+9953            | <code>\oplus</code>          |
| $\int$            | Integral                   | ALT+8747            | <code>\int</code>            |
| $\int$            | Top integral               | ALT+8992            | <code>\int</code>            |
| $\int$            | Bottom integral            | ALT+8993            | <code>\int</code>            |
| $\partial$        | Partial derivative         | ALT+8706            | <code>\partial</code>        |

|                           |                         |                                        |                                    |
|---------------------------|-------------------------|----------------------------------------|------------------------------------|
| $\nabla$                  | Nabla<br>Gradient       | ALT+8711                               | <code>\nabla</code>                |
| $\measuredangle$          | Measured angle          | ALT+8737                               | <code>\measuredangle</code>        |
| $\hbar$                   | Reduced Planck constant | ALT+0295                               | <code>\hbar</code>                 |
| $\mathcal{L}, \ell, \ell$ | Script small L          | ALT+8467<br>1D459 Alt+X<br>1D4C1 Alt+X | <code>\ell</code>                  |
| $\sqrt{\phantom{x}}$      | Square root             | ALT+251<br>ALT+8730                    | <code>\sqrt{\phantom{x}}</code>    |
| $\sqrt[3]{\phantom{x}}$   | Cube root               | ALT+8731                               | <code>\sqrt[3]{\phantom{x}}</code> |
| $\sqrt[4]{\phantom{x}}$   | Fourth root             | ALT+8732                               | <code>\sqrt[4]{\phantom{x}}</code> |
| $\infty$                  | Infinity                | ALT+236<br>ALT+8734                    | <code>\infty</code>                |
| $\frac{1}{4}$             | One quarter             | ALT+171<br>ALT+0188                    | <code>\frac{1}{4}</code>           |
| $\frac{1}{2}$             | One half                | ALT+172<br>ALT+0189                    | <code>\frac{1}{2}</code>           |
| $\frac{3}{4}$             | Three quarters          | ALT+243<br>ALT+0190                    | <code>\frac{3}{4}</code>           |
| <sup>1</sup>              | Superscript 1           | ALT+0185                               | <code>^{\phantom{x}}</code>        |
| <sup>2</sup>              | Superscript 2           | ALT+0178                               | <code>^{\phantom{x}}</code>        |
| <sup>3</sup>              | Superscript 3           | ALT+0179                               | <code>^{\phantom{x}}</code>        |
| <sup>n</sup>              | Superscript n           | ALT+8319                               | <code>^{\phantom{x}}</code>        |

## Inserting ALT Codes (ddd, dddd)

1. Ensure that Num Lock is enabled on your keyboard.
2. Press and hold the **ALT** key and type the 3-digit ASCII character code on the numeric keypad.  
or
3. Press and hold the **ALT** key and type the 4-digit Windows ALT code character on the numeric keypad.

## Inserting Unicode Characters (U+dddd)

1. Type the character code where you want to insert the Unicode symbol.
2. Press ALT+X to convert the code to the symbol.

# MS Word Equation Editor

## Greek Alphabet

| Lowercase |          |             |          |               |            |         |        |          |             |         |          |           |       |       |       |            |       |          |        |
|-----------|----------|-------------|----------|---------------|------------|---------|--------|----------|-------------|---------|----------|-----------|-------|-------|-------|------------|-------|----------|--------|
| $\alpha$  | $\beta$  | $\gamma$    | $\delta$ | $\varepsilon$ | $\epsilon$ | $\zeta$ | $\eta$ | $\theta$ | $\vartheta$ | $\iota$ | $\kappa$ | $\lambda$ | $\mu$ | $\nu$ | $\xi$ | $\omicron$ | $\pi$ | $\varpi$ | $\rho$ |
| $\varrho$ | $\sigma$ | $\varsigma$ | $\tau$   | $\upsilon$    | $\varphi$  | $\phi$  | $\chi$ | $\psi$   | $\omega$    |         |          |           |       |       |       |            |       |          |        |

  

| Uppercase  |            |          |          |            |            |            |          |            |            |           |            |            |       |            |       |            |          |            |            |
|------------|------------|----------|----------|------------|------------|------------|----------|------------|------------|-----------|------------|------------|-------|------------|-------|------------|----------|------------|------------|
| $\text{A}$ | $\text{B}$ | $\Gamma$ | $\Delta$ | $\text{E}$ | $\text{Z}$ | $\text{H}$ | $\Theta$ | $\text{I}$ | $\text{K}$ | $\Lambda$ | $\text{M}$ | $\text{N}$ | $\Xi$ | $\text{O}$ | $\Pi$ | $\text{P}$ | $\Sigma$ | $\text{T}$ | $\Upsilon$ |
| $\Phi$     | $\text{X}$ | $\Psi$   | $\Omega$ |            |            |            |          |            |            |           |            |            |       |            |       |            |          |            |            |

## Basic Math Symbols

|               |              |                      |                         |                         |          |              |             |           |          |                    |                    |            |          |             |            |         |           |              |            |
|---------------|--------------|----------------------|-------------------------|-------------------------|----------|--------------|-------------|-----------|----------|--------------------|--------------------|------------|----------|-------------|------------|---------|-----------|--------------|------------|
| $\pm$         | $\infty$     | $=$                  | $\neq$                  | $\sim$                  | $\times$ | $\div$       | $!$         | $\propto$ | $<$      | $\ll$              | $>$                | $\gg$      | $\leq$   | $\geq$      | $\mp$      | $\cong$ | $\approx$ | $\equiv$     | $\forall$  |
| $\text{C}$    | $\partial$   | $\sqrt{\phantom{x}}$ | $\sqrt[3]{\phantom{x}}$ | $\sqrt[n]{\phantom{x}}$ | $\cup$   | $\cap$       | $\emptyset$ | $\%$      | $\circ$  | $^{\circ}\text{F}$ | $^{\circ}\text{C}$ | $\Delta$   | $\nabla$ | $\exists$   | $\nexists$ | $\in$   | $\ni$     | $\leftarrow$ | $\uparrow$ |
| $\rightarrow$ | $\downarrow$ | $\leftrightarrow$    | $\therefore$            | $+$                     | $-$      | $\neg$       | $\alpha$    | $\beta$   | $\gamma$ | $\delta$           | $\varepsilon$      | $\epsilon$ | $\theta$ | $\vartheta$ | $\mu$      | $\pi$   | $\rho$    | $\sigma$     | $\tau$     |
| $\varphi$     | $\omega$     | $*$                  | $\cdot$                 | $\vdots$                | $\dots$  | $\therefore$ | $\ddots$    | $\aleph$  | $\beth$  | $\blacksquare$     |                    |            |          |             |            |         |           |              |            |

## Operators

[illegible]

## Sources

- Microsoft Copilot Chatbot (2026).
  1. Create a table of upper and lowercase Greek characters with names, ALT codes, and physics usage.
  2. Create a table of all common math characters from the ASCII tables with ALT codes, description, and category.

<https://m365.cloud.microsoft/chat/>

- Microsoft Corp. (2026). Microsoft Word, Equation Editor.