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February 5, 2009 α \alpha β \beta γ \gamma Γ \Γ δ \delta Δ \Δ ε \epsilon ζ \zeta η \eta θ, ϑ \theta Θ \Θ ι \iota κ, ϰ \kappa λ \lambda Λ \Λ μ \mu ν \nu ξ \xi Ξ [omicron] π, ϖ \pi Π \Π ρ, ϱ \rho σ, ς \sigma Σ \Σ τ \tau υ \upsilon Υ \Υ ϕ, φ \phi Φ \Φ χ \chi ψ \psi Ψ \Ψ ω \omega Ω \Ω Capital letters on the right-hand side are obtained by capitalizing the LaTeX command for the lowercase version. Capital letters in are exceptions which have no LaTeX commands. Instead, use their Roman counterparts. For example, to produce a capital chi simply type X. This also applies for the lowercase omicron. When two versions of the lowercase letter are available, a var prefix can be added to obtain the second version. For example, the two versions of epsilon are \epsilon and \varepsilon. LaTeX provides extensive support for mathematical notation, including Greek letters and a wide variety of mathematical symbols. This guide covers the most commonly used symbols and how to use them in your documents.NameLaTeX CommandSymbolalphaalpha\alpha$betabeta\beta$gammagamma\gamma$deltadelta\delta$epsilonepsilon\epsilon$zetazeta\zeta$etaeta\eta$thetaiota\iota$kappa\kappa$lambda\lambda$mu\mu$nu\nu$xi\xi$omicronno$piπ\pi$rhoρ\rho$sigma\sigma$tau\tau$upsilon\upsilon$phi\phi$chiχ\chi$psi\psi$omega\omega$DescriptionLaTeX CommandSymbolInfinity\infty$\infty$For all\forall$\forall$Real part\Re$\Re$Imaginary part\Im$\Im$Nabla\nabla$\nabla$Exists\exists$\exists$Partial\partial$\partial$Does not existexists$\exists$Empty set\emptyset$\emptyset$Empty set (variant)\varnothing$\varnothing$Power set\wp$\wp$Complement\complement$\complement$Negationneg$\neg$Center dots\cdots$\cdots$Square\square$\square$Square root\sqrt$\sqrt$Black square\blacksquare$\blacksquare$Triangle\triangle$\triangle$DescriptionLaTeX CommandSymbolTimes\times$\times$Center dot\cdot$\cdot$Division\div$\div$Intersection\cap$\cap$Union\cup$\cup$Not equaleq$\neq$Less than or equal\leq$\leq$Greater than or equal\geq$\geq$Element of\in$\in$Perpendicular\perp$\perp$Not element ofotin$\notin$Subset\subset$\subset$Similar or equal\simeq$\simeq$Approximately\approx$\approx$Wedge\wedge$\wedge$Vee\vee$\vee$Direct sum\oplus$\oplus$Tensor product\otimes$\otimes$Box\Box$\Box$Box times\boxtimes$\boxtimes$Equivalent\equiv$\equiv$Congruent\cong$\cong$ In LaTeX, you can write the epsilon symbol using the \epsilon command for the lowercase epsilon (ε) and the \Epsilon command for the uppercase epsilon (Ε). The following examples show how to write the epsilon symbol in LaTeX. How to Write the Epsilon Symbol in Text We can use the \epsilon command to write the lowercase epsilon symbol in LaTeX document for text. Suppose we want to write the epsilon symbol in the text. We can use the following LaTeX code to do so: \documentclass{article} \begin{document} This is an example of using the epsilon symbol (ϵ) in a sentence. \end{document} Output: This is an example of using the epsilon symbol ε in a sentence. In this example, we use the \epsilon command to display the lowercase epsilon symbol in the text. How to Write the Epsilon Symbol in Mathematical Expressions For mathematical expressions, we can use the \epsilon command to ensure proper formatting. Suppose we would like to write mathematical expressions that contain the epsilon symbol. We can use the following LaTeX code to do so: \documentclass{article} \begin{document} An inline mathematical expression: $\alpha + \beta = \epsilon$. A displayed mathematical expression: $$\alpha^2 + \beta^2 = \epsilon^2$$ \end{document} Output: An inline example, we use the ϵ command to denote the epsilon symbol in both inline and displayed mathematical expressions. Conclusion We can use the \epsilon command for both text and mathematical expressions. This ensures that the epsilon symbol is properly formatted and displayed in LaTeX document. Greek Alphabet at one point was even used for numeral systems. Mathematicians all over the world, use certain Greek letters and mathematical symbols. Our keyboard does not contain greek alphabets, so we use Latex Code to write the Greek alphabets with their Latex code. Greek Symbols and their LaTeX Code - TERMSYMBOLLATEX1.alpha\alpha\alpha2.beta\beta\beta3.gamma\gamma\gamma4.Delta\Delta\Delta5.delta\delta\delta6.epsilon\epsilon\epsilon7.zeta\zeta\zeta8.eta\eta\eta9.Theta\Theta\Theta11.theta\theta\theta11.iota\iota\iota12.kappa\kappa\kappa13.Lambda\Lambda\Lambda14.lambda\lambda\lambda15.mu\mu\mu16.nuuu17.Xi\Xi\Xi18.xi\xi\xi19.Pi\Pi\Pi20.pi\pi\pi21.varpi\varpi\varpi22.Sigma\Sigma\Sigma23.sigma\sigma\sigma24.tau\tau\tau25.Phi\Phi\Phi26.phi\phi\phi27.varphi\varphi\varphi28.chi\chi\chi29.Psi\Psi\Psi30.psi\psi\psi31.Omega\Omega\Omega; Tutorials Point is a leading Ed Tech company striving to provide the best learning material on technical and non-technical subjects. © Copyright 2025. All Rights Reserved. εepsilonThe Greek letter epsilon (ϵepsilon) is commonly used in mathematics and science to represent a small positive quantity, an arbitrarily small positive number, or an error term. It is often used in calculus, real analysis, and other fields to denote a small quantity that can be made as small as desired. Did you know? Overleaf has a symbol palette for users with premium accounts. Read more here. Note that some of the symbols require loading of the amssymb package, and this information is shown when you hover on the symbol. α A {\displaystyle \alpha A} \alpha A ν N {\displaystyle \nu N} ν N β B {\displaystyle \beta B} \beta B Ξ Ξ {\displaystyle \xi \Xi } \xi \Xi γ Γ {\displaystyle \gamma \Gamma } \gamma \Gamma ο O {\displaystyle o\,\!} ο O δ Δ {\displaystyle \delta \Delta } \delta \Delta π Π {\displaystyle \pi \Pi } \pi \Pi ε ϵ E {\displaystyle \epsilon \varepsilon E\,\!} \epsilon \varepsilon E ρ ϱ P {\displaystyle \rho \varrho P\,\!} \rho \varrho P ζ Ζ {\displaystyle \zeta Z} \zeta Z σ Σ {\displaystyle \sigma \,\!\Sigma \,\!} \sigma \Sigma η H {\displaystyle \eta H} \eta H τ T {\displaystyle \tau T} \tau T θ ϑ Θ {\displaystyle \theta \vartheta \Theta } \theta \vartheta \Theta υ Y {\displaystyle \upsilon \Upsilon } \upsilon \Upsilon ι I {\displaystyle \iota I} \iota I φ ϕ Φ {\displaystyle \phi \varphi \Phi } \phi \varphi \Phi κ K {\displaystyle \kappa K} \kappa K χ X {\displaystyle \chi X} \chi X λ Λ {\displaystyle \lambda \Lambda \,\!} \lambda \Lambda ψ Ψ {\displaystyle \psi \Psi } \psi \Psi μ M {\displaystyle \mu M} \mu M ω Ω {\displaystyle \omega \Omega } \omega \Omega ← {\displaystyle \leftarrow } \leftarrow = {\displaystyle \Leftarrow } \Leftarrow → {\displaystyle \rightarrow } \rightarrow ⇒ {\displaystyle \Rightarrow \,\!} \Rightarrow ↔ {\displaystyle \leftrightarrow } \leftrightarrow ↽ {\displaystyle \leftharpoonup } \leftharpoonup ⇀ {\displaystyle \rightharpoonup } \rightharpoonup ↼ {\displaystyle \leftharpoondown } \leftharpoondown ⇁ {\displaystyle \rightharpoondown } \rightharpoondown ↑ {\displaystyle \uparrow } \uparrow ↓ {\displaystyle \downarrow } \downarrow ⇑ {\displaystyle \Uparrow \,\!} \Uparrow ⇓ {\displaystyle \Downarrow } \Downarrow ⇕ {\displaystyle \Updownarrow } \Updownarrow ↕ {\displaystyle \updownarrow } \updownarrow ↔ {\displaystyle \longleftrightarrow } \longleftrightarrow ⇔ {\displaystyle \Longleftrightarrow } \Longleftrightarrow ↦ {\displaystyle \longmapsto } \longmapsto ⟼ {\displaystyle \longmapsto \,\!} \longmapsto ↗ {\displaystyle \earrow } \earrow ↙ {\displaystyle \swarrow } \swarrow ↖ {\displaystyle \nwarrow } \nwarrow ← {\displaystyle \leftarrow } \leftarrow ⟵ {\displaystyle \longleftarrow } \longleftarrow ⇐ {\displaystyle \Leftarrow } \Leftarrow → {\displaystyle \rightarrow } \rightarrow ⟶ {\displaystyle \longrightarrow } \longrightarrow ⇒ {\displaystyle \Rightarrow \,\!} \Rightarrow ↦ {\displaystyle \mapsto } \mapsto ↩ {\displaystyle \hookleftarrow } \hookleftarrow ↪ {\displaystyle \hookrightarrow } \hookrightarrow ↼ {\displaystyle \leftharpoonup } \leftharpoonup ⇀ {\displaystyle \rightharpoonup } \rightharpoonup ↽ {\displaystyle \leftharpoondown } \leftharpoondown ⇁ {\displaystyle \rightharpoondown } \rightharpoondown ↑ {\displaystyle \uparrow } \uparrow ↓ {\displaystyle \downarrow } \downarrow ⇑ {\displaystyle \Uparrow \,\!} \Uparrow ⇓ {\displaystyle \Downarrow } \Downarrow ↕ {\displaystyle \updownarrow } \updownarrow ⇕ {\displaystyle \Updownarrow } \Updownarrow ∞ {\displaystyle \infty \,\!} \infty ∀ {\displaystyle \forall \,\!} \forall ℜ {\displaystyle \Re } \Re ∂ {\displaystyle \lim } \lim ∇ {\displaystyle abla } abla ∃ {\displaystyle \exists } \exists ∂ {\displaystyle \partial } \partial ∄ {\displaystyle exists } exists ∅ {\displaystyle emptyset } \emptyset ∅ {\displaystyle \varnothing \,\!} \varnothing ∈ {\displaystyle \in } \in ∉ {\displaystyle otin } otin ⊂ {\displaystyle \subset } \subset ⊆ {\displaystyle \subseteq } \subseteq ≅ {\displaystyle \cong } \cong For more information see: This site is supported by donations to The OEIS Foundation. From OeisWiki All the predefined mathematical symbols from the TeX package are listed below. More symbols are available from extra packages. Greek letters Greek letters Symbol LaTeX Symbol LaTeX A {\displaystyle \mathrm {A} } and α {\displaystyle \alpha } \Alpha and \alpha N {\displaystyle \mathrm {N} } and ν {\displaystyle \nu } \Nu and ν B {\displaystyle \mathrm {B} } and β {\displaystyle \beta } \Beta and beta Ξ {\displaystyle \Xi } and Ξ {\displaystyle \xi } \Xi and \xi Γ {\displaystyle \Gamma } and γ {\displaystyle \gamma } \Gamma and \gamma O {\displaystyle \mathrm {O} } and ο {\displaystyle \mathrm {o} } \Omicron and \omicron Δ {\displaystyle \Delta } and δ {\displaystyle \delta } \Delta and \delta Π {\displaystyle \Pi } , π {\displaystyle \pi } and ω {\displaystyle \varpi } \Pi, \pi and \varpi E {\displaystyle \mathrm {E} } , ε {\displaystyle \varepsilon } and ε {\displaystyle \varepsilon } \Epsilon, \epsilon and \varepsilon P {\displaystyle \mathrm {P} } , ρ {\displaystyle \rho } and ρ {\displaystyle \varrho } \Rho, \rho and \varrho Z {\displaystyle \mathrm {Z} } and Ζ {\displaystyle \zeta } \Zeta and \zeta Σ {\displaystyle \Sigma } , σ {\displaystyle \sigma } and ς {\displaystyle \varsigma \,\!} \Sigma, \sigma and \varsigma H {\displaystyle \mathrm {H} } and η {\displaystyle \eta } \Eta and \eta T {\displaystyle \mathrm {T} } and τ {\displaystyle \tau } \Tau and \tau Θ {\displaystyle \Theta } , θ {\displaystyle \theta } and θ {\displaystyle \vartheta } \Theta, \theta and \vartheta Y {\displaystyle \Upsilon } and υ {\displaystyle \upsilon } \Upsilon and \upsilon I {\displaystyle \mathrm {I} } and ι {\displaystyle \iota } \Iota and \iota Φ {\displaystyle \Phi } , φ {\displaystyle \phi } and φ {\displaystyle \varphi } \Phi, \phi and \varphi K {\displaystyle \mathrm {K} } , κ {\displaystyle \kappa } and ϰ {\displaystyle \varkappa } \Kappa, \kappa and \varkappa X {\displaystyle \mathrm {X} } and χ {\displaystyle \chi } \Chi and \chi Λ {\displaystyle \Lambda } and λ {\displaystyle \lambda } \Lambda and \lambda Ψ {\displaystyle \Psi } and ψ {\displaystyle \psi } \Psi and \psi M {\displaystyle \mathrm {M} } and μ {\displaystyle \mu } \Mu and \mu Ω {\displaystyle \Omega } and ω {\displaystyle \omega } \Omega and \omega Archaic Greek letters Symbol LaTeX F {\displaystyle \mathrm {Digamma} } \Digamma ϝ {\displaystyle \digamma } \digamma Unary operators Unary operators Symbol LaTeX Comment Symbol LaTeX Comment Symbol LaTeX Comment Symbol LaTeX Comment + {\displaystyle +\,\!} + − {\displaystyle -\,\!} - negation ! {\displaystyle !\,\!} ! factorial # {\displaystyle \#} \# primorial ¬ {\displaystyle eg } eg not Relation operators Relation operators Symbol LaTeX Comment Symbol LaTeX Comment < {\displaystyle {\displaystyle >\,\!} > is greater than ≮ {\displaystyle less } less is not less than ≯ {\displaystyle gtr } gtr is not greater than ≤ {\displaystyle leq } leq is less than or equal to ≥ {\displaystyle geq } geq is greater than or equal to ≤ {\displaystyle leqslant } leqslant is less than or equal to ≥ {\displaystyle geqslant } geqslant ≤ {\displaystyle leq } leq is neither less than nor equal to ≥ {\displaystyle geq } geq is neither greater than nor equal to ≤ {\displaystyle leqslant } leqslant is neither less than nor equal to ≥ {\displaystyle geqslant } geqslant ≤ {\displaystyle leqq } leqq ≥ {\displaystyle geqq } geqq ≤ {\displaystyle lneq } lneq ≥ {\displaystyle gneq } gneq ≤ {\displaystyle lneq } lneq ≥ {\displaystyle gneq } gneq ≤ {\displaystyle lneqq } lneqq ≥ {\displaystyle gneqq } gneq