

Math-Greek alphabet

Hello. *This shows how my pamphlets (Prof. King) typeset the Greek letters, and how I write them on the blackboard.*

alpha	α	A	
beta	β	B	
gamma	γ	Γ	<i>My blackboard lowercase-gamma has a loop at the bottom.</i>
delta	δ	Δ	<i>Different from ∇, nabla. See Wikipedia Nabla.</i>
epsilon	ε	E	<i>Different from \in, “is an element of”, and \ni, “owns”.</i>
zeta	ζ	Z	<i>My blackboard lowercase-zeta, at the bottom, curves all the way back left.</i>
eta	η	H	
theta	θ	Θ	<i>My blackboard lowercase-theta is closer to ϑ.</i>
iota	ι	I	
kappa	κ	K	
lambda	λ	Λ	
mu	μ	M	<i>Pronounced as “me-you”, slurred together —like a cat with an accent.</i>
nu	ν	N	<i>Pronounced as “new”. Different from Roman ν, and from Greek upsilon υ.</i>
xi	ξ	Ξ	<i>I pronounce as in the 2nd syllable of “pixie”.</i>
omicron	o	O	<i>Different from 0, zero. Different from \emptyset, the empty set.</i>
pi	π	Π	<i>Diff. from the Product \prod operator, e.g. $\prod_{n=2}^9 \Pi(n)$, or $\prod_{n=2}^9 \Pi(n)$.</i>
rho	ρ	P	
sigma	σ	Σ	<i>Different from the Sum \sum operator, e.g. $\sum_{k=1}^5 \Sigma(k)$, or $\sum_{k=1}^5 \Sigma(k)$.</i>
tau	τ	T	<i>Pronounced as the first syllable in “towel”.</i>
upsilon	υ	Υ	<i>Pronounced “oops-salon” —as if you’re startled by a hairdresser.</i>
phi	φ	Φ	<i>I pronounce as “fee”. Different from \emptyset, the empty set.</i>
chi	χ	X	<i>I pronounce as the first syllable in “kayak”, the boat.</i>
psi	ψ	Ψ	<i>Remove the “ti” from “tipsy”; that’s how I pronounce “psi”.</i>
omega	ω	Ω	<i>Different from Roman w.</i>

Alignment: $\alpha A \beta B \gamma \Gamma \delta \Delta \varepsilon E \zeta Z \eta H \theta \Theta \iota I \kappa K \lambda \Lambda \mu M \nu N \xi \Xi o O \pi \Pi \rho P \sigma \Sigma \tau T \upsilon \Upsilon \varphi \Phi \chi X \psi \Psi \omega \Omega$

Standard sets. *I use $\mathbb{Z} \mathbb{Q} \mathbb{R} \mathbb{C} \mathbb{A}$ for the: Integers Rationals Reals Complex-numbers Algebraic-numbers.*

Special symbols. *My typeset pamphlets use different fonts (usually boldface) for certain constant symbols.*

No	Yes!	Meaning:
π	π	The ratio of circle’s circumference to its diameter.
e	e	The base of log, the (natural) logarithm fnc. So $\log(e) = 1$.
γ	γ	Euler’s constant: $\gamma = \lim_{n \rightarrow \infty} [\mathcal{H}_{n-1} - \log(n)]$, where $\mathcal{H}_n := \sum_{k=1}^n 1/k$.
λ	λ	The Golden Ratio, $\lambda = \frac{1+\sqrt{5}}{2}$.
p, q	p, q	Generic prime numbers.
τ	τ	The number-of-divisors fnc: $\tau(7) = 2$.
σ	σ	The sum-of-divisors fnc: $\sigma(7) = 8$.
φ	φ	The Euler phi fnc: $\varphi(7) = 6$.
μ	μ	The Möbius fnc: $\mu(30) = -1$.
1	$\mathbf{1}$	Kronecker fnc: $\mathbf{1}(\text{true}) = 1$, $\mathbf{1}(\text{false}) = 0$. The indicator fnc of a set: $\mathbf{1}_S()$.
Γ	Γ	Gamma fnc: $\Gamma(\omega) := \int_0^\infty t^{\omega-1} e^{-t} dt$.
ζ	ζ	The Riemann zeta fnc: $\zeta(s) := \sum_{n=1}^\infty 1/n^s$.
θ, ϑ	ϑ	The Chebyshev theta fnc: $\vartheta(x) := \sum_{p: p \leq x} \log(p)$.
L, l, ℓ	\mathbb{L}, ℓ	Banach spaces \mathbb{L}_p and ℓ_p .