

## GREEK LETTERS

*Learn the names of Greek letters – not just the obvious ones like alpha, beta, and pi, but the more obscure psi, xi, tau, omega. [...] Learn not just to recognize these letters, but how to pronounce them. Even if you are not reading mathematics out loud, it is hard to think about formulas if  $\xi, \psi, \tau, \omega, \varphi$  are all “squiggles” to you.*

J. Hubbard

Below is a table of the Greek alphabetical order, with pronunciation guides for the letter names and sounds that match how mathematicians pronounce them in English. This is not always the same as Greek pronunciation, *e.g.*, the sound of the letter  $\beta$  in modern Greek is v rather than b, so  $\beta\omicron\lambda\tau$  is Greek for volt, not bolt. If Greek borrows a foreign word with a b sound in it, they transcribe that sound using the two-letter combination  $\mu\pi$ , so barbershop is  $\mu\pi\alpha\rho\mu\pi\acute{\epsilon}\rho\iota\kappa\omicron$  = barberiko and blues (the musical style) is  $\mu\pi\lambda\omicron\upsilon\zeta$ . (Compare with Greek’s single letter  $\theta$  where English uses two letters *th*. If your alphabet doesn’t have a letter representing the sound you need, you have to improvise.)

Letter	Name	Sound
Aα	άλφα (alpha)	a
Bβ	βήτα (beta)	b
Γγ	γάμμα (gamma)	g
Δδ	δέλτα (delta)	d
Eε	έψιλον (epsilon)	e
Zζ	ζήτα (zeta)	z
Hη	ήτα (eta)	ee
Θθ	θήτα (theta)	th
Iι	ιώτα (iota)	i
Kκ	κάππα (kappa)	k
Λλ	λάμβδα (lambda)	l
Mμ	μύ (mu)	m
Nν	νύ (nu)	n
Ξξ	ξί (xi)	ks
Oο	όμικρον (omicron)	o
Ππ	πί (pi)	p
Pρ	ρώ (rho)	r
Σσ	σίγμα (sigma)	s
Tτ	ταύ (tau)	t
Υυ	ύψιλον (upsilon)	oo
Φφ	φί (phi)	f
Xχ	χί (chi)	kh (or h)
Ψψ	ψί (psi)	ps
Ωω	ωμέγα (omega)	o

Gain familiarity with the Greek letters by figuring out how to pronounce each Greek word below. Its meaning is in the next column over. The words are in Greek alphabetical order across the rows. Some of the words are loan words from English rather than native Greek words.

Once you get used to the letters, you'll see a lot of the words in the table are really the same in Greek and English, but a few words have been included where the Greek is only a root for words in English (like Greek for "heart" and "wood.") Try hiding the English and see if you can figure out the Greek words by themselves. (Note:  $\omega$  (omega) is o, *not* w!! For instance, *ωκεανογραφία* is not *wkeanografia*, but rather *okeanografia* = oceanography.)

Greek	Translation	Greek	Translation	Greek	Translation
αρώμα	aroma	άτομο	atom	βιβλίο	book
βασικό	basic	Βοστώνη	Boston	γεωμετρία	geometry
γλώσσα	language	Γαλλικά	French	δημοκρατία	democracy
δόντι	tooth	ενέργεια	energy	Ελληνικά	Greek
εγώ	ego	ζώο	animal	ζωδιακό	zodiac
ηθική	ethics	ηλεκτρικό	electric	ηχώ	echo
ήλιον	helium	θεωρήμα	theorem	θεολογία	theology
θεωρία	theory	ιστορία	(hi)story	ιδέα	idea
καρδιά	heart	καταστροφή	catastrophe	λάμπα	lamp
λογικό	logic	μανία	madness	μουσική	music
μπίρα	beer	νεύρο	nerve	νέο	new
νοσταλγία	nostalgia	Νίκη	sneaker goddess	ξύλο	wood
ξενοφοβία	xenophobia	οκτώ	eight	όνομα	name
πεντάγωνο	pentagon	πρόβλημα	problem	Πλάτων	Plato
ροκ	rock (music)	ρητορικό	rhetoical	ραψωδία	rhapsody
στόμα	mouth	σεξ	sex	σεισμικό	seismic
τρίγωνο	triangle	τετράγωνο	square	τραγωδία	tragedy
υπνώση	hypnosis	υδρογόνο	hydrogen	φοβία	fear
φύλλο	leaf	χημεία	chemistry	χιπ-χοπ	hip-hop
χορωδία	chorus	χρώμα	color	ψυχή	soul
ψευδώνυμο	pseudonym	ώρα	hour	Ωρίων	Orion

Uses of Greek letters in math can be found at [http://en.wikipedia.org/wiki/Greek\\_letters\\_used\\_in\\_mathematics,\\_science,\\_and\\_engineering](http://en.wikipedia.org/wiki/Greek_letters_used_in_mathematics,_science,_and_engineering). For their role in finance, see [http://en.wikipedia.org/wiki/Greeks\\_\(finance\)](http://en.wikipedia.org/wiki/Greeks_(finance)).