
History of Mathematics

Math 395 Spring 2010
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Fowler 310 MWF 10:30am - 11:25am
<http://faculty.oxy.edu/ron/math/395/10/>

Class 4: Wednesday January 27

TITLE Introduction to Ancient Greek Mathematics

CURRENT READING: Katz, §2.1

Homework for Friday January 29

Katz, p. 28-29. #2, #5, #10, #17, #20. EC: “bull’s eye problem” from WS #3.

SUMMARY

We begin to look at the contributions of Ancient Greece to mathematics.

Greek Numbers

The Greeks used a cipher system where each letter in the Greek alphabet represented a particular number and then some letters that were no longer in use were added for certain numbers (6, 90, 900).

As Katz says (page 31)

the letters ς (digamma) for 6, φ (koppa) for 90, and $\tau\lambda$ (sampi) for 900 are letters that by this time were no longer in use. Hence, 754 was written $\psi\nu\delta$ and 293 was written $\sigma\varphi\gamma$. To represent thousands, a mark was made to the left of the letters α through θ ; for example, $\prime\theta$ represented 9000. Larger numbers still were written using the letter M to represent myriads (10,000), with the number of myriads written above: $M^\delta = 40,000$, $M^{\iota\zeta\rho\theta\epsilon} = 71,750,000$.

Representation of a number system used by the Greeks as early as the sixth century BCE.

Letter	Value	Letter	Value	Letter	Value
α	1	ι	10	ρ	100
β	2	κ	20	σ	200
γ	3	λ	30	τ	300
δ	4	μ	40	υ	400
ϵ	5	ν	50	ϕ	500
ς	6	ξ	60	χ	600
ζ	7	\omicron	70	ψ	700
η	8	π	80	ω	800
θ	9	φ	90	$\tau\lambda$	900

EXAMPLE

Write 42 in Greek numbers. What does $\chi\xi\varsigma$ represent?

GroupWork

Describe the main reason why we still know the following names below and summarize their contributions to mathematics.

Thales (c. 624-547 BCE)

Pythagoras (c. 572-497 BCE)

Plato (429-347 BCE)

Aristotle (384-322 BCE)

Zeno (c. 495-c. 430 BCE)