



MATHEMATICS

ΔΠCΦΣΠΤ
GRΣΣCΣ



KS2 Ancient Greece Project 4, Part 2: Monday 1st June - Friday 12th June

Two Systems of Numerals

There was not only one system of Greek numerals, there were two! Depending upon when you lived, you may have used either the **acrophonic** or **alphabetic** numerals.

Acrophonic numerals

The acrophonic system was used until around 100 BCE and inspired the Roman numeral system. Like the Roman numeral system, both Greek numeral systems are additive, meaning that you add up the individual symbols to determine their value. Here's a chart of acrophonic numerals:

I	II	III	IIII	Γ	ΓI	ΓII	ΓIII	ΓIIII	Δ
1	2	3	4	5	6	7	8	9	10
ΔΓ	ΔΔ	ΔΙ	Η	Ρ	Χ	Φ	Μ	ΜΙ	
15	20	50	100	500	1,000	5,000	10,000	50,000	

The number 2647: ΧΧΡΗΔΔΔΔΓΙΙ

$$2 \times 1000 + 500 + 100 + 4 \times 10 + 5 + 2 \times 1 = 2647$$

	Units	Tens	Hundreds
1	α	ι	ρ
2	β	κ	σ
3	γ	λ	τ
4	δ	μ	υ
5	ε	ν	φ
6	ς	ξ	χ
7	ζ	ο	ψ
8	η	π	ω
9	θ	ς	ς

Alphabetic numerals

The acrophonic system was eventually replaced by the alphabetic numerals, which use 27 different symbols in different combinations. The letters of the alphabet were used to represent numerals. The first nine letters (α through θ) represented the numbers 1 to 9. The next nine letters were used for the tens (10, 20, 30 all the way to 90), and the next nine letters were used for the hundreds. Here's a chart to give you an idea.

Using this alphabetic system, we would write 784 as ψπδ, which would be added together as 700 + 80 + 4. Now, here's something really neat! The Greeks did not use place value position like we do, so you could also write 784 as πδψ since the ψ represents 700 regardless of its placement (as it is its own symbol, and not just one symbol moved around like we do now).

When calculating with Greek numerals, the calculations are the same as with our Arabic numbers. You add each digit and carry any numbers greater than ten over to the next.