
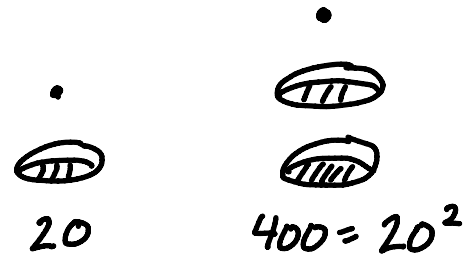







From our text:

Mayan Numerals

	•	••	•••	••••
0	1	2	3	4
—	•	••	•••	••••
5	6	7	8	9
==	•	••	•••	••••
10	11	12	13	14
===	•	••	•••	••••
15	16	17	18	19



Egyptian Hieroglyphs


1	10	100	1000	10,000	100,000	1,000,000	10,000,000
	∩	9		∟		 or 	

Ionian Alphabetic System

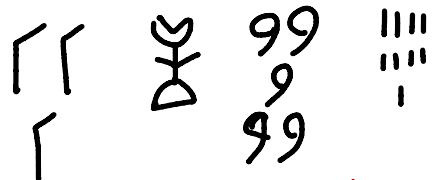

1 α	10 ι	100 ρ
2 β	20 κ	200 σ
3 γ	30 λ	300 τ
4 δ	40 μ	400 υ
5 ε	50 ν	500 φ
6 Ϸ	60 ξ	600 χ
7 ζ	70 ο	700 ψ
8 η	80 π	800 ω
9 θ	90 Ϙ	900 λ

1. Write each number below in our system.

(a) (Mayan)

• ← 20³'s 1 · 20³ + 0 · 20² + 5 · 20 + 6 · 1
 ← 20²'s = 8106
 — ← 20's
 — · ← 1's

(b) (Egyptian hieroglyphs)

 31,509
 10,000 1,000 100 10's 1
 ← Do you see that is better than  ?

(c) (Ionian alphabetic)

ϑ ο ϕ 579
 ↑ ↑ ↑
 9 70 500

2. Write the number 9235 using each system below.

(a) (Mayan)

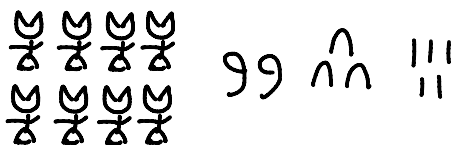
thinking.

Answer :

$9235 = 1 \cdot 20^3 + 3 \cdot 20^2 + 1 \cdot 20 + 15$

•
 •••
 •
 ≡

(b) (Egyptian hieroglyphs)

 ugh.
 9235

(c) (Ionian alphabetic)

ϑ ο λ ε

↑ This indicates the symbol should be multiplied by 1000.

3. Perform the operations below in the given numerical system. Describe the algorithm and deduce the needed memorization.

(a) (Egyptian)

$99 \begin{matrix} \wedge \wedge \\ \wedge \wedge \\ \wedge \end{matrix} \begin{matrix} ||| \\ ||| \\ ||| \end{matrix}$ plus $\begin{matrix} \wedge \wedge \wedge \\ \wedge \wedge \wedge \\ | \end{matrix}$

combine symbols

$99 \begin{matrix} \wedge \wedge \wedge \\ \wedge \wedge \wedge \\ \wedge \end{matrix} \begin{matrix} ||| \\ ||| \\ ||| \end{matrix}$

collect groups of 10 to replace

$999 \wedge \wedge |||$

move a 20's to the 1's

(b) (Mayan)

$\begin{matrix} \text{—} \\ \text{—} \\ \text{—} \end{matrix}$ minus $\begin{matrix} \dots \\ \dots \\ \dots \end{matrix}$

move a 20² to the 20's

$\begin{matrix} \dots \\ \dots \\ \dots \end{matrix}$ minus $\begin{matrix} \dots \\ \dots \\ \dots \end{matrix}$

delete like

$\begin{matrix} \dots \\ \dots \\ \dots \end{matrix}$ minus $\begin{matrix} \dots \\ \dots \\ \dots \end{matrix}$

move a 20's to the 1's

$\begin{matrix} \dots \\ \dots \\ \dots \end{matrix}$

(c) (Ionian alphabetic)

$\pi \beta$ multiplied by $K \eta$

Need to know:

- $\pi \times K = , \alpha X$
- $\pi \times \eta = X \mu$
- $\beta \times K = \mu$
- $\beta \times \eta = i \zeta$

then add all these up to get

$, \alpha X X \mu \mu i \zeta = , \beta \sigma \rho \zeta$

This feels hard.

$\begin{matrix} \dots \\ \dots \\ \dots \end{matrix}$ ← answer