

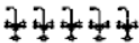
EGYPTIAN HIEROGLYPHICS

- ❖ One of the first additive systems, dates back to 3400 B.C.
- ❖ A single line or stroke written repeatedly denote the number 1–9
- ❖ A new symbol is used to indicate a set of ten things

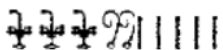
Hieroglyphics numerals

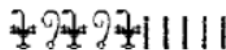
Egyptian Numeral	Name	Value	Power of 10
	Staff (vertical stroke)	1	10^0
	Heel bone (arch)	10	10^1
	Scroll (coiled rope)	100	10^2
	Lotus flower	1,000	10^3
	Pointing finger	10,000	10^4
	Burbot fish	100,000	10^5
	Astonished person	1,000,000	10^6

- ❖ The system is quite simple, does not use place value, and has no zero
- ❖ Since the system is repetitive, we write the numeral for 6000 six times; for 5,000,000 five times; for 7 seven times; and 50 five times as illustrated below:

 = 6000,  = 5,000,000, 7 = , 50 = 

- ❖ Egyptians wrote their numerals either from right to left or left to right. But regardless of arrangement, the value of the number denoted is not affected. That is, there are no required order for the symbols. Below are examples of representations of the number 3205:







- ❖ Because the system, uses the addition principle, we evaluate a numeral represented by adding the values of the hieroglyphics regardless of their position.
- ❖ The ancient Egyptians had unit fractions, i.e., fractions whose numerator is 1. These were denoted by 
- ❖ $\frac{1}{3}$ and $\frac{1}{21}$ are written as  and  respectively. Other fractions were expressed as sums of unit fractions, viz $\frac{3}{4} = \frac{1}{2} + \frac{1}{4} =$  + .
- ❖ The Egyptians also had other number systems, namely, the Hieratic system derived from the Hieroglyphic for the exclusive use of the priesthood, and the Demotic system which was evolved from the Hieratic for general use. But these are not additive systems.