

Section 4.1

Introduction to Early Number Systems

Through out history civilizations have keep records using their own number systems. This unit will introduce some basic number systems that were used by past civilizations.

Examples of Ancient Number Systems








- 1) Egyptian
- 2) Hindu-Arabic
- 3) Roman
- 4) Mayan
- 5) Traditional Chinese
- 6) Babylonian

I) Egyptian Number System

The Egyptian use symbols to represent the values that are multiple of ten.

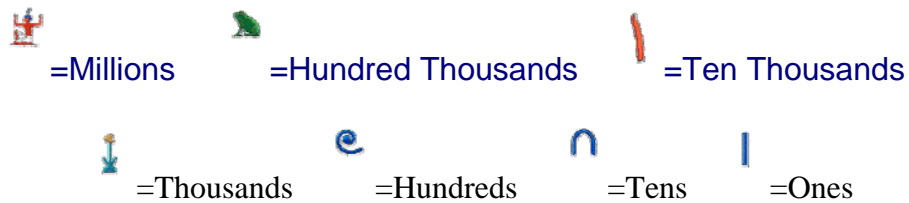
The symbols are written in figure 1-1

Figure 1.1

1 =		staff
10 =		heel bone
100 =		coil of rope
1000 =		lotus flower
10,000 =		pointing finger
100,000 =		tadpole
1,000,000 =		astonished man

(This chart is provided by the Department of Mathematics and Statistics at Wichita State University)

These symbols were provided by <http://eyelid.ukonline.co.uk/ancient/numbers.htm>



Example 1

Write the following numbers as an Egyptian number.

a) 345



(Symbols courtesy <http://eyelid.ukonline.co.uk/ancient/numbers.htm>)

b) 456



(Symbols courtesy <http://eyelid.ukonline.co.uk/ancient/numbers.htm>)

c) 45623



(Symbols courtesy <http://eyelid.ukonline.co.uk/ancient/numbers.htm>)

Example 2

Write the following Egyptian Numbers as a decimal number.

a)



Answer: 134

b)



Answer: 2105

c)



Answer: 30400

II) Roman Numerals

Roman Numerals are very similar to the Egyptian system, but are based on 5 instead of 10.

The Roman Numerals

Symbol	Number Value
I	1
V	5
X	10
L	50
C	100
D	500
M	1000
\overline{V}	5000
\overline{X}	10000
\overline{L}	50000
\overline{C}	100000
\overline{D}	500000
\overline{M}	1000000

Example 3

Convert the following decimal number to a Roman numeral.

1) 25

XXV

2) 246

200 = CC

40 = XL

6 = VI

So, the final answer would be
CCXLVI

3) 1989

1000 = M

900 = CM

80 = LXXX

9 = IX

Final Answer: MCMLXXXIX

4) 13020

\overline{X} = 10,000

MMM = 3,000

XX = 20

Final Answer is \overline{X} MMMXX

5) 1148

M = 1000

C = 100

XC = 40

VIII = 8

Final answer MCXCVIII

Example 4

Write the following decimal numbers as Roman Numerals.

1) MMXXXII

Answer: 2032

2) CMMLXXXVI

Answer: 1986
