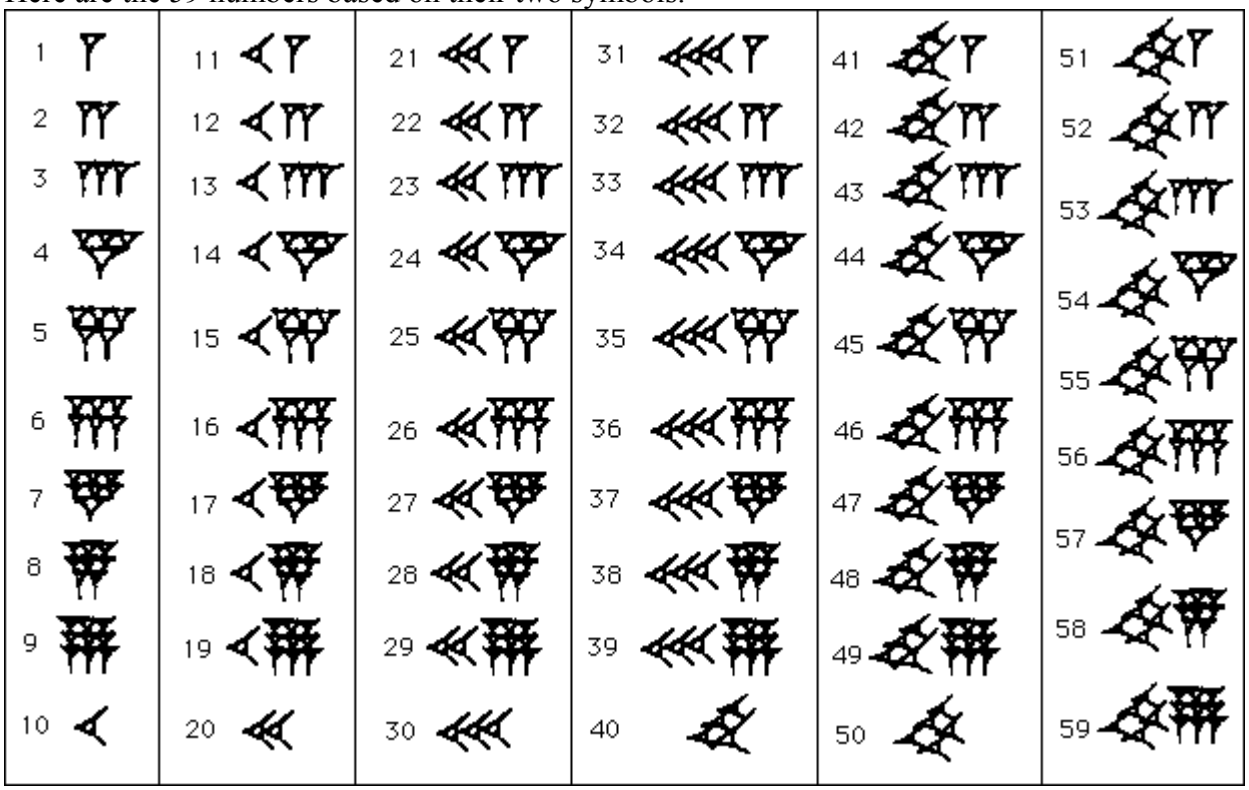
The University of Georgia

EMAT 6700

The Babylonian number system was base 60, sexagesimal number system, that included two symbols and a positional system.

Here are the 59 numbers based on their two symbols.



Let's look at how mult. and addition might work in base four.
Below are the addition and mult. tables. And you would need to memorize these tables in order to work fluently in base four.

Addition	0	1	2	3
0	0	1	2	3
1	1	2	3	10
2	2	3	10	11
3	3	10	11	12

Mult.	0	1	2	3
0	0	0	0	0
1	0	1	2	3
2	0	2	10	12
3	0	3	12	13

For two digit mult you can use the table in order to know when you carry a number over.

Mult. 20 in base 4 — 20 = 2x4 = 8 in base ten

x13 — 13 = 1x4 + 3 = 7 in base ten

120 — 7 x 8 = 56 in base ten

20

320 — 320_4 = $3x4^2 + 2x4 + 0 = 56$ in base ten

The tables for Babylonian addition and mult. would have to be memorized.

The number 123 in base ten can be broken down to $1 \times 10^2 + 2 \times 10 + 3$

Let's try to figure out 42, 25, 35 in base 60 is in base 10.

$42 \times 60^2 + 25 \times 60 + 35 = 152735$