

Babylonian multiplication tables

Math 105 History of Mathematics

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Mesopotamian mathematics uses base 60 numerals called a sexagesimal system. In order to do arithmetic in base 60, you need to memorize certain facts or at least be able to access them in tables.

I'll denote base 60 numerals so that the base 60 digits are separated by commas. For example, the expression 4,05,25 means 4 times 60^2 plus 5 times 60 plus 25.

Tables for addition and subtraction are the same as ours for adding and subtracting numbers less than or equal to 9. Other facts are needed, too, such as 40 plus 50 equals 1,30. Most of these are easy to find, so I won't record them here.

Tables for multiplication up through 9 times 9 are the same as our decimal multiplication tables. More tables are needed to multiply the digits 1 through 9 by multiples of 10, and to multiply one multiple of 10 by another multiple of 10. I've recorded them below.

	10	20	30	40	50
1	10	20	30	40	50
2	20	40	1,00	1,20	1,40
3	30	1,00	1,30	2,00	2,30
4	40	1,20	2,00	2,40	3,20
5	50	1,40	2,30	3,20	4,10
6	1,00	2,00	3,00	4,00	5,00
7	1,10	2,20	3,30	4,40	5,50
8	1,20	2,40	4,00	5,20	6,40
9	1,30	3,00	4,30	6,00	7,30
10	1,40	3,20	5,00	6,40	8,20
20	3,20	6,40	10,00	13,20	16,40
30	5,00	10,00	15,00	20,00	25,00
40	6,40	13,20	20,00	26,40	33,20
50	8,20	16,40	25,00	33,20	41,40