Different number systems

Roman numbers

Roman numerals follow a pattern:

Ones	I	II	III	IV	V	VI	VII	VIII	IX
Tens	X	XX	XXX	XL	L	LX	LXX	LXXX	XC
Hundreds	C	CC	CCC	CD	D	DC	DCC	DCCC	CM
Thousands	M	MM	MMM	IV	V	VI	VII	VIII	IX
Ten thousands	X	XX	XXX	XL	L	LX	LXX	LXXX	XC
Hundred thousands	C	CC	CCC	CD	D	DC	DCC	DCCC	CM

The numerals are combined to make number
e.g. 32 is XXXII
and 2009 is MMIX (two thousand & nine)
1234 is MCCXXXIV.

Mayan numbers

This ancient system is based on 20 rather than 10.

Forty-three would be written as two dots (two lots of 20) with three dots underneath.
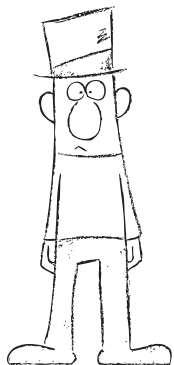
Different number systems

Chinese numbers

0	1	2	3	4	5	6	7	8	9	10	100	1000
零	一	二	三	四	五	六	七	八	九	十	百	千

Chinese people use the number system of digits 0 to 9 now adopted around the world, but also still use a simplified version of traditional Chinese numerals as above.
Eleven in Chinese is "ten one". Twelve is "ten two", and so on.
Twenty is "Two ten", twenty-one is "two ten one", and so on.

十一 十二 十三

21   22   23

Different number systems

Babylonian numbers

Here are the 59 numbers built from two symbols. 61 would then be written as the symbol for 1 followed by the symbol for 1 with a space between the two, the first symbol shows the number of 60s. Writing 62 would also be quite simple. Writing 60 however could be confusing as there was no symbol for zero! It seems that the context of the number helped them to decide if it was one, or one sixty, or even one lot of 360.

1	11	21	31	41	51
2	12	22	32	42	52
3	13	23	33	43	53
4	14	24	34	44	54
5	15	25	35	45	55
6	16	26	36	46	56
7	17	27	37	47	57
8	18	28	38	48	58
9	19	29	39	49	59
10	20	30	40	50	

Napier's rods

How is each strip made?
To work out 4896 × 7, take the 4, 8, 9 and 6 strips.

Main grid (each cell shows tens/units):

0	1	2	3	4	5	6	7	8	9
0/0	0/2	0/4	0/6	0/8	1/0	1/2	1/4	1/6	1/8
0/0	0/3	0/6	0/9	1/2	1/5	1/8	2/1	2/4	2/7
0/0	0/4	0/8	1/2	1/6	2/0	2/4	2/8	3/2	3/6
0/0	0/5	1/0	1/5	2/0	2/5	3/0	3/5	4/0	4/5
0/0	0/6	1/2	1/8	2/4	3/0	3/6	4/2	4/8	5/4
0/0	0/7	1/4	2/1	2/8	3/5	4/2	4/9	5/6	6/3
0/0	0/8	1/6	2/4	3/2	4/0	4/8	5/6	6/4	7/2
0/0	0/9	1/8	2/7	3/6	4/5	5/4	6/3	7/2	8/1

Selected strips (4, 8, 9, 6):

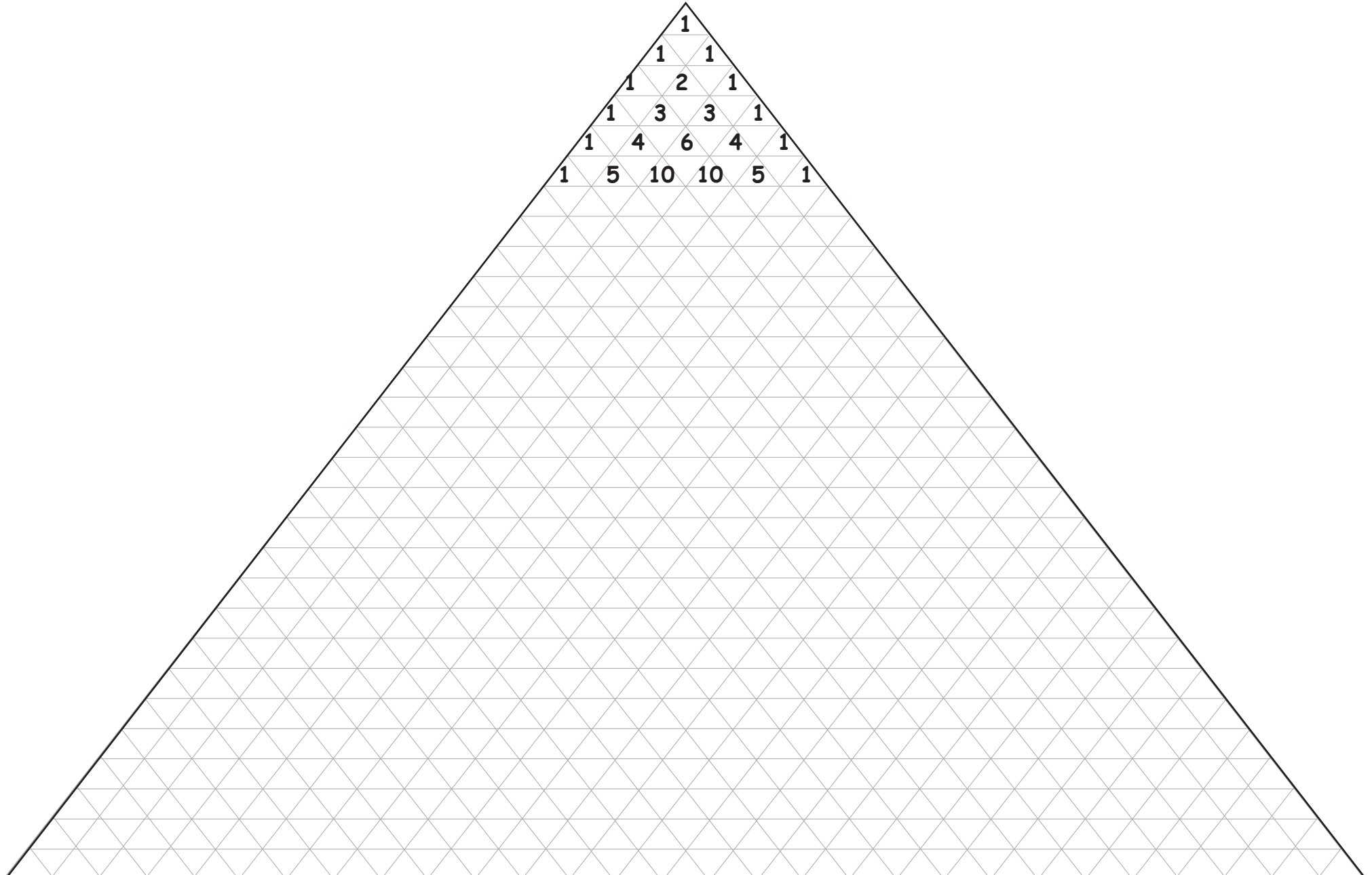| 1	4	8	9	6
2	0/8	1/6	1/8	1/2
3	1/2	2/4	2/7	1/8
4	1/6	3/2	3/6	2/4
5	2/0	4/0	4/5	3/0
6	2/4	4/8	5/4	3/6
7	2/8	5/6	6/3	4/2
8	3/2	6/4	7/2	4/8
9	3/6	7/2	8/1	5/4

Look along the seventh row (you need to count the line with 2, 3 and 4 as the first row).
The units digit is 2, so write this down.
The tens digit is 7 (3 + 4), the hundreds digit is 2 (6 + 6 = 12, write down the 2 and carry the 1), the thousands digit is 4 (8 + 5 + 1 = 14, write down 4, can carry the 1), the ten thousands digit is 3 (2 + 1).
The answer is 34,272.

Pascal's triangle

```
            1
          1   1
        1   2   1
      1   3   3   1
    1   4   6   4   1
  1   5  10  10   5   1
```