

## ORGANIZATION FORMAT OF GANITA SUTRAS

### Step – 16: Ganita Sutra-2

1. Text  
निखिलं नवतश्चरमं दशतः। (*Nikhilam Navataschramam Dasatah*)
2. It being Sutra-2, as such it accepts association of artifice 2.
3. It being second step of organization of ‘Ganita Sutras’, as such it avails features of organisation format of second letter of the text of Ganita Sutra-1, that is, letter ‘क्’ the first varga consonant.
4. With it, Ganita Sutra-2 also gets association of artifice 4 / 4-space / hyper cube 4 format values.
5. The text of Ganita Sutra-2 avails 28 letters range. Here it would be relevant to note that the organisation format of Ganita Sutra-1 avails features of artifice 6, the first perfect number and Ganita Sutra-2 avails features of artifice 28, the second perfect number.
6. Further it also would be relevant to note that NVF (2 Two) = NVF (Four) = NVF (Second).
7. Ganita Sutra-1 is the sequencing Sutra as that it provides sequential ordering working rule ‘one more than before’.
8. The sequencing ordering of Ganita Sutra-1 manifests single digit numerals ranges for all place value systems for organisation of numbers system.
9. Ganita Sutra-2 with its working rule ‘all from nine and last from ten’ avails transition from numerals as a single digit numbers to double (and of higher digits) numbers.

10. The single digit expression for numerals for ten place value system comes to be (1, 2, 3, 4, 5, 6, 7, 8, 9) while double digit expression for them comes to be (01, 02, 03, 04, 05, 06, 07, 08, 09) and, in continuity follows 'ten' which is also the value of the place value system availing nine numerals.
11. This way while Ganita Sutra-1 is a linear sequencing arrangement for numerical values of artifices of numbers, Ganita Sutra-2 provides a transition therefrom for re-organization for the said linear sequencing format into place value arrangement for them.
12. One may have a pause here and permit the transcending mind to be face to face with the features of the working rule of Ganita Sutra-2 providing a focus upon ten place value system.
13. The feature of ten place value system being focus is that 9 is the biggest numeral of the system and ten is the place value of the system.
14. It would be relevant to note that  $10-9=1$  and further as that 01, 10 constitute a reflection pair of artifices as here digits swap their places.
15. It also would be relevant to note that 01, 10 is the first reflection pair of arrangement of 01 to 99 range of double digit numbers of ten place value system along  $9 \times 11$  matrix format of 9 columns and 11 rows.
16. One may have a pause here and permit the transcending mind to comprehend and imbibe the organizing feature of double digit numbers of ten place value system along  $9 \times 11$  matrix format as that  $9 \times 11$  permits re-organisation as  $(10-1) \times (10+1)$ .
17. That Ganita Sutra-2 as stands supplemented by Ganita Upsutra-1, it shall be bringing into the proportionality symmetry rule of features 'to follow the form as it is framed' 'आनुरूप्येण' (Anurupyena) shall be manifesting a augmented rule for all place value systems. In its generality, for n place value system, the double digit numbers thereof shall be permitting their re-organization along  $(n-1) \times (n + 1)$ , matrix format.

18. It would be a blissful exercise to chase organization of double digit numbers of ten place value system along 9 x 11 format and to comprehend and imbibe the specific features of its reflection pairs and their re-organization in upper and lower parts of the matrix.

19. One may visit the following tabulation for pointed attention

Tables of ten-place value format

01	02	03	04	05	06	07	08	09
10	(11)	12	13	14	15	16	17	18
19	20	21	(22)	23	24	25	26	27
28	29	30	31	32	(33)	34	35	36
37	38	39	40	41	42	43	(44)	45
46	47	48	49	50	51	52	53	54
(55)	56	57	58	59	60	61	62	63
64	65	(66)	67	68	69	70	71	72
73	74	75	76	(77)	78	79	80	81
82	83	84	85	86	87	(88)	89	90
91	92	93	94	95	96	97	98	(99)

20. The coordination arrangement of artifices of double digit numbers of nine place value system, as above, may be availed for their chase of reflection pairs organization format:

Tables of nine-place value format

01	02	03	04	05	06	07	08
10	(11)	12	13	14	15	16	17
18	20	21	(22)	23	24	25	26
27	28	30	31	32	(33)	34	35
36	37	38	40	41	42	43	(44)
45	46	47	48	50	51	52	53
54	(55)	56	57	58	60	61	62
63	64	65	(66)	67	68	70	71
72	73	74	75	76	(77)	78	80
81	82	83	84	85	86	87	(88)

100

21. Likewise, one may chase the organization formats for other place values, with their coordination arrangements of artifices for double digit being as follows:

Table-eight place value

01	02	03	04	05	06	07
10	11	12	13	14	15	16
17	20	21	22	23	24	25
26	27	30	31	32	33	34
35	36	37	40	41	42	43
44	45	46	47	50	51	52
53	54	55	56	57	60	61
62	63	64	65	66	67	70
71	72	73	74	75	76	77
						100

Table of seven-place value

01	02	03	04	05	06
10	11	12	13	14	15
16	20	21	22	23	24
25	26	30	31	32	33
34	35	36	40	41	42
43	44	45	46	50	51
52	53	54	55	56	60
61	62	63	64	65	66
					100

Table of six-place value

01	02	03	04	05
10	11	12	13	14
15	20	21	22	23
24	25	30	31	32
33	34	35	40	41
42	43	44	45	50
51	52	53	54	55
				100

Table of five place value

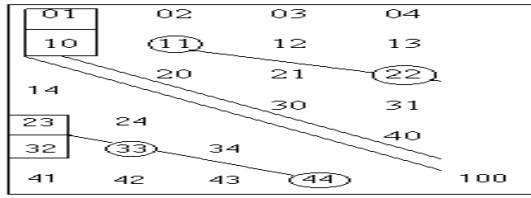


Table of four place value

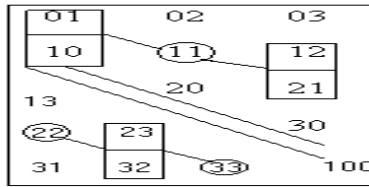


Table of three place value

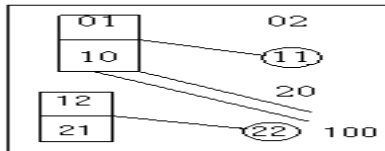
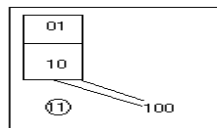


Table of two place value



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