
Phase 8

VALUES (Axioms & Postulates) OF VEDIC GANITA SUTRAS

Phase 8.5

Madhya Vartani (मध्य वर्त्तनि) Sequential progression at middle

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Abstract

First three letters of 16 Ganita Sutras, $3 \times 16 = 48$, is parallel with $6 \times 4 \times 2$ value of 6-space dimensional frame. Likewise end three letters of 16 Ganita Sutras, $3 \times 16 = 48$, as well is parallel with $6 \times 4 \times 2$ 6-space dimensional frame. 7-space origin of 6-space, splits and organizes, as a pair of 6-space domains of half units. Hyper cube 6 is of four folds (4, 5, 6, 7) of summation value '22'. Hyper cube 7 is of four folds (5, 6, 7, 8) of summation value 26. The middle letters are '26' in number. The value $48 = 22 + 26$. Hereunder are being tabulated a set of organization data features of text of Ganita Sutras, with a focus upon Madhya Vartani (मध्य वर्त्तनि) / Sequential progression at middle. This sequential progression at the middle is of the format features of manifestation of solid order 5-space within spatial order 4-space. Brahmand Mahapuran is the 18th culmination reach Puranas. Number value 18 is parallel with summation value of four folds of hyper cube 5 in 4-space being (3, 4, 5), a solid order of reach of transcendental (5-space) domain. Notes about some features of number value 3 and triples are being specified below table 7. Numbers range (1, 2, 3, 4, 5, 6, 7, 8, 9, 10) is a set up of last triple (8, 9, 10) of composite numbers, while first triple (1, 2, 3) is a set up of non composite numbers. Middle quadruple (4, 5, 6, 7) is parallel with Sathapatya of four folds of hyper cube 6. 3-space is of 7 geometries set up of seven versions of hyper cube 3. The formulation of number value 3, namely (Sapt) is of TCV value $(14) = 7 + 7$.

Tables

1. End letter (s) of Sutras
2. End two letters of Sutras
3. End three letters of Sutras
4. Middle letter / pair of letters of Sutras
5. 4-space of spatial order
6. Consecutive Numbers triples (N, N + 1, N + 2)
7. 5-space of solid order
8. Notes about different features of number value 3

Table – 1

End letter (s) of Sutras

C0 = Sutras Serial number, C1 = End letter of the Sutra

C2 = TCV of Sutra, C3 = Total TCV

C0	C1	C2	C3
1	अ	1	1
2	:	13	14
3	म्	9	23
4	त्	4	27
5	ए	6	33
6	त्	4	37
7	म्	9	46
8	म्	9	55

C0	C1	C2	C3
9	म्	9	64
10	म्	9	73
11	:	13	86
12	अ	1	87
13	म्	9	96
14	अ	1	97
15	:	13	110
16	:	13	123

Table – 2

End two letters of Sutras

C0 = Sutras Serial number, C1 = End two letters of the Sutra

C2 = TCV of Sutra, C3 = Total TCV

C0	C1	C2	C3
1	प् अ	7 + 1=8	8
2	अ :	1 + 13=14	22
3	आ म्	2 + 9=11	33
4	ए त्	6 + 4=10	43
5	य् ए	1 + 6=7	50
6	अ त्	1 + 4=5	55
7	आ म्	2 + 9=11	66
8	आ म्	2 + 9=11	77

C0			
9	आ म्	2 + 9=11	88
10	अ म्	1 + 9=10	98
11	इ :	2 + 13=15	113
12	प् अ	7 + 1=8	121
13	अ म्	1 + 9=10	131
14	प् अ	7 + 1=8	139
15	अ :	1 + 13=14	153
16	अ :	1 + 13=14	167

Table – 3

End three letters of Sutras

C0 = Sutras Serial number, C1 = End three letters of the Sutra

C2 = TCV of Sutra, C3 = Total TCV

C0	C1	C2	C3
1	ए ण अ	6 + 7 + 1=14	14
2	श् अ :	2 + 1 + 13=16	30
3	य् आ म्	1 + 2 + 9=12	42
4	य् ए त्	1 + 6 + 4=11	53
5	च् य ए	2 + 1 + 6=9	62
6	य् अ त्	1 + 1 + 4=6	68
7	भ् आ म्	8 + 2 + 9=19	87
8	भ् आ म्	8 + 2 + 9=19	106

C0			
9	भ् आ म्	8 + 2 + 9=19	125
10	न् अ म्	8 + 1 + 9=18	143
11	ट् इ :	3 + 2 + 13=18	161
12	ए ण अ	6 + 7 + 1=14	175
13	त् अ म्	4 + 1 + 9=14	189
14	ए ण अ	6 + 7 + 1=14	203
15	य् अ :	1 + 1 + 13=15	218
16	य् अ :	1 + 1 + 13=15	233

Table – 4

Middle letter / pair of letters of Sutras

C0 = Sutras Serial number, C1 = End letter of the Sutra

C2 = TCV of Sutra, C3 = Total TCV

C0	L	C1	C2	C3
1	16	न् अ	8 + 1=9	9
2	28	श् च्	2+2=4	13
3	15	अ	1	14
4	17	य्	1	15
5	20	अ स्	1+3=4	19
6	20	न्	8	27
7	24	अ व्	1+7=8	35
8	16	र् अ	3+1=4	39

C0				
9	16	ल् अ	5+1=6	45
10	9	ट्	6	51
11	14	अ स्	1+3=4	55
12	20	ए न्	6+8=14	69
13	19	अ	1	70
14	17	न्	8	78
15	16	अ म्	1+9=10	88
16	16	अ म्	1+9=10	98

Table – 5

4-space of spatial order

4-space fold, 2-space dimension

(4, 2)

Four fold creation

(N + 1, N + 2, N + 3, N + 4)

N = 0

(1, 2, 3, 4)

N = 1

(2, 3, 4, 5)

Numbers range 0 to 10
C1= range C2 = middle of range,
C3 = (N, N+1, N+2); Range and its middle,
C4 = N + (N+2) = 2 (N+1);

C1	C2	C3	C4	C4
0 & 1	½	0, ½, 1	$\frac{0}{2}, \frac{1}{2}, \frac{2}{2}$	0+2=2 x 1
1 & 2	1 ½	1, 1 ½, 2	$\frac{2}{2}, \frac{3}{2}, \frac{4}{2}$	2+4 = 2 x 3
2 & 3	2 ½	2, 2 ½, 3	$\frac{4}{2}, \frac{5}{2}, \frac{6}{2}$	4+6 = 2 x 5
3 & 4	3 ½	3, 3 ½, 4	$\frac{6}{2}, \frac{7}{2}, \frac{8}{2}$	6+8 = 2 x 7
4 & 5	4 ½	4, 4 ½, 5	$\frac{8}{2}, \frac{9}{2}, \frac{10}{2}$	8+10 =2 x 9
5 & 6	5 ½	5, 5 ½, 6	$\frac{10}{2}, \frac{11}{2}, \frac{12}{2}$	10+12 =2 x 11
6 & 7	6 ½	6, 6 ½, 7	$\frac{12}{2}, \frac{13}{2}, \frac{14}{2}$	12+14 =2 x 13
7 & 8	7 ½	7, 7 ½, 8	$\frac{14}{2}, \frac{15}{2}, \frac{16}{2}$	14+16 =2 x 15
8 & 9	8 ½	8, 8 ½, 9	$\frac{16}{2}, \frac{17}{2}, \frac{18}{2}$	16+18 =2 x 17
9 & 10	9 ½	9, 9 ½, 10	$\frac{18}{2}, \frac{19}{2}, \frac{20}{2}$	18+20 =2 x 19

Table – 6

Consecutive Numbers triples
(N, N + 1, N + 2)

$$C4 = \left(\frac{N}{M} + \frac{N+2}{M} = 2 \times \frac{N+1}{M} \right)$$

$$M = 1, 2, 3, \dots,$$

$$C0 / N = 1, C1 / M = 1, C2 / M = 2, C3 / M = 3,$$

$$C4 = \left(\frac{N}{M} + \frac{N+2}{M} = 2 \times \frac{N+1}{M} \right)$$

Table
N = 1,

C0	C1	C2	C3
(1, 2, 3)	$\frac{1}{1}, \frac{2}{1}, \frac{3}{1},$	$\frac{1}{2}, \frac{2}{2}, \frac{3}{2},$	$\frac{1}{3}, \frac{2}{3}, \frac{3}{3},$

Table
N = 2,

C0	C1	C2	C3
(2, 3, 4)	$\frac{2}{1}, \frac{3}{1}, \frac{4}{1},$	$\frac{2}{2}, \frac{3}{2}, \frac{4}{2},$	$\frac{2}{3}, \frac{3}{3}, \frac{4}{3},$

Table
N = 3,

C0	C1	C2	C3
(3, 4, 5)	$\frac{3}{1}, \frac{4}{1}, \frac{5}{1},$	$\frac{3}{2}, \frac{4}{2}, \frac{5}{2},$	$\frac{3}{3}, \frac{4}{3}, \frac{5}{3},$

Table
N = N,

C0	C1	C2	C3
(N, N+1, N +2)	$\frac{N}{1}, \frac{N+1}{1}, \frac{N+2}{1},$	$\frac{N}{2}, \frac{N+1}{2}, \frac{N+2}{2},$	$\frac{N}{3}, \frac{N+1}{3}, \frac{N+2}{3},$

Table 7

5-space of solid order

-Hyper cube 5

(2, 3, 4, 5)

Middle of middle

$$\left(0, \frac{1}{3}, \frac{1}{2}, \frac{2}{3}, 1\right)$$

$$\left(0, \frac{1}{2}, 1\right)$$

C1= range C2 = middle of range, C3= (N, N+1, N+2); Range and its middle, C4 =

C1	C2	C3	C4	C5	C6
0 & 1	$\frac{1}{2}$	0, $\frac{1}{2}$, 1	$0, \frac{1}{3}, \frac{1}{2}, \frac{2}{3}, 1$	$\frac{0}{6}, \frac{2}{6}, \frac{3}{6}, \frac{6}{6}, \frac{6}{6}$	(2, 3, 6) श्र, स्र, ष्र
1 & 2	$1 \frac{1}{2}$	1, $1 \frac{1}{2}$, 2	$1, \frac{4}{3}, \frac{3}{2}, \frac{5}{3}, 2$	$\frac{6}{6}, \frac{8}{6}, \frac{9}{6}, \frac{10}{6}, \frac{12}{6}$	(8, 9, 10)*
2 & 3	$2 \frac{1}{2}$	2, $2 \frac{1}{2}$, 3	$2, \frac{7}{3}, \frac{5}{2}, \frac{8}{3}, 3$	$\frac{12}{6}, \frac{14}{6}, \frac{15}{6}, \frac{16}{6},$ $\frac{18}{6}$	(14, 15, 16)
3 & 4	$3 \frac{1}{2}$	3, $3 \frac{1}{2}$, 4	$3, \frac{10}{3}, \frac{7}{2}, \frac{11}{3}, 4$	$\frac{18}{6}, \frac{20}{6}, \frac{21}{6}, \frac{22}{6},$ $\frac{24}{6}$	(20, 21, 22)
4 & 5	$4 \frac{1}{2}$	4, $4 \frac{1}{2}$, 5	$4, \frac{13}{3}, \frac{9}{2}, \frac{14}{3}, 5$	$\frac{24}{6}, \frac{26}{6}, \frac{27}{6}, \frac{28}{6},$ $\frac{30}{6}$	(26, 27, 28)
5 & 6	$5 \frac{1}{2}$	5, $5 \frac{1}{2}$, 6	$5, \frac{16}{3}, \frac{11}{2}, \frac{17}{3},$ 6	$\frac{30}{6}, \frac{32}{6}, \frac{33}{6}, \frac{34}{6},$ $\frac{36}{6}$	(32, 33, 34)
6 & 7	$6 \frac{1}{2}$	6, $6 \frac{1}{2}$, 7	$6, \frac{19}{3}, \frac{13}{2}, \frac{20}{3},$ 7	$\frac{36}{6}, \frac{38}{6}, \frac{39}{6}, \frac{40}{6},$ $\frac{42}{6}$	(38, 39, 40)

7 & 8	7 ½	7, 7 ½, 8	7, $\frac{22}{3}$, $\frac{15}{2}$, $\frac{23}{3}$, 8	$\frac{42}{6}$, $\frac{44}{6}$, $\frac{45}{6}$, $\frac{46}{6}$, $\frac{48}{6}$,	(44, 45, 46)

8 & 9	8 ½	8, 8 ½, 9	8, $\frac{25}{3}$, $\frac{18}{2}$, $\frac{26}{3}$, 9	$\frac{48}{6}$, $\frac{50}{6}$, $\frac{54}{6}$, $\frac{52}{6}$, $\frac{54}{6}$,	(50, 51, 52)
9 & 10	9 ½	9, 9 ½, 10	9, $\frac{28}{3}$, $\frac{20}{2}$, $\frac{29}{3}$, 10	$\frac{54}{6}$, $\frac{56}{6}$, $\frac{60}{6}$, $\frac{58}{6}$, $\frac{60}{6}$,	(56, 57, 58)

* Brahmmand Puran Chapter 7, Loknirman Varnan. Shaloka 104

द्विहस्तः स्रोतसां श्रेष्ठं कुमारीपुरम् तीन् । हस्तस्रोतो दशश्रेष्ठो नवहस्तोष्ट एव
च । ७.१.१०४

दो हाथ स्रोतों का कुमारीपुर श्रेष्ठ होता है तथा दश नौ और आठ हाथ का श्री श्रेष्ठ
होता है । १०४

The moats two Hastas in breadth are excellent in the case of
Kumaripura. The total breadth of the current of water in (the moa) may
be eight, nine or ten.

TCV (कुमारीपुरी) = 22 + 15 = 37 = 18 + 19 = H5 + h5

TCV (पुर) = 12; TCV (पुरी) = 15.

D5 = (5, 3, 3, 1) = 12

'12' as dimension leads to '15' as origin'.

8. Notes about different features of number value 3 and triples

Ganita Sutras and Upsutras text (GS text) is a composition of 519 expressed letters and 1 unexpressed letter (**ॡ**). Of these, only distinct letters are 36. The placement values numbers range is 1 to 16. Of these numbers 1 to 9, are designated as (मूल अङ्क / Mool Ank / Basis base numbers) and their Sathapatya (Geometric formats) are of 1-space to 9-space. The representative regular bodies of 1-space to 6-space (H1 to H9). Hyper cube 8 is of 17 versions and are respectively representative regular bodies of 1 to 17 geometries of 8-space. Nine-space is origin of 8-space.

First four letters of Ganita Sutra 1 are distinct letters

- i. (ए / sixth vowel of frequency occurrence 22, and is summation value of four folds (4, 5, 6, 7) of hyper cube 6.
- ii. क् / first consonant of frequency occurrence 13, with 13 versions of Hyper cube 6 being the representative regular bodies 13 geometries of 6-space.
- iii. आ / elongated first vowel of frequency occurrence 27 and is summation value of four folds (6, 6 ½, 7, 7 ½) of hyper cube 7. Seven-space is origin of 6-space. H7 + h7 is the Sathapatya of origin of 6-space.
- iv. घ् / fourth letter of fourth row of varga consonants of frequency occurrence 2, and is summation value of four folds (-1, 0, 1, 2) of Hyper cube 1; manifestation within spatial order 4-space, being creative (4-space) dimension of 6-space. The spatial order manifests full unit and half unit bodies. '2 as 1' and '1 as 2' lead to '½' as the working unit manifesting gaps bridging sequence of values (½, 1 ½, 2 ½, 3 ½ ---). These sequential values are respectively of placement in between the sequence of values (0, 1, 2, 3, -----). Thereby emerges an integrated range of values : (0, ½, 1, 1½, 2, 2½, 3, 3 ½, 4, 4 ½, 5, 5½, 6, 6 ½, ---).

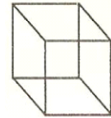
Third letter of text

- i. (आ) is the third letter of GS Text.
- ii. TCV (आ) = 2
- iii. (आ) = (अ) + (अ) = {(1, 1)}
- iv. (1) is of Sathapatya of linear (order) axis.

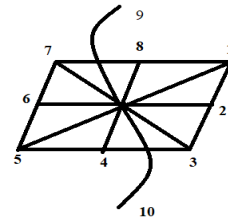
- v. (1, 1) is of Sathapatya of a pair of linear axis.
- vi. Synthesis value of a pair of linear axis is '3'.
- vii. Parallel with it is the placement of third letter of text.
- viii. '3' follows '1' and '2'.
- ix. $3 = 1 + 1 + 1$.

x. '3' is of Sathapatya (Geometric format) '3-space'.

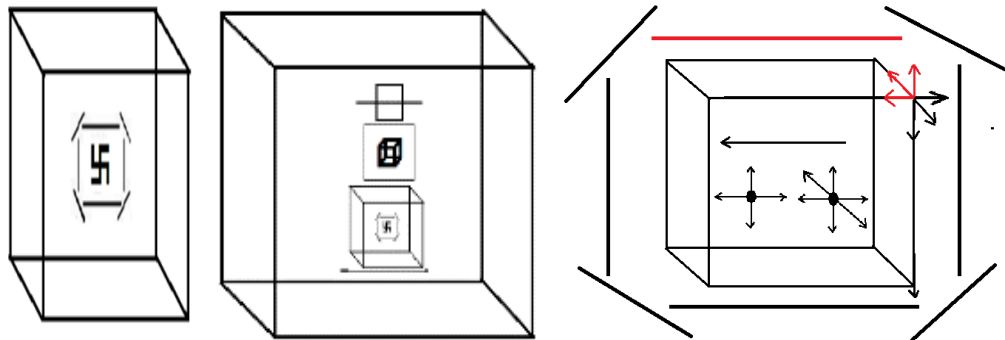
xi. Hyper cube 3 is the representative regular body of 3-space.



xii. Four folds of Hyper cube 3 are (1, 2, 3, 4) of summation value of '10'. Parallel to it is Sathapatya (geometric format) of ten directions (directional frame).



xiii. Sathapatya of origin is 3-space is 4-space. Domain of Hyper cube 3



is

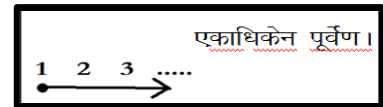
manifested content of 3-space. Boundary fold of Hyper cube 3 is manifested content of 2-space. Dimension fold of Hyper cube 3 is manifested content of 1-space. 3-space domain is swapped by Sathapatya measuring rod, (H1, H2, H3, a synthetic set up of representative regular bodies of 1, 2 and 3 spaces). 3-space domain within 4-space domain of working unit '1/2' has a split of pair of orientations for linear, spatial and solid dimensional frames.

Three as Triple

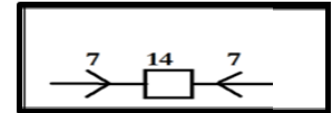
- i. $3 = 1 + 1 + 1$
- ii. $3 = [(1, 1, 1)]$
- iii. $3 = [1, 2, 3]$
- iv. Triple axes
- v. Triple linear axes synthesis value $(1, 1, 1) = 6$.
- vi. Triple spatial axes synthesis value $(2, 2, 2) = 6$.
- vii. Triple Solid axes synthesis value $(3, 3, 3) = 6$.
- viii. Triple n order axes synthesis value $(n, n, n) = 6$
- ix. Triple $[(1, 2, 3)]$ makes six arrangements
(a) 1, 2, 3 (b) 1, 3, 2 (c) 2, 3, 1 (d) 2, 1, 3 (e) 3, 2, 1 (f) 3, 1, 2
- x. '3' is the biggest prime divisor of '6'.
- xi. $'6' = 1 + 2 + 3 = 1 \times 2 \times 3$
- xii. $'-6' = (-1) + (+2) + (-3) = (-1) \times (+2) \times (-3)$

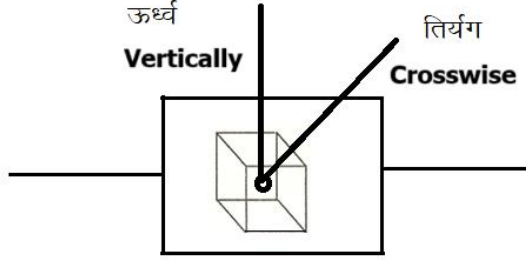
Ganita Sutra 3 'ऊर्ध्वतिर्यग्भ्याम्'

Ganita Sutra 1 'one more than before' / a linear progression (1, 2, 3, ---) is of Sathapatya.



Ganita Sutra 2 'निखिलं नवतश्चरमं दशतः', triple words, composition of (7, 14, 7) letters = 7, 7 + 7, 7 is of Sathapatya of a pair of linear progressions of opposite orientations from pair of end points for reach at the middle.





Formulation (त्रि वि क्रम **Tri Vi Kram**)

TCV (त्रि) = 7, TCV (वि) = 9, TCV (क्रम) = 13

TCV (त्रि वि) = 7 + 9 = 16;

- (i) Ganita Sutras are 16 in number
- (ii) Ganita Sutra 1 : Ekadhikena Purvena एकाधिकेन पूर्वेण formulation is a composition of 9 + 7 letters.

TCV (त्रि वि क्रम) = 29 = 16 + 13, parallel with the set up of 16 Sutras and 13 Upsutras;

Formulation Aum ओम्

Formulation Aum ओम् is of TCV (ओम्) = 7 + 9 = 16. Letter ओ, the seventh vowel is a synthetic formation of first vowel (अ) and third vowel औ. This split up results into formulation ओम् as a composition of three letters no (i) अ first vowel (ii) ओ third vowel and (iii) म्, the last 25th varga consonant. This triple (अ, ओ म) is of TCV values triple (1, 3, 9) of summation value 1 + 3 + 9 = 13 as such, the formulation (ओम् Aum) is of quadruple Sathapatya (अ, उ, म, ओम्) of Sathapatya values 1, 3, 9, 16 of summation value 29.

Values triple (1, 3, 9) and values quadruple (1, 3, 9, 16)

Values triple (1, 3, 9) is of organization feature ($3^0, 3^1, 3^2$).

Values 16 is of organization feature $16 = 2^4$; parallel with quadruple spatial (2-space) dimensional frame of creator (4) space.

Beginning, End and Middle triple letters of Sutras

Beginning, End and Middle triples of letters of '16' Ganita Sutras are $16 \times 9 = 144$. The remaining letters of text of '16' Ganita Sutras are : $283 - 144 = 139$; a set up of triple digits (i) 1 (ii) 3 and (iii) 9.

Formulation (एक Ek) / One)

Formulation pair (एक Ek) / One) and (त्रय Triye) / Three) is of equal TCV values pair. It gives rise to value '9' for value '3'. As such, as 9 space, is Sathapatya of '19 geometries'; parallel with TCV (मध्य Madhya / Middle). Formulation एकोविंशति Ekovinshanti / nineteen is of TCV value (एकोविंशति) = 50; as of middle placement of (ब्रह्मा Brahma / creator) TCV value 29 and creator / creation and (ब्रह्म Brahm / creator's eternity) TCV value 29 makes TCV values triple (29, 50, 28) parallel with TCV values triple of text of Ganita Sutra 2 (निखिलं नवतश्चरमं दशतः) ; TCV (निखिलं) = 29, TCV (नवतश्चरमं) = 50 and TCV (दशतः) = 28.

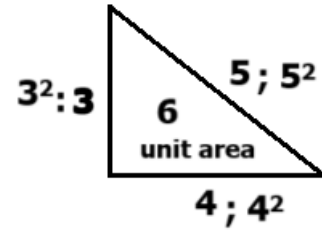
Values pair (9, 16)

Value '9' is of organization feature 3^2 .

Value '6' is of organization feature 4^2 .

Value 25 is of organization feature $5^2 = 3^2 + 4^2$

Value triple (3, 4, 5) is of Sathapatya of triangular frame for space of six square units and the quadruple (6, 9, 16, 25) of summation value 56, parallel with split spectra of 16 space content (D16).



Triple place value (7, 10, 13) formats

Double digit numbers '18' of ten place value system along

- i. Seven place value system is of set up '15' for ten place value system
- ii. Thirteen place value system is of set up of '21' for ten place value system.

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