

Phase 12  
**Vedas and Vedic Ganita Sutras & Upsutras**

12.5

**सूत्रार्थ शून्यं अव्यव भाव विभाग**  
*Sutras meaning (s) and essence of*  
*Constituents at zero state*

**Abstract**

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2. Composition Data of texts of Ganita Sutra 7 and Upsutra 7
3. Cyclic phases of formulations 'Sankalan संकलन and Vyavakalan व्यवकलन'
4. सूत्रार्थ शून्यं अव्यव भाव विभाग *Sutras meaning (s) and essence of constituents at zero state*
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**Conclusion**

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 constituents at zero state*

**Abstract**

1. Vedic Mathematics accepts dimensional synthesis operation, as third operation, in addition to the pair of operations of modern mathematics for Sutras meanings essence (Sutrarh bhav सूत्रार्थ भाव), the text formulations are to be approached, in addition to others, with reference and focus upon:
2. In addition to, formulations may it be letters / syllables / Pada, are to be approached as 'nouns and verbs', in respect of such formulations which are Dhatu (धातु), illustratively
 

(i) सूत्र	(ii) अर्थ	(iii) अंङ्क
and others similar situated.		
3. Sutra सूत्र, वेष्टने । विमोचन इत्यन्ये । चुरादिगण ।  
 चुरादिगण  
 अर्थ, उपयाच्यायाम् । चुरादिगण ।  
 चुरादिगण  
 अंङ्क पदे लक्षणे च । चुरादिगण ।  
 अंङ्क पदे लक्षणे च । चुरादिगण ।  
 गण संख्याने । चुरादिगण ।  
 स्वर आक्षेपे । चुरादिगण ।  
 कल गल, आस्वादने चुरादिगण ।  
 चल विलसने तुदादिगण ।
4. Geeta Chapter 6, in particular preserves the way Dhayan (ध्यान) is to be upon the Sathapatya of (ओम्).
5. The sequential phase wise reach from domain of manifested creations to transcendental domain, self referral domain, unity state is to be respected by Sadkhas fulfilled with intensity of urge to be parallel with Sathapatya and values formats of Ganita Sutras mathematics as basis base of Vedic Mathematics surviving Vedic knowledge systems for organization as scriptures preserving knowledge and enlightenment both.

## 1

## Vedic Ganita Sutra 7 and Upsutra 7

In integrated format of Sutras and Upsutras, Sutra 7 is at 13<sup>th</sup> placement,

## Text of Ganita Sutra 7

‘संकलनव्यवकलनाभ्याम् ।’

## Sankalanvyavakalanbhayam

(1) Sankalan संकलन and (2) Vyavakalan व्यवकलन are dual, and this dual like all other duals, third fourth and fifth inflexional terminations is ‘भ्याम् Bhayam ’

विभक्तियों के रूप (Inflexional Terminations)			
विभक्ति	एकवचन (Singular)	द्विवचन (Dual)	बहुवचन (Plural)
प्रथम (1st)	अः (सु)	औ	आः (जसु)
द्वितीया (2nd)	अम्	औद्	आः (शसु)
तृतीया (3rd)	आ (टा)	भ्याम्	भिः (भिसु)
चतुर्थी (4th)	ए (डे)	भ्याम्	भ्यः (भ्यसु)
पंचमी (5th)	अः (इसि)	भ्याम्	”
षष्ठी (6th)	अः (इसु)	आः (औसु)	आम्
सप्तमी (7th)	इ (डि)	”	इ (सुप्)

विषयाणां सूची	
विषयः	पृष्ठम्
(2) धनर्णसंकलनम्	२-६
(3) धनर्णव्यवकलनम्	७-८
(7) खसंकलनव्यवकलनम्	१३-१६
(13) करणीसंकलनव्यवकलनम्	२४-२७

Bhaskaracharya Beejganitam contents topics at serial number 2, 3, 7 and 16 are titled as about formulations

- (1) Sankalan संकलन
- (2) Vyavakalan व्यवकलन
- (3) Sankalanvyavakalanbhayam संकलनव्यवकलनाभ्याम् ।
- (4) Sankalanvyavakalanbhayam संकलनव्यवकलनाभ्याम् ।

The point of attention here is that text of Ganita Sutra 7, as such has been to the knowledge of centuries B.C. The Meanings and Essence of it comprehended and applied by scholars of the Time, is not a matter of concern at this stage Bhaskaracharyas Beejganitam, as per its content index at serial number 6, 16 and 18, Varga ‘वर्ग’ / square’ are being worked out.

Ganita Upsutra 7 which is at serial number 14, immediately after placement of Ganita Sutra 7 at serial number 13, of integrated format of Ganita Sutras and Upsutras, is a text formulation :

14. Text Ganita Sutra 7

‘संकलनव्यवकलनाभ्याम् ।’

13. Text Ganita Upsutra 7

‘यावदूनं तावदूनीकृत्य वर्गं च योजयेत् ।’

## 2

**Composition Data of texts of  
Ganita Sutra 7 and Upsutra 7**  
W = Words, S = Syllables, L = Letters,

Sutra	W	S	L	TCV	VCV
GS 7	1	10	24	85	29
GU 7	5	16	36	139	64
Total	6	26	60	224	93

## 3

**Cyclic phases of formulations**  
‘Sankalan संकलन and Vyavakalan व्यवकलन’

**Sankalan संकलन**

Four syllables placement values

i	13	2	6	8	29	29
ii	11	4	2	5	22	51
iii	7	2	3	6	18	69
iv	5	1	3	1	10	79
v	4	2	2	4	12	91
vi	2	0	2	0	4	95
vii	2	2	2	2	8	103
viii	0	0	0	0	0	103

at viiiith phase is attained ‘zero’ value. And as such there is a cyclic order of viii. Total value of all viii phases is ‘103 = 31 + 72’, Cube and its origin; and is parallel with TCV (hypercube) = 103

**Vyavakalan व्यवकलन’**

Four syllables placement values

i	9	8	2	6	9	34	34
ii	1	6	4	3	0	14	48
iii	5	2	1	3	1	12	60
iv	3	1	2	2	4	12	72
v	2	1	0	2	1	6	78
vi	1	1	2	1	1	6	84
vii	0	1	1	0	0	2	86

viii	1	0	1	0	0	2	88
ix	1	1	1	0	1	4	92
x	0	0	1	1	0	2	94
xi	0	1	0	1	0	2	96
xii	1	1	1	1	0	4	100
xiii	0	0	0	1	1	2	102
xiv	0	0	1	0	1	2	104
xv	0	1	1	1	1	4	108
xvi	1	0	0	0	1	2	110
xvii	1	0	0	1	0	2	112
xviii	1	0	1	1	1	4	116
xix	1	1	0	0	0	2	118

xx – xxxiv, fifteen phases of value 40 and reach of phase 19

Base phases 19, phases value 118. Frequency phases 15, phases value 40. Total phases 34 total value 158. There is xv phases cyclic repetition

#### 4

#### सूत्रार्थ शून्य अव्यव भाव विभाग *Sutras meaning (s) and essence of constituents at zero state*

TCV (सूत्रार्थ) = TCV (सूत्र) + TCV (अर्थ) = 15 + 9 = 24

TCV (स्वर) = 15, there are 9 vowels (स्वर).

TCV 24 is TCV (पुरुष / Pursha).

Value 24 as 6 x 4 is parallel with creative (4-space) dimensional range of 6 creative dimensions of 6-space.

TCV (शून्यम्) = 27 and TCV (अव्यव) = 19.

TCV (शून्यमाव्यव) = 46 = 23 + 23 = h6 + h6 further (46, 48) is of the format of (dimension, domain).

TCV 23 = TCV (जन्म / birth) = TCV (केन्द्र / center / origin seat within domain).

The reach within domain for approach to Kendra is of four sequential phases.

- (1) सालोक्य Salokeye / within same domain. TCV (सालोक्य) = 20
- (2) सामीप्य Samepeye / nearness within domain. TCV (सामीप्य) = 25
- (3) सारूप्य Sarupeye / parallely framed framed form. TCV (सारूप्य) = 21
- (4) सायुज्य Sayujeye / in state of unison at center of the domain. TCV (सायुज्य) = 15

The summation value of TCV values of these four phases and stages of sequential organization in domain for the state of unification at the seat of Kendra = 20 + 25 + 21 + 15 = 81. This is parallel with the meaning essence conclusion of Srimad Bhagwad Geeta (Chapter 17).

**Om Tat Sat iti Nirdesha (16 + 9 + 8 + 8 + 40) = 81**

Further it is parallel with verb (kirya) waranad (वर्ण / Letter)

### 365 Churaadigana

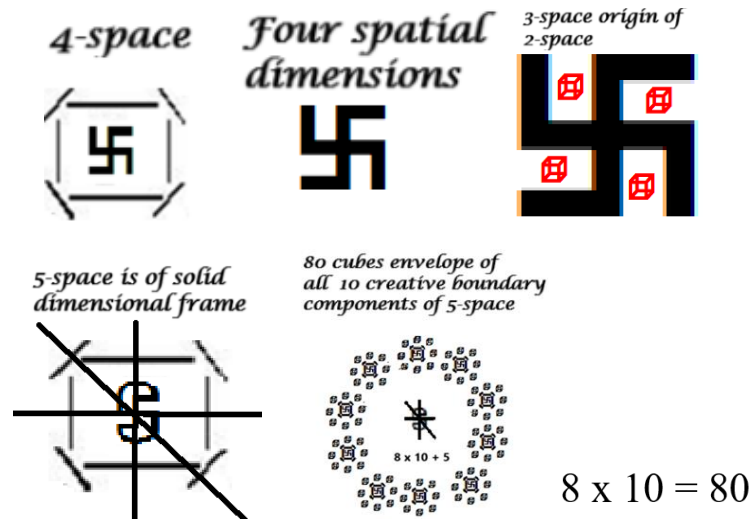
वर्ण, वर्णक्रियाविस्तारगुणवचनेषु  
वर्ण - क्रिया - विस्तार - गुण - वचन

वर्ण	TCV (वर्ण) = 18	18
क्रिया	TCV (क्रिया) = 7	25
विस्तार	TCV (विस्तार) = 22	47
गुण	TCV (गुण) = 14	61
वचन	TCV (वचन) = 20	81

## 5

## Value 81

- (1)  $81 = 3^4$ ,
- (2) 3-space is origin of 2-space,
- (3) Creator's (4-space) is of spatial order and quadruple spatial dimensions constitutes its dimensional frame



## 6

## Antakaran (अन्तःकरण)

Man (मन), Budhi (बुद्धि), Chit (चित्), Ahankar (अहङ्कार) are four folds of Antakaran (अन्तःकरण) / ultimate support of existence phenomenon of Pursha / withn human frame.

TCV (मन Man / heart) = 19	19	<p>80 cubes envelope of all 10 creative boundary components of 5-space</p>
TCV (बुद्धि Budhi / intelligence) = 25	44	
TCV (चित् Chit / consciousness) = 13	57	
TCV (अहङ्कार Ahankar/ ego)= 23	80	

Ultimate support of existence phenomenon of Pursha, in itself is of reach uptill '80', while, by meditation / Dhyan (ध्यान), TCV (ध्यान) = 19 / TCV (मन), followed by being carried by a chariot (Rath रथ) driven by Sarthi TCV (सारथी) = 16 = TCV (ॐ)=16

## 7

### Chariot ride is of reach uptill 'Door' of palace of Divinity

TCV (ॐ / सारथी) = 16, as dimension is of reach uptill '19' origin.

One beyond that has entry within the palace only with the Grace of palace owner opening the door permitting entry within palace.

TCV (द्वार / dwar / door) = 19 = TCV (मन / mind)

TCV (भुवन / Bhuwan / Palace) = 28 = TCV (ब्रह्म)  
19 + 28 = 47

TCV (भुवनद्वार) = 47 = TCV (ब्रह्मधाम)

Srimad Bhagwad Geeta chapter 1 and chapter 6, both are of shaloks 47 each  
The difference between the number of letters of Ganita Sutras '283' and of Ganita Uputras '236' is 47.

The reach for the spatial dimension (2-space) uptill value 47, is of four steps

$$(i) \quad G_{5}^2 \quad (ii) \quad G_{11}^5 \quad (iii) \quad G_{23}^{11} \quad (iv) \quad G_{47}^{23}$$

The last 47<sup>th</sup> shaloka of chapter 1 of Srimad Bhagwad Geeta, is of state of mind and of its ultimate support in which He, unties the string of Bow, and puts down His Bow and Arrow in untied condition, and sits in the back portion of chariot being driven by Lord Krishna.

एवमुक्त्वार्जुनः संख्ये रथोपस्थ उपाविशत् ।

विसृज्य संशरं चापं शोकसंविग्नमानसः ॥ 47 ॥

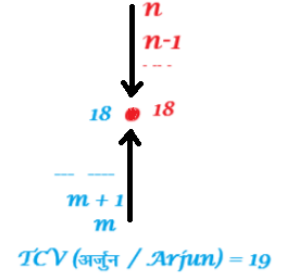


## 8

**Vedic Mathematics – Modern mathematics**

1. Modern mathematics conceives a pair of operations (plus and multiplication) only while Vedic Mathematics approaches with one more operation, i.e. the synthesis of dimensional axes. TCV (कृष्ण / Krishan) = 19

2. Vedic Mathematics have reach, first phase, uptill TCV (शून्य / Sunya / zero) = 18 and it is approached uptill it as sequential increase, as well as sequential decrease, both of a reach at the common zero state.



3. The minimum value 19 and maximum value 19, as a pair of faces of spatial order set up is there and is parallel with the format of a plane in 3-space being of a pair of faces. Further  $G_9^4$  and  $G_{19}^9$  as permissible steps within spatial order 4-space bring to focus as that  $4 + 9 = 13$  and  $9 + 19 = 28 = 13 + 15$ , are the steps of spatial order characteristics and same are a cut off from the linear order 3-space chase.
4.  $19 = h5$  and  $H10 = 38 = h5 + h5$ . It brings to focus the set up of अर्धद्वार Ardhdwar / half door is a unique set up of spatial order.
5. TCV (अर्धद्वार / Ardhdwar / half door) =  $11 + 19 = 30$ .
6. Value range 1 to 30 is a set up of 60 factors set up.  $60 = 30 + 30$  and on the other hand values range 1 to 28 yields 56 factors set up.
7.  $56 = 28 + 28$  and  $60 = 30 + 30$  is a pair of values (28, 30) of the format of (dimension, domain); a unique set up at the base of Vedic Mathematics operations and of a reach of outer palace and inner palace, both are of equal values. Bhuwan Dwar (भुवनद्वार) =  $28 = TCV$  (ब्रह्मधाम).
8. It is this phenomenon reach domain as it is dimension and reversely, dimension is domain.
9. The dimension fold and domain fold get unified indistinctively.
10. One may have a pause here and and recapitulate as that TCV(एक / one) = TCV (त्रय / three).
11. The value pair  $(1,1) = 3$  is parallel to the format 1-space dimension, 3-space domain)

12. Infinitely long line is circumference of a circle. The circumference of circle and diameter of a circle are interrelatedly of mathematical set ups. Vedic systems availing this have dispensed with 'pie'. Further by working with half circle and quarter circle as of spatial order set up of 4-space have further dispensed with 'i.' and trigonometry (angles values ). It is sequential Ushmana letters (शसषह) of values and Sathapatya of spatial order of 4-space, solid order of 5-space, self referral order of Asht Prakrati and Nav Braham of Ekadash Rudras domain have been successful to attain conditions free mind and reach being uptill door steps of Braham Dhaam, beyond which it is the inherent pull and push virtue of Brahman domain which works of its own for its chase ahead. The values pair (28, 30) is the unique pair where factor ranges 1 to 28 and 1 to 36, duplicate themselves as 56 factors and 60 factors respectively.

## 9

### Values pair (80, 81)

13.  $80 = 8 \times 10$  while  $81 = 9 \times 9$ .
14. Double digit number of 9 place value system are 80 and first triple digit number of 9place value is 81in ten place value system.
15.  $81 + 19 = 100$ . It is this phenomenon of Antakaran being of 80 while the reach uptill the value 81 happens of its own as a phenomenon of origin ‘attracting distracting making a phenomenon of (1) Aakarshan – Vikarshan and Gharshan and Aagharshan.
  
16. TCV (आकर्षण) =  $7 + 15 = 22$                       22
17. TCV (विकर्षण) =  $11 + 15 = 26$                       48
18. TCV (घर्षण) =  $7 + 15 = 22$                       70
19. TCV (आर्ध्षण) =  $8 + 15 = 23$                       93
20. Value 93 accepts re-organization as  $3 \times 31$ .
21. The set up  $3 \times 31$  is the set up  $1 \times 31$ .
22. Value 31 is of Sathapatya : a linear order 3-space.
23. The Value 42 is of Sathapatya spatial order 4-space.
24. Value 53 is of a Sathapatya solid order 5-space.
25. Value 64 is of Sathapatya of Creative order (6-space)
26. The pair of axes (31, 31) synthesize as value 33.

27. The triple axes set up, that way, becomes a set up of  $31 + 33 = 64$  values set up.
28. It is the unique reach of Vedic knowledge system acceptance of third operation i.e. of dimensional synthesis, which is no more conceived and as such is not available to modern mathematics and to mathematics minds of such set up as it is of modern mathematics, conceived and applied only a pair of operations.

## 10

### Dimensional synthesis operation

Axes of same order synthesize and a pair of consecutive dimensional orders, together are of same progressions.

C0 = Dimensional order, C1 = Value of single axes, C2 = Value of pair of axes of same order, C3 = Triple axes of same order, C4 = quadruple axes of same order and so on.

C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
-9	-9	-7	6	30	65	111	168	226	315
-8	-8	-6	6	28	60	102	154	206	288
-7	-7	-5	6	26	55	93	140	196	261
-6	-6	-4	6	24	50	84	126	176	234
-5	-5	-3	6	22	45	75	112	156	207
-4	-4	-2	6	20	40	66	98	136	180
-3	-3	-1	6	18	35	57	84	116	153
-2	-2	0	6	16	30	48	70	96	126
-1	-1	1	6	14	25	39	56	76	99
0	0	2	6	12	20	30	42	56	72
C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
1	1	3	6	10	15	21	28	36	45
2	2	4	6	8	10	12	14	16	18
3	3	5	6	6	5	3	0	-4	-9
4	4	6	6	4	0	-6	-14	-24	-36
5	5	7	6	2	-5	-15	-28	-44	-63
6	6	8	6	0	-10	-24	-42	-64	-90
7	7	9	6	-2	-15	-33	-56	-84	-117
8	8	10	6	-4	-20	-42	-70	-104	-141
9	9	11	6	-6	-25	-51	-84	-124	-168

**Note :-**

1. Sum of synthesis values of single, double, triple and quadruple axes (dimensions) of same order is '20' for every order.
2. Sum of triple axes of same order is '6' in every dimensional order, as is tabulated in column C3.
3. The values of column C4, are values of quadruple axes of same order. And these values are increasing by '2' at every step. '0' order upwards and are decreasing by '2' at every step downward.
4. Sum of quadruple values of quadruple axes of order (-n) and (+n), as in column 4 is '24' for all values of 'n'.
5. Value 24 is of organization 4 x 6.
6. It is parallel with dimensional frame of 6 creative (4-space) dimensions of 6-space.
7. The progression values of columns C4, C5, C6, C7, C8, C9 and onwards as well are increasing / decreasing by values as per the following table

C4	C5	C6	C7	C8	C9	---
2	2+3	2+3+4	2+3+4+5	2+3+4+5+6	2+3+4+5+6+7	---
2	5	9	14	20	27	

**Conclusion**

The Sutras text word formulations are lively within Different Vedic scriptures. Once these stand comprehended and imbibed for their values and the way these values are being availed by different scriptures, it will set the state for specific tabulation of the text of Ganita Sutras and Upsutras.

Here in this write up, pointed attention is with respect to the word formulations and the way these formulations were worked out by well known mathematicians of centuries B.C. and much much before Swami Bharti Krshna Tirthaji Maharaj had undertaken as self imposed duty to interpret Vedic Ganita sutras text, which was just making no sense to others of mindset of known mathematics of 19<sup>th</sup> and 20<sup>th</sup> century A.D.

Infinitely long line is circumference of a circle. The circumference of circle and diameter of a circle are interrelatedly of mathematical set ups. Vedic systems availing this have dispensed with 'pie'. Further by working with half circle and quarter circle as of spatial order set up of 4-space have further dispensed with 'i.' and trigonometry (angles values ). It is sequential Ushmana letters (शसषह) of values and Sathapatya of spatial order of 4-space, solid order of 5-space, self referral order of Asht Prakrati and Nav Braham of Ekadash Rudras domain have been successful to attain conditions free mind and reach being uptill door steps of Braham Dhaam, beyond which it is the inherent pull and push virtue of Brahman domain which works of its own for its chase ahead. The values pair (28, 30) is the unique pair where factor ranges 1 to 28 and 1 to 36, duplicate themselves as 56 factors and 60 factors respectively.

**Dr. S. K. Kapoor**

**July 19, 2025**