

VEDIC ARITHMETIC

Lesson – 2

Translation of

Letters Text of Vedic Ganita Sutra -1 into Numbers and Sathapatya

Vedic Ganita Sutras

Vedic Ganita Sutras and Upsutras text is in Devanagari alphabet as under:

॥ ॐ श्रीः ॥	
VEDIC MATHEMATICS	
OR	
SIXTEEN SIMPLE MATHEMATICAL FORMULAE	
FROM THE VEDAS	
SIXTEEN SŪTRAS AND THEIR COROLLARIES	
Sūtras	Sub-Sūtras or Corollaries
1. एकाधिकेन पूर्वेण <i>Ekādhikena Pūrveṇa</i> (also a corollary)	1. आनुरूप्येण <i>Anurūpyeṇa</i>
2. निखिलं नवतश्चरमं दशतः <i>Nikhilaṁ Navataścara- maṁ Daśataḥ</i>	2. शिष्यते शेषसंज्ञः <i>Śiṣyate Śeṣasamjñāḥ</i>
3. ऊर्ध्वतिर्यग्भ्याम् <i>Urdhva-tiryagbhyām</i>	3. आद्यमाद्येनान्त्यमन्त्येन <i>Ādyamādyenāntya-mantye- na</i>
4. परावर्त्य योजयेत् <i>Parāvartya Yojayet</i>	4. केवलैः सप्तकं गुण्यात् <i>Kevalaiḥ Saptakaṁ Guṇ- yāt</i>
5. शून्यं साम्यसमुच्चये <i>Śūnyaṁ Sāmyasamuccaye</i>	6. वेष्टनम् <i>Veṣṭanam</i>
6. (आनुरूप्ये) शून्यमन्यत् (<i>Anurūpye</i>) <i>Śūnyamanyat</i>	6. यावदूनं तावदूनम् <i>Yāvadūnaṁ Tāvadūnaṁ</i>
7. संकलनव्यवकलनाभ्याम् <i>San̐kalana-vyavakalanā- bhyām</i> (also a corollary)	7. यावदूनं तावदूनीकृत्य वर्गं च योजयेत् <i>Yāvadūnaṁ Tāvadūnī- kr̥tya Vargaṇca Yojayet</i>
8. पुराणपुराणाभ्याम् <i>Pūraṇāpūraṇābhyām</i>	8. अन्त्ययोर्दशकेऽपि <i>Antyayordāśake'pi</i>
9. चलनकलनाभ्याम् <i>Calana-Kalanābhyām</i>	9. अन्त्ययोरेव <i>Antyayoreva</i>

(1a)

	<i>Sūtras</i>		<i>Sub-Sūtras or Corollaries</i>
10.	यावदूनम् <i>Yāvadūnam</i>	10.	समुच्चयगुणितः <i>Samuccayagunītaḥ</i>
11.	व्यष्टिसमष्टिः <i>Vyaṣṭisamaṣṭiḥ</i>	11.	लोपनस्थापनाभ्याम् <i>Lopanasthāpanābhyām</i>
12.	शेषाध्यङ्केन चरमेण <i>Śeṣādyāṅkena Carameṇa</i>	12.	विलोकनम् <i>Vilokanam</i>
13.	सोपान्त्यद्वयमन्त्यम् <i>Sopāntyadvayamantyaṃ</i>	13.	गुणितसमुच्चयः समुच्चयगुणितः <i>Gunītasamuccayaḥ</i> <i>Samuccayagunītaḥ</i>
14.	एकम्वृत्तेन पूर्वेण <i>Ekamvṛttena Pūrveṇa</i>		
15.	गुणितसमुच्चयः <i>Gunītasamuccayaḥ</i>		
16.	गुणकसमुच्चयः <i>Gunakasamuccayaḥ</i>		

[Note—This list has been compiled from stray references in the text—EDITOR.]

Translation of Letters Text एकाधिकेन पूर्वेण of Vedic Ganita Sutra 1 into Numbers :

SN	1	2	3	4	5	6	7	8	9
Letter	ए	क्	आ	ध्	इ	क्	ए	न्	अ
TCV	6	4	2	7	2	4	6	8	1
SN	10	11	12	13	14	15	16		
Letter	प्	ऊ	र्	व्	ए	प्	अ		
TCV	5	6	3	7	6	7	1		

Translation of Numbers Text एकाधिकेन पूर्वेण of Vedic Ganita Sutra 1 into Sathapatya (Geometric Spaces):

SN	1	2	3	4	5	6	7	8	9
Letter	ए	क्	आ	ध्	इ	क्	ए	न्	अ
TCV	6	4	2	7	2	4	6	8	1
Spaces	6s	4s	2s	7s	2s	4s	6s	8s	1s
SN	10	11	12	13	14	15	16		
Letter	प्	ऊ	र्	व्	ए	प्	अ		
TCV	5	6	3	7	6	7	1		
Spaces	5s	6s	3s	7s	6s	7s	1s		

Sathapatya is of three folds, making third, fourth and fifth folds of Devanagari Alphabets, namely:

- (1) Space Content (D_N) of four folds
 $D_N = (N, N-2, N-2, N-4)$ of summation value $(4N-8)$
- (2) Full Unit Body (Hypercube – N/H_N), of four folds
 $H_N = (N-2, N-1, N, N+1)$ of summation value $(4N-2)$
- (3) Half Unit Body (Hypercube – N/h_N), of four folds
 $h_N = (N-1, N - \frac{1}{2}, N, N + \frac{1}{2})$ of summation value $(4N-1)$

Translation of Letters Text into numbers and three folds of Sathapatya :

Table of four folds translation of Letters Text एकाधिकेन पूर्वेण

SN	1	2	3	4	5	6	7	8	9
Letter	ए	क्	आ	ध्	इ	क्	ए	न्	अ
TCV	6	4	2	7	2	4	6	8	1
D _N	D ₆	D ₄	D ₂	D ₇	D ₂	D ₄	D ₆	D ₈	D ₁
H _N	H ₆	H ₄	H ₂	H ₇	H ₂	H ₄	H ₆	H ₈	H ₁
h _N	h ₆	h ₄	h ₂	h ₇	h ₂	h ₄	h ₆	h ₈	h ₁
SN	10	11	12	13	14	15	16		
Letter	प्	ऊ	र्	व्	ए	प्	अ		
TCV	5	6	3	7	6	7	1		
D _N	D ₅	D ₆	D ₃	D ₇	D ₆	D ₇	D ₁		
H _N	H ₅	H ₆	H ₃	H ₇	H ₆	H ₇	H ₁		
h _N	h ₅	h ₆	h ₃	h ₇	h ₆	h ₇	h ₁		

Blissful Exercise:

It will be a blissful exercise to translate Letters Text of each Sutra and Upsutra, **Letter Wise** into four folds, namely **Numbers, Space Content, Full Unit Body and Half Unit Bodies** formats.

