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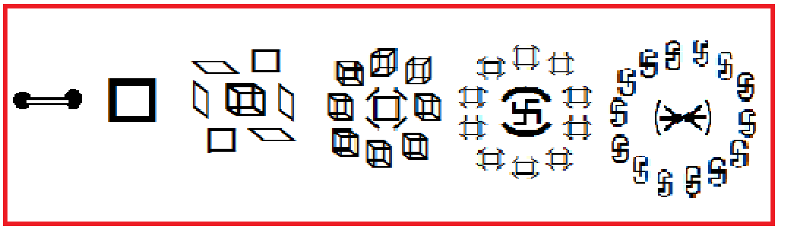
VEDIC MATHEMATICS
&
MODERN MATHEMATICS

SATHAPATYA MEASURING ROD



(HYPER CUBES 1 TO 6)

Ninth Week : Day 1

Dimensional synthesis and splits

1. Dimensional synthesis and split Phenomenon is essentially the Phenomenon of synthesis and splits of dimensions (folds).
2. One may have a pause here and take note that the pair of dimensions of order n (n-space playing the role of dimension) synthesizes (n+2) domain.
3. One may further have a pause here and take note that values wise above rule brings us face to face with the following values equation:
   $n + n – (n-2) = n + 2$
4. One may have a pause here and take note that n space is the role of dimension of (n+2) space and (n-2) space plays the role of dimension of n-space.
5. This, as such, coordinates triple numbers (n-2, n, n +2) as that n-space plays the role of dimension of (n + 2) space and (n-2) space plays the role of dimension of dimension of (n + 2) space.
6. One may further have a pause here and take note that the synthesis of pair of dimension of order n avails synthesis glue of value (n-2) which otherwise is equal to the value of dimension of n itself.
7. One may further ,have a pause here and take note that the dimensional order of dimension plays the role of dimensional glue.
8. Illustratively linear order (1-Space as dimension with -1 space as its dimensional order) as -1 space playing the role of dimension of 1-space shall be yielding dimensional glue value as (-1) and that way would follow the dimensional synthesis equation as under:
   $1 + 1 – (-1) = 3$, parallel to
   (1) space + (1) space – (-1) space = 3 space
   The reverse of the synthesis process is the split process which in the context of 3-Space shall be leading to split for

3-Space (as solid dimensional order) into a pair of linear dimension.

9. This reach for pair of linear dimensions to solid dimensions and as a reverse the reach for solid order into the set up of pair of linear order shall be making the dimensional synthesis and split Phenomenon in respect of 3-Space
10. In general, n dimensional order splits into a pair of (n-2) dimensional orders while the pair of (n-2) dimensional orders synthesize n dimensional order.
11. This synthesis and split Phenomenon is of sequential ranges as each dimensional order leads to synthesis as well as splits
12. The happening of this synthesis and splits of a given dimensional order, in a sequential way, over a number of steps gives rise to the synthesis and splits spectrum of generations of the order of number of sequential steps of this Phenomenon,
13. Illustratively if we work out synthesis and split spectrum in respect of n = 10, then the sequential generational spectra will emerge of features as under:

Split spectra

i. And starting point, n = 10 is a single dimensional order.
ii. N = 10 dimensional order will split into a pair of dimensional orders n = 8. In addition, at this stage will emerge a single dimension of dimension order n = 6.
iii. Pair of dimensional orders n = 8 shall be yielding pair of dimensional orders n =6 each and a pair of dimension of dimension order n = 4
iv. One may have a pause here and take note that while the start with (first) generation spectrum was a single dimension n = 10, the same at the stage of first split, as a second generational spectra will be a set up of a pair of dimensions of order n = 8.
v. Then a step ahead at second split stage, as the third generation spectra will be a set up of five dimensions of order n = 6
vi. Like that the subsequent generational spectra can be chased.

14. It would be leading us to generational spectra sequence of dimensions (1 of order n = -10, 2 of order n = -8, 5 of order n = -6, 12 of order n = -4, 29 of order n = -2, 70 of order n = 0.
15. Let us have a pause here and take note that the transition from n = 10 = n = -10 because of a shift from split spectrum to synthesis spectrum, as a transition from continuum in terms of synthesis of pair of orientations, shall be making range (0, 2, 4, 6, 8, 10) = 20 – 10, 20 – 12, 20 – 14, 20 – 16, 20-18, 20 – 20).
16. It would be a blissful exercise to chase synthesis and splits generational spectra for different orders n.
17. For comprehensive view is being tabulated hereunder six generational spectra for synthesis as well as for split for dimensional order n = 10

Sn	Generational order	Dimensional Order	Spectra value

6	6th generation synthesis	N = 20	70
5	5th generation synthesis	N = 18	29
4	4th generation synthesis	N = 16	12
3	3th generation synthesis	N = 14	5
2	2nd generation synthesis	N = 12	2
1	1st generation synthesis / first generational split	N = 10	1
2	2ndgeneration synthesis / second generational split	N = 8	2
3	3rd generation synthesis / third generational split	N = 6	5
4	4th generation synthesis / fourth generational split	N = 4	12
5	5th generation synthesis / fifth generational split	N = 2	29
6	6th generation synthesis / sixth generational split	N = 0	70

18. One may have a pause here and take note that the above 11 steps long range of generational synthesis and split spectra for n = 10 covers the range as an array of dimensional orders (0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20)
19. One may have a pause here and take note that NVF (Stop) = 70, which is parallel to the value of spectra for sixth generational synthesis as well as for sixth general synthesis.
20. It would further be blissful to take note that the 11 steps long array of generational spectra for any order N = M, the values array would remain the same as (70, 29, 12, 5, 2, 1, 2, 5, 12, 29, 70).
21. It is this feature of dimensional synthesis and split spectra of dimensional orders which deserves to be comprehended well and to be thoroughly appreciated for complete imbibing as common structural flow steps for whole range of dimensional orders.

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