

ORGANIZATION FORMAT OF GANITA SUTRAS

Step 58 : Recapitulation for chase exercise of Geometric Formats

1. Sankhiya Nishstha and Yoga Nishstha are two established processing processes of Vedic Systems.
2. Sankhiya Nishstha presumes existence of geometric formats and avails artifices of numbers.
3. On the other hand, geometric formats presume the existence of artifices of numbers and avail dimensional frames.
4. These features make Sankhiya Nishstha and Yoga Nishstha being parallel to each other.
5. Further Sankhiya Nishstha and Yoga Nishstha become complementary and supplementary of each other.
6. This, this way makes transition from Sankhiya Nishstha to Yoga Nishstha and back from Yoga Nishstha, a two fold process.
7. This feature of transition from dimensional frames to artifices of numbers and back from artifices of numbers to dimensional frames makes it a spatial order.
8. The other features surfacing immediately from the nature of reach from one end to other and back, that way brings into the values of reflection operation, as well as of existence of orientations for the line between a given pair of points (of the line).
9. This spatial feature which takes care of both the orientations of a line, distinguishes itself from the single oriented sequential setting of a line manifesting a linear order.
10. It is this shift from 'linear order' to the 'spatial order' which deserves to be chased as to comprehend and to imbibe the distinguishing feature of

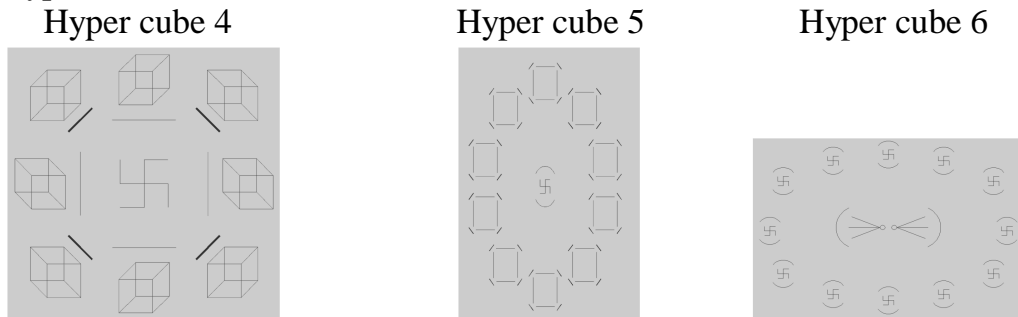
domains structured respectively by linear (dimensional) order and spatial (dimensional) order.

11. Scriptures preserve it with the help of quadruple of artifices (1, 2, 3, 8).
12. One may have a pause here and revisit this quadruple (1, 2, 3, 8) vis-à-vis the quadruple (1, 2, 3, 4).
13. The quadruple (1, 2, 3, 4) is of the feature of linear order as that here the sequential values accept the feature of $0+1=1$, $1+1=2$, $2+1=3$ and $3+1=4$.
14. The quadruple (1, 2, 3, 8) glaringly focuses with distinction the fourth artifice as being 8 while in case of the quadruple (1, 2, 3, 4), fourth artifices is 4.
15. One may have a pause here and have a fresh look at artifices pair (4, 8).
16. The artifice 8 permits re-organization as $2 \times 4 = 8$.
17. One may further have a pause here and have a fresh look of the re-organization permissible for the quadruple (1, 2, 3, 8) as (1 x 1, 1 x 2, 1 x 3, 2 x 4).
18. It shall be bringing to focus that this re-organization (1 x 1, 1 x 2, 1 x 3, 2 x 4) is of a spatial format as much as that here all the four artifices are permitting expression along a spatial (2 dimensional format) / as within a two dimensional frame along a surface, such that, as far as the fourth artifices concern here values along both the axes are more than a unit value.
19. One may have a pause here and take note that the quadruple of artifices (1 x 1, 1 x 2, 1 x 3, 2 x 4) permits split for its individual artifices as accepting classification whereby first three of them namely (1 x 1, 1 x 2, 1 x 3) constitute a class while the fourth artifice becomes single member class (2 x 4).
20. This, this way brings into a feature as that both lines as well as surfaces are accommodated within a surface.

21. One may have a pause here and permit the transcending mind to be face to face with a line outside the surface and line within a surface being of distinguishing feature.
22. It shall be bringing to focus the distinguishing contribution of features for the set ups within different dimensional frames.
23. Further the quadruple (1 x 1, 1 x 2, 1 x 3, 2 x 4) with its classification permissibility as (1 x 1, 1 x 2, 1 x 3), (2 x 4) also shall be bringing us face to face with the dimensional frame of lines as well as of planes.
24. Still further it also shall be bringing to focus the set up of a dimensional frame (s) which may be having sum of its dimension being lines, while the other (s) may be plane (s).
25. However the dimensional frames of identical axis shall be leading us to a sequence of dimensional frames which may be designated as linear dimensional frame, (where all the dimensions are lines), spatial dimensional frame (where all the dimensions are planes), solid dimensional frame (where all the dimensions are solid), hyper dimensional frame (where all the dimensions are hyper solid of same order).
26. This sequence of dimensional frames namely of 'linear dimensional frame', spatial dimensional frame, solid dimensional frame, hyper solid - 4 dimensional frame, hyper solid - 5 dimensional frame and so on, as such shall be of special pure and applied values because of their uniform features.
27. One may have a pause here and take note that line, square and cube respectively are the set ups within dimensional frames of single linear axis, double linear axes and triple linear axis.
28. Simultaneously it also would be relevant to note that line, square and cube are accommodated within cube itself.
29. It shall be bringing us face to face with the feature of 3 dimensional frame of linear dimensions, the sequential ordering rule of Ganita Sutra-1 and symmetry rule of Ganita Upsutra-1 together would be helping us reach at a dimensional frame sequence of a three dimensional frame of 3 linear dimensions, 4 dimensional frame of four spatial dimensions, 5 dimensional frame of 5 solid dimensions and so on.

30. One may have a pause here and take note that in the context of above dimensional frame sequence, it is surfacing as that line (1-space body) is playing the role of dimensional axis of the n -dimensional frame of linear dimensions. Ahead, square, 2-space body is playing the role of dimensional axis of 4 – dimensional frame of spatial dimensions.
31. Further ahead cube, 3-space dimensional body is playing the role of dimensional axis of 5 – dimensional frame of solid dimensional order.
32. One may have a pause here and pose to oneself about the essentiality of existence of hyper dimensional bodies of hyper dimensional spaces 4, 5 and so on.
33. One may further have a pause and have a fresh look at the set ups of an interval, square and quadruple as a set up of representative regular bodies of 1, 2 and 3 spaces (of single, double and all the three / triple axes of 3 dimensional frame of linear dimensions).
34. One may sit comfortably and permit the transcending mind to continuously remain in prolonged sitting of trans and to be face to face with the set ups of interval, square and cube and to comprehend and to imbibe the features of their set ups which shall be permitting transition there from to the features of set ups of hyper cubes 4, 5, 6 and so on.
35. One way to chase the set up of the interval is as a track of a moving point (0-space body).
36. This, in continuity would help permit chase square as a track of moving line.
37. And further ahead, the cube being a track of a moving square.
38. This naturally would permit a step ahead, hyper cube 4 being a track of a moving cube, and hyper cube 5 being a track of a moving hyper cube 4 and so on.
39. One may further have a pause and revisit the set ups of interval, square and cube as bodies / set ups within a two (end) points, four end lines and six end surfaces.

40. A step ahead hyper cube 4 would be a set up with a eight end solids.
41. This feature of 2 points boundary of interval, four lines boundary of square six surface plates boundary of cube and eight solids boundary of hyper cube 4 shall be leading us to a common domain boundary formulation for the whole range of dimensional bodies being $A_n : 2^N B^{n-1}$, $n = 1, 2, 3, 4, 5, 6, \dots$.
42. For convenience reference we may accept following special symbols for hyper cubes 4, 5 and 6 :



43. One may have a pause here and permit the transcending mind to be face to face with the geometric format features of dimensional bodies, particularly of interval, square and cube within hyper cube 4 and of interval, square cube and hyper cube 4 within hyper cube 5 and ahead hyper cube and interval, square, cube, hyper cube 4, hyper cube 5 within hyper cube 6, as these features in particular manifest the organization format features of Ganita Sutras.
