List of VM Consolidated documents of Dr. S. K. Kapoor

List 2 Different aspects of Vedic Mathematics

Article - 2

WHY VEDIC MATHEMATICS

The questions which should be addressed are as to why the modern mathematics is held up, why its logic recoils upon itself and why there are mathematical problems, logical knots and mental blocks at all in the modern mathematical approach?

Well known problems of modern mathematics may be cited as:

1. Everywhere continuous but nowhere differentiable functions

2. Hypercubes 1 to 7 increase but hypercube 8 onwards decrease

3. Space Filling Curves

4. Riemann Hypothesis

5. Goldbach's conjecture

6. Fermat's Last Theorem

Isn't it that these problems are there because of the axioms accepted by the modern mathematics?

And then follows a question as to whether Vedic mathematics is in a position to help the modern mathematics to come out of its mental block and to un-tie its logical knots and to solve the problems?

The Vedic geometric concepts worked out in the books of Dr. Kapoor promise us geometric comprehensions of our existence phenomenon transcending our existing three space format. The real four and higher spaces formats of Vedic comprehensions are new wonderful worlds of very rich mathematics which may ensure us powerful technologies and much potentialised disciplines of knowledge. The basic comprehension pointed out is the way the cosmic surface constitutes and binds the solid granules as synthetic solids manifesting in the cosmos.

Dr. Kapoor is attempting to reconstruct the discipline of geometry as a discipline based on Vedic concepts. He has designated this discipline as Vedic Geometry. His results has added a new dimension to the dialogue initiated with the interpretation of the Ganita Sutras and their potentialities brought to focus by Swami Bharti Krisna Tirthaji Maharaj.

Dr. Kapoor's conclusion is that this all is there only because of the acceptance of the geometric entity (monad) admitting no parts, and "1" has no predecessor. To overcome this, as per him, the modern mathematics needs Vedic mathematics' help to shift from monad without parts to a monad admitting parts. The eliptic equations format y2=x3 is bound to give a conceptual slip and this, as per him, can be well glimpsed by chasing the format of this equation on simplex format to see how it is deceptive to appear to be so while as whole numbers artifices parallel to the dimensional frames is well evident inequality. As such, there is a need for the modern mathematics to re-address to itself about the need for re-settlement of the basics to come out of the mental blocks and logical knots to un-tie the knots and to transcend the blocks and to be face to face with the wonderful worlds of reality awaiting ahead with all potentialities of their structural richness. The parallelism between artifices of whole numbers 1 to 26 and 26 sporadic groups is there because of the cosmic surface within the solids.

The recent academic research attempts and teaching experiments with the help of Vedic mathematical operations demonstrate their potentialities to provide the desired help.

The research results are bringing us nearer the traditional acceptance as that Vedas are written on the rays of the Sun. Vedic mathematics, science & technology is the mathematics, science & technology of the way the nature maintains grand unification of the existence phenomenon on the Earth through the rays of the Sun. It is in this grand design of the nature the individual Vedic mantras are impulses of consciousness. This design maintains the continuity of the life within human frame and beyond through the natural intelligence embedded in the human mind and in the rays of Sun. This continuity and parallelism when chased promises new wonderful experiential domains about new realities and the wonderful domains to unfold for us new disciplines of mathematics, science & technology.

Vedic sounds are multidimensional domain frequencies from within the particular dimensional frame as the structure of that domain.

When the sounds are pronounced, the frozen frequencies get initiated and the self-organizing power of the Vedic sounds set the frequency's potentialisation process into action. It is this process whose utilization is the aim of different Vedic scriptures.

Rig Ved Samhita is the first Vedic scripture. It is the first book of the mankind. The mathematics precedes the composition of Rig Ved Samhita. Vedic Mathematics helped to transform the universal set of knowledge as a speaking language and in the process it itself as well transformed as such and assimilated its identity into the Vedas.

Within Vedas, all discipline of knowledge transform their identity and get assimilated into the single discipline of organization of knowledge on geometric formats. Vedic geometry and mathematics as such help us to work out these formats. ■

GOLDBACH'S THEOREM: ITS PROOF

Dr. S.K.Kapoor has authored a book "Goldbach Theorem" in which proof of Goldbach's conjecture has been published as "Proof of Goldbach Theorem". Subsequently Step 2A has been added. This proof inclusive of Step 2A is published as an Article in Issue No. 10 (July 2000) of Vedic Mathematics Newsletter

Precisely the conjecture is that every even greater than 2 can be written as a pair of sum of primes. It is part of the famous letter (June 7, 1942) of Christian Goldbach (1690-1764) to great Swiss mathematician Leonhard Euler. Since then this conjecture has remained a brain teaser and unsolved problem of the order of Fermat's Last Theorem and Riemann Hypothesis.

The book "Goldbach Theorem" has four chapters. The proof except Step 2A has been settled in Chapter 1 of the book. All what is presumed as background is only the mature comprehension of the whole numbers. As every even number by definition admits two parts, therefore, it is this property of evens which has come very handy to express even E as M+M. With this the maximum possible pairs with numbers 0 to E have been formed putting a restriction that some of the numbers of the pairs should always be equal to E. The pairs are designated as duplexes. Then the recursive subsets of the source set of maximum number of duplexes of given even number E are constructed and the subset of duplexes with both numbers of the duplexes being primes is reached at. The cardinality of this set is computed as ³ 1/4×ÖE.

As 1/4×ÖE for E ³ 64 is ³ 2, so after accounting for the duplex (1,E-1), there always remains a minimum of one such duplex whose both members are to be primes and with it the conjecture stands satisfied. Otherwise, this in fact, amounts to extension of the conjecture for E³ 64 from expectation of one partition for E as sum of primes to that of the minimum of 1/4×ÖE number of partitions for E as sum of primes.

Chapter 2 of the book takes us to Vedic geometric inspiration and approach of di-monad format (a format which accepts entity as of two parts). The interesting property of the geometric setup of "square" of area E is that such a square would be admitting ÖE as a side of the square. This gives us the ratio of area E and the sum of its four sides as 1/4×ÖE. The conceptual parallelism is much inspiring. This makes Vedic geometric approach as much potentialised approach.

Chapter 3 of the book introduces a slide rule for finding out solutions for E=P+Q. This together with the computer testing (Chapter 4) for the number of solutions of equation E=P+Q adds empirical value to the proof.

Link for proof:

PROOF OF GOLDBACH THEOREM ■

FERMAT'S LAST THEOREM: ITS PROOFS

Fermat's Last Theorem (FLT) has remained most famous unsolved mathematical problem. This theorem has also attracted the attention of Dr.S.K.Kapoor. He has published his results about the truth of this property of numbers. He has worked out the theorem with different approaches. Essentially all these approaches are geometric in nature but still these are different in characteristics and as such these may be taken as different proofs of the theorem. His approaches and conclusions are not only having intrinsic academic values but also these have historic angle as much as that these accept inspiration as well as working operations from a distant source i.e. Vedic literature. These results are also published in point of time than the proof now accepted in the academic circles.

Three of these proofs of FLT were published in "Modern Science & Vedic Science" (Volume 3 No.1, 1989) with the caption "Vedic

Mathematical Concepts and Their Applications to Unsolved Mathematical Problems: Three Proofs of Fermat's Last Theorem". Chapter-10 of the book "Vedic Geometry" (1994) as well takes up some of the aspects of this property of numbers under the caption "Chapter 10: Conclusions and their Applications to the Solution of Fermat's Last Theorem". Then followed the book "Fermat's Last Theorem and Higher Spaces Reality Course" (1996) in which in addition to the outline of different formats of the approaches to the proof and in addition to the general proof of FLT, the result of the theorem has been generalised as Generalised FLT for whole range of hypercubes. The concepts of power sets and the application of different place value systems to test the truth of any given triple of whole numbers have also been introduced which may prove to be very handy for tests of the truth of this property known as FLT. These proofs are on different formats which are worked out as:

1. On Domain Format 2. On Simplex Format 3. On Values Square Format 4. On the Format of Domain As Dimension Of Another Domain 5. On the Format of Hypercubes

Dr. Kapoor has generalised the property by extending it to the geometric property of hypercubes of every order. Fermat's Last Theorem speaks out the property of linear dimensional order only. The cause of the restriction being the linear dimensional order so we get the restriction of powers being three and higher. Dr. Kapoor's results generalized the theorem as a geometric property of hypercubes by a shift from linear dimensional order to a spatial dimensional order. The generalized statement comes to be as that "no hypercube can be duplicated" because of the interlocking of (n-2) space with n-space as dimension and domain respectively.

For practical testing of triplets of whole numbers Dr. Kapoor has introduced the concept of Power Sets and the same have been tabulated as Appendix of the book.

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