Mod-01 Lec-3 Vedas and Śulba Sūtras - Part 2

Study notes by Sanskrit AI Universe, based on this video

Video by NPTEL course 'Mathematics in India' (IIT Bombay) · nptelhrd · 22 Dec 2013

Not the creator's own slides

About these notes

— Official title: Mod-01 Lec-3 Vedas and Sulbasutras - Part 2

— Speaker and channel: NPTEL course 'Mathematics in India' (IIT Bombay) · nptelhrd

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— Official description: Mathematics in India - From Vedic Period to Modern Times by Prof. M.D.Srinivas,Prof.M.S.Sriram & Prof.K.Ramasubramanian,Department of mathematics,IIT Bombay.For more details on NPTEL visit

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From the talk · 0:14–5:47

— The value of root 2 so if it 3 times then root 3 and so on so these are common things so one way is of course geometrical find out.

— The value of root 2 so they have given certain expressions for route 2 so which is in the form of a sum of rational numbers so all.

— What are known as citis so citi as they was mentioning is basically collecting things together putting things together so we have several citis which are listed and so on so.

— So which will be the sum of these 2 squares basically the area of the largest square so this is a simple instruction which tells you how to go about.

From the talk · 5:57–11:43

— This has seen a question which has been discussed at great length and what we can easily is the śulbakāra though they did not explicitly give proof of.

— So in fact the commentary to mahindra clarifies so what do these terms mean so you will find in various places the terms like actually means route 2 means root 3.

— The term has been defined as the it is different see if you want to find out twice the area of this so size how root 2 obviously so we call.

— These diagonals split this into 2 halfs so means eye so splits the geometrical object into 2 half like 2 eyes and of derivation that has been presented for.

From the talk · 11:54–17:46

— So there the work karani is used in sense of a certain unit of measurement ok now i move on to discuss the sūtra which gives you.

— We saw sūtra to clear the procedure for finding the sum of 2 square feet here is a difference so this is how the word is derived so.

— The square you want to remove from this so measure the measure of that you mark something in the largest square for instance in this diagram suppose you have.

— This other side ok from one side you just drag it and take it to the other side so where every it fall so once you do that so.

From the talk · 18:00–23:34

— That i need is so this is what is extra here so we construct the square you can think of removing this so removing this what is the square.

— So to construct a square that is n times a given square this is a very interesting problem so which has been discussed.

— So he basically tells that you have to conceive of your certain triangle wherein the side of the triangle one of the side so which we can consider the base.

— So is n-1 times ok so then the other 2 sides so have to be of this measure n+1*a/2 and n+1*a /2 so what would be.

From the talk · 23:42–30:09

— So some kind of prescription which is found in Śulba Sūtra is what we are going to discuss now so this in every sūtra we will find this ok.

— We can think of ok so the sūtra goes like this is half of the diagonal which is od so this if says just take it this line.

— So it you can think of it to be oe now so i have rotated it and brought it there which is remaining above see when od become oe.

— So op is the radius of the circle whose area is going to be square so od=root 2a obviously so then me is root 2a-a so that is the portion.

From the talk · 30:19–35:18

— This sūtra and what we will be presenting here is certain geometrical way of arriving at this expression for root 2 which we find in baudhayana Śulba Sūtra.

— In fact later mr srinivas may be telling you how this can we obtain so from different kind of a problem which is called ok so that.

— This void is 1/3*4 square so i remove a small strip from this so that the small strip corresponds to this area so this is how i post.

— This will be the left hand side and if equate so if ignore these square so you can easily see so b is 1/3*4*34 so this again an approximation because.

From the talk · 35:28–40:43

— So what has been given as r is this expression so if we use the value of root 2 which has been shown by the himself then.

— Then that is why we have 2/4 and then one fifth of its so that this create such void and by formulating which is similar to the equation.

— We invite the problem for you have a circle so that has been transformed into a square and for that we have an express of this form which is given in.

— The Śulba Sūtra all of them refer to diameter so make it into a divide by a so 29 so you divide further by 129 once can see that this is exactly.

From the talk · 40:54–44:45

— So 1000 bricks have to be there so which means automatically there will be 5 layers ok so 200 in each layers so far it have stability of.

— Then it says third time so this is how the prescription goes in vedas ok then it.

— Also says sort of shape image ok usually suppose you have a certain ideal is called ok an image of something so means so you create the alter so this.

— This so what is this bird so there are other statement which are found in various brahmana so i am just decide a couple of them and then proceed further.

From the talk · 44:51–48:16

— The shapes of various bricks have been given in great detail for all the measurements etc i states her i will not spend much time here this for instance.

— That so it is made up of basically 5 types of bricks total number of bricks as i was mentioning should be 200 so this is a constraint.

— That no two tail will be exactly fitting see they will be so start of interest is will be filled in second layer and this also has 200 but.

— This is how this is constrain so regarding this is fabrication of brick also there are some specifications in the Śulba Sūtras see these are all some interesting things.

From the talk · 48:23–57:40

— And therefore he says is basically brick made out of clay so is not made out of clay would not be using here so all these prescription are been here with.

— That you have very clear rules which are stated which will facilitate as in constructing all those constructing is fire places on altars of different sizes and shapes so and in.

— This is equivalent to transforming one into the other so this is the primary purpose but this was not the purpose of geometry got developed civilization and i also demonstrated that.

— This tradition we see that it has been an oral tradition and therefore any proof would have been combined by the not explicitly available in the sūtra systems and regarding antiquity so.

Sources and credit

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— Captions used: English (Invidious lang=en track) (en), retrieved on 24 November 2026 via a public Invidious instance. These English captions look like a prepared track rather than rolling auto-captions, but wording may still be imperfect.

— Also used: the official video title and description, and the Watch catalogue note already published in this journal (presenter and why the video is listed).

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