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AN ALTERNATIVE TO PYTHAGOREAN THEOREM (LATEST INDIAN CONTRIBUTION TO MATHEMATICS)

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ABSTRACT

Pythagorean theorem has been known for the last 2500 years. Till now this is the only theorem available to calculate the length of a diagonal of a square. In the present paper an alternative method is submitted which also finds the length of the diagonal exactly. The unknown relation between diagonal and circumference is a new concept which revolutionizes the Geometry.

KEYWORDS: Circle, circumference, diameter, diagonal, Pi constant, side, square.

INTRODUCTION

Pythagorean theorem is a well known phenomenon in Geometry since the beginning of learning of basic mathematics. India knew this mathematical truth in 800 B.C. **Baudhayana** is famous for this Pythagorean theorem which got its name in the honour of **Pythagoras of Greece**. In his school, **Hippasus of Metapontum** introduced $\sqrt{2}$ for the Pythagorean theorem which got its full life afterwards. Thus, from then on i.e. 450 B.C. this theorem became Pythagorean theorem, although it was known to **Baudhayana** (800 B.C) of India, two centuries earlier.

By the blessings of the **Creator of the Cosmos**, this present paper has given an alternative to the Pythagorean theorem. This has made possible because of the revelation by **Nature** the true/ real/ exact value of π equal to $\frac{14-\sqrt{2}}{4}$ = 3.14644660941…. The world of Mathematics must be grateful to the Nature for revealing the true π value which has also helped us to find out the diagonal length exactly which hither to was possible only with Pythagorean theorem. So, as the exact value of diagonal length is calculated with the new π value $\frac{14-\sqrt{2}}{4}$, it has become possible to accept both the concepts, i.e. the value of diagonal and the exact value of π, from the circumference of the inscribed circle with a square.

Thirdly, so far, it has become impossible, very impossible to calculate the area/ circumference with radius of a circle and without taking the value of π. (Surprisingly and unfortunately, even to know the π value, one has to **necessarily** measure exactly the length of the circumference of a circle).

Again, the Nature has been kind to us in revealing formulas to find out area and circumference of a circle without π and they are:

Circumference of circle = $6r+\frac{2r-\sqrt{2}r}{2}$

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Area = $r\left(\frac{7r}{2}-\frac{\sqrt{2}r}{4}\right)$

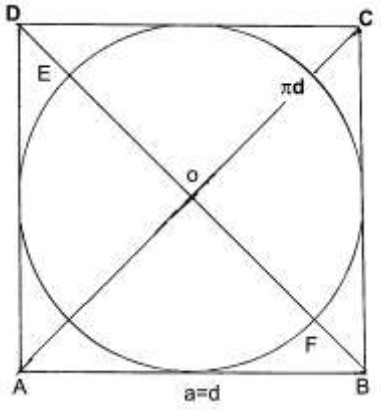
The present so called π number 3.14159265358… of polygon has totally failed to adjust itself with formulas where radius alone is involved. This is a convincing proof to discard that so called π number 3.14159265358… is not really a π number. The π value which can be deduced from the above formulas is real.

METHOD

Pythagorean theorem got life with the introduction of $\sqrt{2}$ for diagonal by **Hippasus of Metapontum** although this theorem was known two centuries earlier, to **Baudhayana (800 B.C) of India.**

Here is an alternative to find the length of the diagonal of a square **with the help of its inscribed circle.** It is most unexpected and looks unmathematical.

1. Square ABCD : Side = AB = a
2. Diagonal : BD = AC = $\sqrt{2}$ a
3. Inscribe a circle with the square
4. Diameter = EF = d = side = a
5. Circumference = πd = πa, where $\pi=\frac{14-\sqrt{2}}{4}$
   = 3.14644660941… (discovered in March 1998 after 26-year search, on-and-off, from 1972).
6. One way of finding the length of diagonal = $AB^2 + BC^2 = AC^2$
7. Alternative way is



14a – 4πa = diagonal length ($\sqrt{2}$ a)

= $14a-4a\times\frac{14-\sqrt{2}}{4}=\sqrt{2}a$ where a = d

The alternative method tells us two things. They are circumference (πd = πa) and diagonal ($\sqrt{2}$ a = $\sqrt{2}$ d) are related (unknown till now) to the core, although both appear different superficially, because, diagonal is a straight line and circumference is a curve. Secondly, this relation also tells us, that, $\frac{14-\sqrt{2}}{4}$ is the true π value, and not 3.14159265358… believed (no other way) as π number in the last twenty centuries by millions of mathematicians taking the help of polygon. To any mathematician, this unthinkable relation between diagonal and circumference, looks strange/ odd/ wrong. But, this author, a Zoology teacher, strongly believed (excused for this statement) by his 118 geometrical methods, after 18-year, 24-hour-a-day, constant study and search, this relation is normal for the sole reason that the above construction is very basic, very natural and hence not strange/ odd/ wrong and further unquestionably a real one and an unique revolutionary concept. The only qualification this author possesses is his knowledge in Mathematics is Big Zero and is the reason why that **NATURE** has chosen a non-mathematician who will receive gratefully unprejudiced, **to reveal this fundamental truth to the world,** clouded for so long, unfortunately.

CONCLUSION

In this paper there is a proof for the real π value by getting with it the exact length of a diagonal of a square. And also the formulas for circumference, and area of a circle, all three put together i.e. 1) diagonal , 2) π number and 3) formulas with radius only and without π, fit perfectly well, as acceptable concepts, by all without an iota of doubt.

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AN ALTERNATIVE TO PYTHAGOREAN THEOREM

Firdaus Udwadia <feuusc@gmail.com> Sat, Apr 9, 2016 at 12:23 AM
To: RD Sarva Jagannadha Reddy <rsjreddy1341946@gmail.com>

Dear Dr. Reddy,

Many, many thanks for sending me this document. It is most illuminating. It validates that Pythagoras had spent considerable time in the middleeast, and perhaps in India (or in places where the Indian influence was significant in terms of science and learning at the time) before he started his school in Sicily. This fits right into my suspicion that a lot of 'Greek' knowledge came from the East.

Many, thanks again to you for sending me this!

With kind regards,
Firdaus Udwadia

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Fwd: AN ALTERNATIVE TO PYTHAGOREAN THEOREM

Pavel Solin <pavel@nclab.com> Sun, Apr 17, 2016 at 9:37 PM
To: RD Sarva Jagannadha Reddy <rsjreddy1341946@gmail.com>
Cc: Jeff W Mortensen <jm@unr.edu>, Amit Saini <saini@unr.edu>, Pavel Solin <solin@unr.edu>, Ilia Zaliapin <zal@unr.edu>

This will be very disappointing for the guy who memorized
43,000 digits of PI...

Pavel

--
Pavel Solin, Ph.D.
Founder of NCLab
Professor at UNR

Gmail by Google

RD Sarava Jagannada Reddy <rsjreddy1341946@gmail.com>

Fwd: A BREAK – THROUGH, NO MORE Pi FOR CIRCLE

Johan Viaene Fri, Nov 20, 2015 at 12:27 AM
To: RD Sarva Jagannadha Reddy <rsjreddy1341946@gmail.com>

Dear Reddy,

Namasthe!

It is a very good idea to present the circle formulas as simple as possible using the radius only.

After all, this way the ambiguous π symbol is avoided and may not be needed at all.

The circle curvature value should be deduced from the basic (radius based) formula and why would it even have to be called π ?

It could be represented with another symbol in order to end the confusion with the polygon based π value.

I hope you are not discouraged by the negative personal comments and insults.

The people who send these offending messages are lacking the humble attitude required to discover even the most basic truth.

They will never discover any truth as long as they consider themselves bigger than the truth.

Best regards,

Johan Viaene

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