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THE DIAGONAL – CIRCUMFERENCE-Pi OF SIMPLEST RELATION

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ABSTRACT

A circle can be inscribed in a square. The diagonals are the part of the square. Circumference is part of the circle. The diagonal of the square helps in finding the length of the circle and its Pi value.

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

INTRODUCTION

The circle and its circumscribed square is a natural geometrical relation. Human mind could not understand the circle properly because of circle's curvature. The area and circumference of circle has been estimated till now approximately. Their exact values have become a challenge to the human intelligence. Millions of mathematicians all these years of human civilization have tried and failed. Interestingly, we have been told for 2000 years by the mathematicians that π value equal to 3.14159265358… is final and is **almost exact.** Till March 1998, every student, scientist, mathematician had believed that $\frac{22}{7}$ for school children and 3.14159265358… at the research level and used as the π values. However, some people did not believe this thinking because they asked themselves, why should there be two values for one constant called π.

When this was the thinking prevailing then, this author, in 1972, when he was 26 years old, asked himself a different question. The question was "Why should π occurs in πr^2 and $2\pi r$ as **constant** in finding the extent of area of circle. Why such constant was **not used** when area of square and perimeter of square were calculated ? This question made this author to think to **eliminate π constant** altogether from the circle and calculated area and circumference with radius alone, as is the practice in square, where side(a) is the sole line segment in a^2 and 4a of area and perimeter of the square respectively. God is kind and revealed two formulae in March 1998, with radius, for area and circumference of circle.

The two formulae are

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

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

The above two formulae when **equated** to πr^2 and $2\pi r$, the value of π is $\frac{14-\sqrt{2}}{4}$ =3.14644660941… Thus, to conclude, the area and circumference of circle can be calculated

1. Without π constant and
2. With π constant, but value found to be, not $\frac{22}{7}$ or 3.14159265358.. but $\frac{14-\sqrt{2}}{4}$ = 3.14644660941….

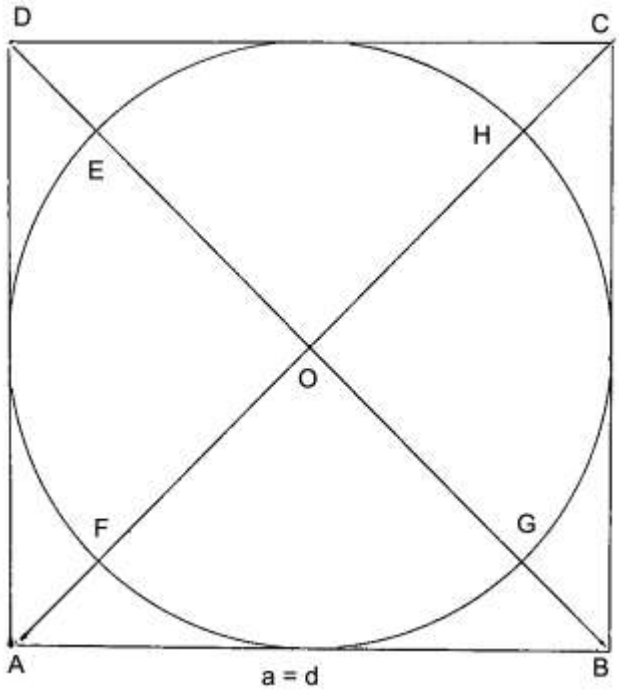
So, for the first time in the history of mathematics, one value to π which is exact and kindly is revealed by God for the benefit of humanity. Thank God if you concur with this author, Sir.

Procedure:
Square: ABCD, side = AB = a = d
Circle: Centre = O, Diameter = FH = d = a

Diagonal = AC = BD = $\sqrt{2}$ a

Corner length = AF = HC = $\frac{\text{Diagonal} - \text{diameter}}{2} = \frac{AC - FH}{2} = \frac{\sqrt{2}a - a}{2}$

Circumference = πd = πa



There is **no difference** between the diagonal of the square $\sqrt{2}a$, and the circumference πd = πa of the inscribed circle.

There exists very clear and exact relation which is the simplest among 1.**Side**, 2. **Diameter**, 3. **Diagonal**, 4. **Circumference** and 5. **Corner length** as shown below:

$$16 = \frac{\text{Diagonal}}{\text{Diagonal} - \text{Diameter}} + 4\pi$$

$$= 16 = \frac{\sqrt{2}a}{\sqrt{2}a - a} + 4\pi$$

Where a = d = side = diameter

From the above natural formula, it is humbly submitted now that π is an **algebraic number** equal to $\frac{14 - \sqrt{2}}{4}$ and not a transcendental number. May be the so called official π number 3.14159265358… a transcendental number but definitely not the real π of the circle, derived from the concerned **line-segments** of the square-circle nexus which is very natural.

This author may kindly be permitted to share his views with you, Sirs. If you are one among the supporters of the present 2000-year old official number 3.14159265358… which has been believed, derived and **established as final**, by very great mathematicians cum Scientists especially Sir Issac Newton, across the world, still, can you Sir, derive, similarly, this 3.14159265358… using the square – circle or polygon – circle construction involving concerned **line-segments,** like the one above ?

If you can do it, it is quite welcome and this author would say "Sorry" to you Sir, and stop his labour of search.

If you can not do it, and if you can not disprove the above formula, this author humbly requests you Sir, in the interest of enrichment of **real** mathematics, may stop believing that 3.14159265358… as π of the circle and further requests you Sir, to announce it, to the world from the portal of your esteemed and great university what is the real π value ?

In the name of so called a **Proof of rigour**, kindly do not deny this divine value $\frac{14-\sqrt{2}}{4}$ of the **intelligence of the Cosmic Mind.**

"Ramanujan had no formal education in Mathematics. He left his proofs lacking rigour. But pioneers and path-finders, exploring boldly new terrains of mathematical thought, permit themselves a freedom in their attack on a mathematical problem. Their intuition often provides them with an innate feeling for what is correct and what is not" (Page No-192).

- T.S. Bhanu Murthy, A Modern Introduction to Ancient Indian Mathematics, 2nd Edn. New Age International Publishers, 2009, New Delhi.

Baudhayana theorem (Pythagorean theorem) has about 370 proofs. Nobody questions it because it is true. Whereas 3.14159265358… is not the **single value for π.** There are many numbers, **mathematicians** across the world have been proposing still, unbelieving 3.14159265358… as π of the circle. This is a clear proof that this number has **no single proof of its existence in circle,** either geometrically or arithmetically based on the concerned line segments. When this is the reality for 2000 years and the failure of millions of mathematicians of the past is very clear, **the new number needs a serious study** because it is backed by more than hundred different geometrical constructions as proofs. For more details www.rsjreddy.webnode.com A final request to you, Sir, kindly **avoid using harsh words if you differ,** such as addressing this author very recently, as "Dear Idiot Crank" by one honourable Professor (and this Honourable Professor has also said his colleagues too feel the same for sharing this work). Is it for this laurel, a Zoology teacher cum student labored 43 years since 1972 and spent rupees one million from his poor pocket in the last 17 years, after the discovery of March 1998 Pi number $\frac{14-\sqrt{2}}{4}$?

CONCLUSION

The π value is an **algebraic number** and that value is $\frac{14-\sqrt{2}}{4}$ = 3.14644660941…

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