The Pi Square equation

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ABSTRACT: In this article, we are giving the accurate value of $(\pi)^2$ after four decimal places by considering the relation between two positive integers.

KEYWORDS: Positive unique integers, Value of π & G.C.D.

I. INTRODUCTION

In mathematics, we have two equations which give approximate value of π with the help of two integer values. These realations are given by Aryabhatt 1st and Aryabhatt 2nd. In this atricle I will state the value of π^2 by giving the relation between two integers.

II. EQUATION

Let x and y be two positive integers. Therefore, the values of x and y are unique & it is given by the following relation:

$$x = \pi^2 y.$$

where π =3.141655614 which is accurate value but we consider only first four decimal places that is π =3.1416.

Let x and y be unique integers for the relation in

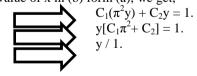
$$\mathbf{x} = \boldsymbol{\pi}^2 \mathbf{y}.$$
(a)

Assume that there are infinitely many values of x and y which satisfies the above equation and the G.C.D of (x,y)=1.

Now, consider G.C.D of (x,y)=1 & let C_1 and C_2 be two positive integers such that:

$$C_1x + C_2y = 1$$

Therefore, replacing the value of x in (b) form (a), we get,



The above result is possible if and only if y = 1 which gives contradiction to our assumption that x , y are two positive integers that is x > 1 and y > 1.

CONCLUSION

(by property of G.C.D)....(b)

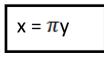
Hence, $x = \pi^2$ yhas unique values of x & y for $\pi = 3.141655611$. Where value of x and y are 987 and 100 respectively.

REFERENCES

Most of this article contributes my own personal work. The reference which I used in this article are as follows:

[1] Equation by Aryabhatt 1 is:

III.



- [2] where, x = 62,832, where, x = 02,032, y = 20,000, and $\pi = 3.1416$. Equation by Aryabhatt 2 is:
- [3]

b = 7 and $\pi = 3.142857$.