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A New Pi Generating Series.

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Abstract:
In that series i basically find a new way to express the value of pi. Its a kind of pi generating formula which i figure out in a specific way.
Keyword's: *Pi, equation, series,*
Conclusion:
Hence after some mathematical criteria, we get the value of "S" series, very close to pi or 3.14!!!

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I. Introduction:

A New pi(π) Generator formula can be described by in terms of:

$\pi=\sum[(4n+3)/50^n]\approx 3.14$

Here, [n=0 to ∞], we can also describe it as a product series, such as:

$\pi=\prod[(4n+3)\times 50^{-n}]$

Proof:

At first let named the series "S".

$S=\sum[(4n+3)/50^n]$

Now, lets expand it,

$S=[(3/50^0)+(7/50^1)+(11/50^2)+(15/50^3)+(19/50^4)+(23/50^5)+(27/50^6)+......]$

$=[\{(3+0)/50^0\}+\{(3+4)/50^1\}+\{(3+8)/50^2\}+\{(3+12)/50^3\}+\{(3+16)/50^4\}+\{(3+20)/50^5\}]$

$=[(3/50^0)+(3/50^1)+(3/50^2)+(3/50^4)+......]+[(4/50^1)+(8/50^2)+(12/50^3)+(16/50^4)+...]$

$=3\times[1+(1/50^1)+(1/50^2)+(1/50^3)+(1/50^4)]+(1/50)\times[(4/50^0)+(8/50^1)+(12/50^2)+(16/50^3)+.....]$

$=3\times[1-(1/50)]^{-1}+(1/50)\times[(4/50^0)+(8/50^1)+(12/50^2)+(16/50^3)+.....]$

Or, $S=3\times(50/49)+\Gamma$ eq^n (A)

Now, lets expand Γ term:

$\Gamma=(1/50)\times[(4/50^0)+(8/50^1)+(12/50^2)+(16/50^3)+.....]$

$\Gamma=(1/50)\times[4+(4/50)\times\{(2/50^0)+(3/50^1)+(4/50^2)+(5/50^3)+.....\}]$

$\Gamma=(1/50)[4+(4/50)\Phi]$ eq^n (B)

Here:

$\Phi=[(2/50^0)+(3/50^1)+(4/50^2)+(5/50^3)+(6/50^4)+....]$

$\Phi=[(1/50^0)+(1/50^0)+(2/50^1)+(1/50^1)+(3/50^2)+(1/50^2)+(4/50^3)+(1/50^3)+(5/50^4)+(1/50^4)+.....]$

$\Phi=[(1/50^0)+(1/50^1)+(1/50^2)+(1/50^3)+....]+1+[(2/50^1)+(3/50^2)+(4/50^3)+(5/50^4)+.....]$

$\Phi=[1-(1/50)]^{-1}+1+[(2/50^1)+(3/50^2)+(4/50^3)+(5/50^4)+.....]$

$\Phi=(50/49)+\Delta$ eq^n (C)

where,

$\Delta=[1+(2/50^1)+(3/50^2)+(4/50^3)+(5/50^4)+.....]$

$\Delta=1+[\{(3-1)/50^1\}+\{(4-1)/50^2\}+\{(5-1)/50^3\}+\{(6-1)/50^4\}+......]$

$\Delta=1+[-(1/50^1)-(1/50^2)-(1/50^3)-(1/50^4)-.....]+[(3/50^1)+(4/50^2)+(5/50^3)+(6/50^4)+.....]$

$\Delta=1-(1/50)\times[1+(1/50^1)+(1/50^2)+(1/50^3)+....]+50\times[(3/50^2)+(4/50^3)+(5/50^4)+(6/50^5)+....]$

$\Delta=1-(1/50)\times[1-(1/50)]^{-1}+50[\Delta-1-(2/50)]$

$\Delta=1-(1/49)+50\Delta-50-2$

$-49\Delta=1-(1/49)-52$

$-49\Delta=-(1/49)-51$

$49\Delta=(1/49)+51$

$\Delta=[1+(51\times49)]/49^2$

$\Delta=2500/2401$ eq^n (D)

If we put the value of Δ into equation (C) we get:

$\Phi=(50/49)+(2500/2401)$

$\Phi=(50/49)\times[1+(50/49)]$

$\Phi=(50/49)\times(99/49)$

$\Phi=4950/2401$ eq^n (E)

Let's put the value of equation (E) into equation (B):

$\Gamma=(1/50)\times[4+(4/50)\Phi]$

$\Gamma=(1/50)\times[4+(4/50)\times(4950/2401)]$

$\Gamma=(1/50)\times[4+4\times(99/2401)]$

$\Gamma=(4/50)\times[1+(99/2401)]$

$\Gamma=(4/50)\times(2500/2401)$

$\Gamma=200/2401$ eq^n (F)

Putting the value of equation (F) into equation (A) and we will get:

$S=3\times(50/49)+\Gamma$

$S=(150/49)+(200/2401)$

$S=(50/49)\times[3+(4/49)]$
$S=(50/49)\times[151/49]$

$S=7550/2401$
$\approx3.14=\pi$ (proved)

Conclusion:

Hence after some mathematical criteria, we get the value of "S" series, very close to pi or 3.14!!!