

On a Proof
 $\pi \neq 3.14159\dots$
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Abstraction.

By comparing the square of the approximated pi's quarter to the actual geometric width of a plotted pi annulus, this paper resolutely proves $\pi \neq 3.14159\dots$ while/as discovering the presence of a (reciprocal of the) so-called 'golden ratio' contained in/as the pi annulus' uniform width.

On a Proof $\pi \neq 3.14159...$

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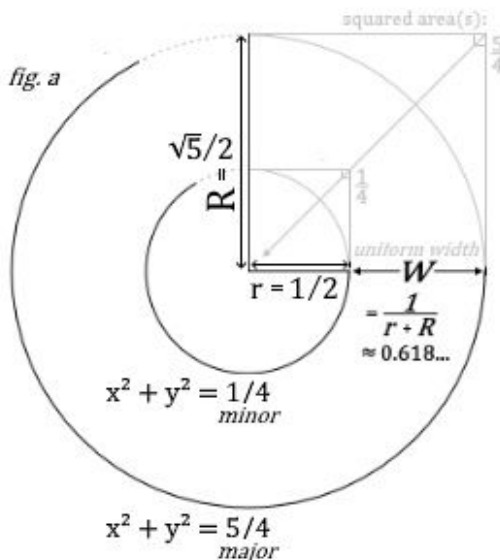
Given:

$$\begin{aligned} a &= \pi r^2 \\ a &= \pi (1/2)^2 \\ a &= \pi/4 \\ \therefore 4a &= \pi \approx 3.14159... \\ \text{obs. } r &= (1/2) = 0.500... \end{aligned}$$

plot $\pi = 4a$ as an *annulus* by using $4a(R^2 - r^2) = 4a$.
Let r obs. $1/2$. Solve for R .

$$\begin{aligned} 4a(R^2 - r^2) &= 4a \\ 4a(R^2 - (1/2)^2) &= 4a \\ R^2 &= 1 + 1/4 = 5/4 \\ R &= \sqrt{1 + 1/4} \\ \therefore R &= \sqrt{5}/2 \end{aligned}$$

Find the annulus' uniform width w .



$$\begin{aligned} \text{as } r^2 &= 1/4 \quad \& \quad 5/4 = R^2 \\ \therefore r &= 1/2 \quad \& \quad \sqrt{5}/2 = R \end{aligned}$$

∴

the π annulus is composed of minor & major radii resp.

$$r + R = \frac{1}{2} + \frac{\sqrt{5}}{2} \approx 1.618...$$

whose sum is equal to the so-called "golden ratio" & the π annulus' uniform width:

$$W = \frac{2}{\sqrt{5} + 1} = \frac{1}{r + R} \approx 0.618...$$

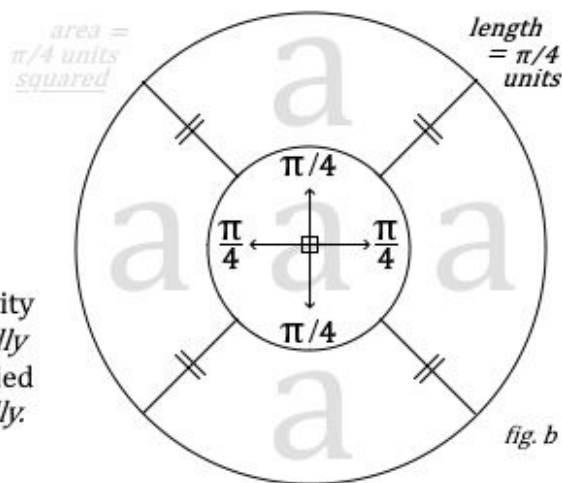
is equal to the **RECIPROCAL** of the same sum.

As according to

$$\begin{aligned} c &= \pi d \text{ obs.} \\ d &= 2r \text{ obs.} \\ r &= (1/2) = 0.500... \\ c &= 2\pi r = \pi \\ \therefore c &= \pi = 4a \\ \therefore a &= \pi/4 = c/4 \end{aligned}$$

VERIFY the annulus' integrity by verifying each a is *radially squared*; a condition satisfied only if/as $5a - a = 4a$ areally.

π 's 'Golden Annulus'



To VERIFY, let $a_R = 4ar^2$ be the area of circle Majora $R = \sqrt{5}/2$
obs. $a_r = a$ thus:

$$\begin{aligned} a_R &= 4ar^2 \\ a_R &= 4a(\sqrt{5}/2)^2 \\ a_R &= 4a(5/4) \\ a_R &= 20a/4 \\ a_R &= 5a \\ \therefore a_R - a_r &= 5a - a \\ &= 4a \text{ units squared} \\ \therefore 4a & \text{ surrounds } a \text{ areally} \end{aligned}$$

To TRY.....

the integrity of ($\approx \pi$), we question **WHETHER** or **NOT**

$$\approx \pi = 3.14159...$$

strictly observes a radius of $r = 1/2 = 0.5000...$ units, for:

$$\begin{aligned} \text{IF SO: } \pi &= 3.14159... \text{ but} \\ \text{IF NOT: } \pi &\neq 3.14159... \text{ so} \end{aligned}$$

to TEST.....

∴ we square ($\approx \pi$)'s quarter radially by plotting a point

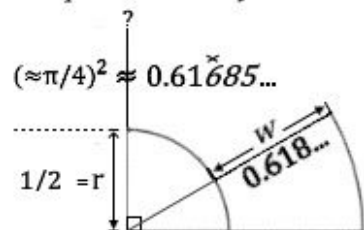
$$(0, r + (\approx \pi/4)^2)$$

to observe **WHETHER** or **NOT** the radial length of this sum satisfies the annulus' width:

$$\begin{aligned} \text{from: } x^2 + y^2 &= 1/4 \\ \text{to: } x^2 + y^2 &= 5/4 \end{aligned}$$

to FALSIFY.....

∴ we ask: does a radial square of ($\approx \pi$)'s quarter satisfy the width?



$$(\approx \pi/4)^2 \approx 0.61685... \neq w \approx 0.618...$$

$$\therefore \pi \neq 3.14159265358979323846...$$

...for failing to geometrically satisfy the pi annulus' uniform width thus implying a *presently enduring* 'Blunder of Millennia'.