ON AN ALGEBRAIC PROOF π ≠ 3.14159...
USING THE PYTHAGOREAN THEOREM
TO SOLVE FOR PI (WITH EXACTITUDE)

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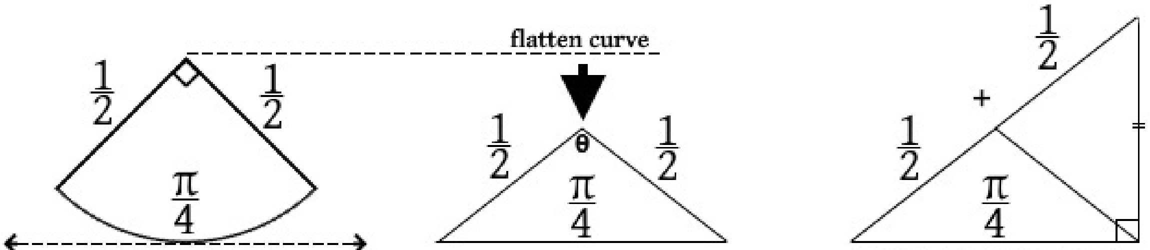


Let w be the uniform width of the annulus whose area is π & let it be orthogonal to π/4.

PI ANNULUS:

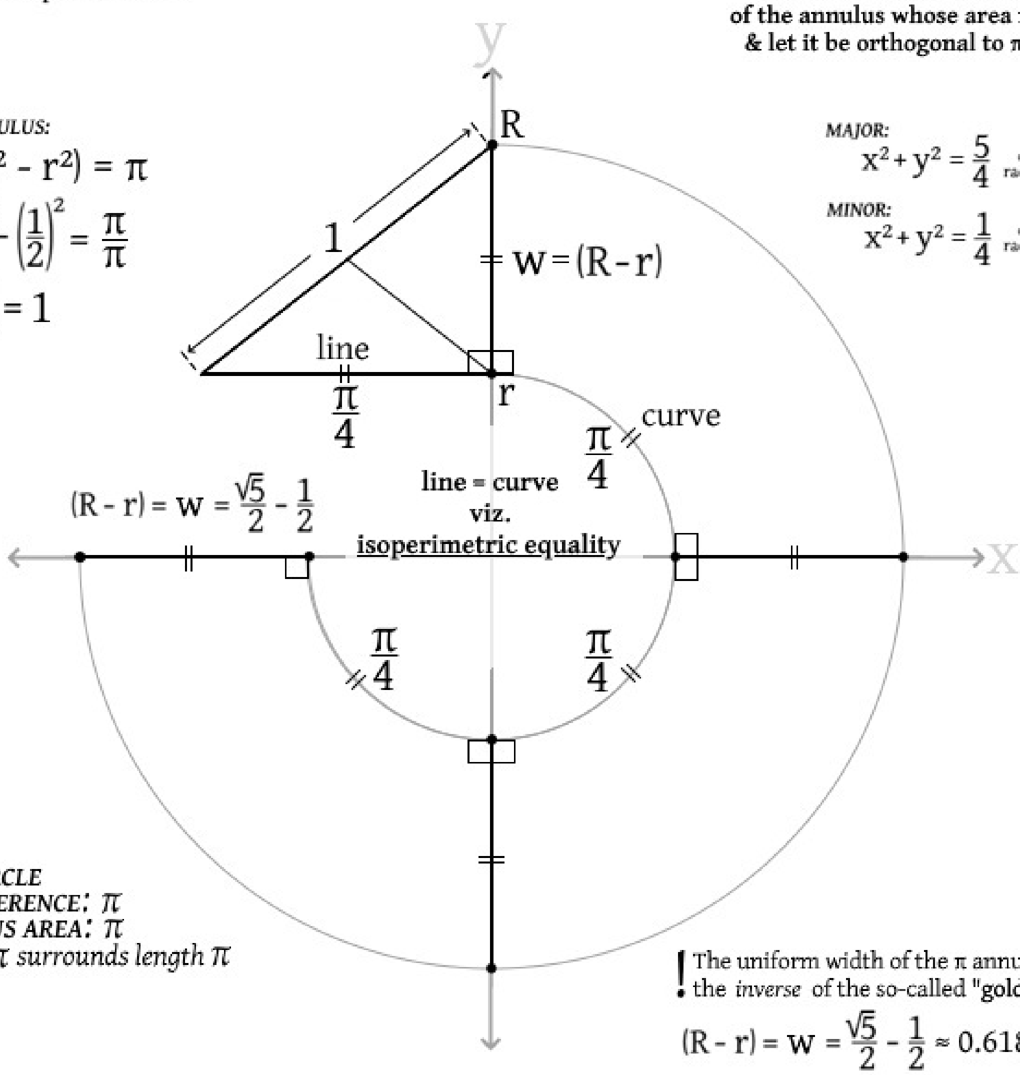
$$\pi(R^2 - r^2) = \pi$$

$$\left(\frac{\sqrt{5}}{2}\right)^2 - \left(\frac{1}{2}\right)^2 = \frac{\pi}{\pi}$$

$$\frac{5}{4} - \frac{1}{4} = 1$$

MAJOR: $x^2 + y^2 = \frac{5}{4}$ of radius $R = \frac{\sqrt{5}}{2}$

MINOR: $x^2 + y^2 = \frac{1}{4}$ of radius $r = \frac{1}{2}$



MINOR CIRCLE CIRCUMFERENCE: π
ANNULUS AREA: π
∴ area π surrounds length π

! The uniform width of the π annulus is equal to the *inverse* of the so-called "**golden ratio**":

$$(R - r) = w = \frac{\sqrt{5}}{2} - \frac{1}{2} \approx 0.6180339887\ldots$$

Use the Pythagorean theorem to solve for π with exactitude:

$$\left(\frac{\sqrt{5}}{2} - \frac{1}{2}\right)^2 + \left(\frac{\pi}{4}\right)^2 = 1^2$$

$$\therefore \pi = 4\sqrt{\frac{\sqrt{5}}{2} - \frac{1}{2}}$$

and is __not__ transcendental, but is __algebraic__ for being a root of polynomial $x^4 + 16x^2 - 256 = 0$.

$$\approx 3.1446055110296931\,44\ldots$$

$$\neq 3.14159265358979\ldots$$

Over 2000 years ago, Archimedes of Syracuse made an assumption: he assumed that inscribed & circumscribed polygons' perimeters indefinitely approach the circumference of a circle as their number of sides n approaches so-called "infinity". This assumption has gone unchallenged for millennia.

"Science" is a process of discovery by way of incessantly & unreservedly challenging basic underlying assumptions, beliefs & conclusions. ***Using it, we challenge Archimedes' assumption.***

Archimedes was unaware of what mathematicians now know as ***'isoperimetric inequality'*** which states: among all plane figures, the equality condition is only satisfied if/as the containing length is none other than a perfect circle. This inequality was proven only as recently as the 19th century however was never retroactively applied to non-circle / polygonal methods of exhaustion used to approximate the circle constant pi.

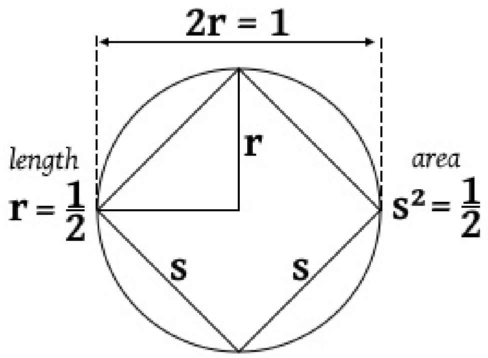
The isoperimetric inequality applies to ***both***:

i. Archimedes' lower- and upper-bounds of $\mathbf{223/71 < \pi < 22/7}$ as well as
ii. Archimedes' resulting decimation of **3.14159...** as the circ. of a circle whose diameter is 1.000...

& ***both*** are subject to the inequality & are thus ***invalid.***

For containing length pi, the radius of the circle $r = 1/2 = 0.5000...$ is numerically equal to the area of the square inscribed therein ($s^2 = 1/2$) implying a:

UNITARY LENGTH/AREA NUMERICAL EQUIVALENCY
(ULANE)



$$\frac{\mathbf{r}}{\mathbf{s}^2} = \frac{1/2}{1/2} = 1 \ \frac{\textit{unit}}{\textit{unit squared}}$$

UNITARY
for: concerning the circle whose diameter is 1 while/as contained by the unit square whose area is 1 squared unit.

LENGTH/AREA
for: concerning the ratio of unit length (radius) per unit of area (of insc. square.)

NUMERICAL EQUIVALENCY
for: both r & s^2 are each numerically equal to **1/2** in their resp. 1D & 2D dimensions simulatenously.

This ULANE is observed by ***neither*** inscribed nor circumscribed polygon for any/all sides n.

The application of the isoperimetric inequality to pi as 3.14159... is the outcome of a scientific theory of ***human suffering*** which finds: all human suffering since at least the time of Archimedes has occurred & presently endures on a base of a deficient circle constant. That is: $\pi \neq 3.14159...$ but rather $\pi = 4\sqrt{w}$ for uniform width w of the pi annulus previously shown.

Finally, concerning the outstanding Riemann Hypothesis problem:

BLUNDER OF MILLENNIA
HYPOTHESIS

The *unsolved* status of the Riemann Hypothesis problem is owing to an ***unrecognized inexactitude*** in/as the hitherto endorsed approximation & decimation of the circle constant pi

3.14159...

According to the Pythagorean theorem,

$\pi \neq 3.14159...$

but is instead equal to ***four roots*** of the ***uniform width*** of a plotted ***pi annulus*** (whose area is π & whose minor circ. is π):

$\pi = 4\sqrt{w}$
for $w = r\sqrt{5} - r$
for $r = 1/2 = 0.5000...$

and is approx.

3.144605511029693144...