ISSN: 2639-0108

Short Communication

Advances in Theoretical & Computational Physics

Phi and Pi, as twin parameters

Relation formula among Phi and Pi

Fernando Mancebo Rodriguez

*Corresponding author
Fernando Mancebo Rodriguez

Submitted: 16 Sep 2021; **Accepted:** 24 Sep 2021; **Published:** 30 Sep 2021

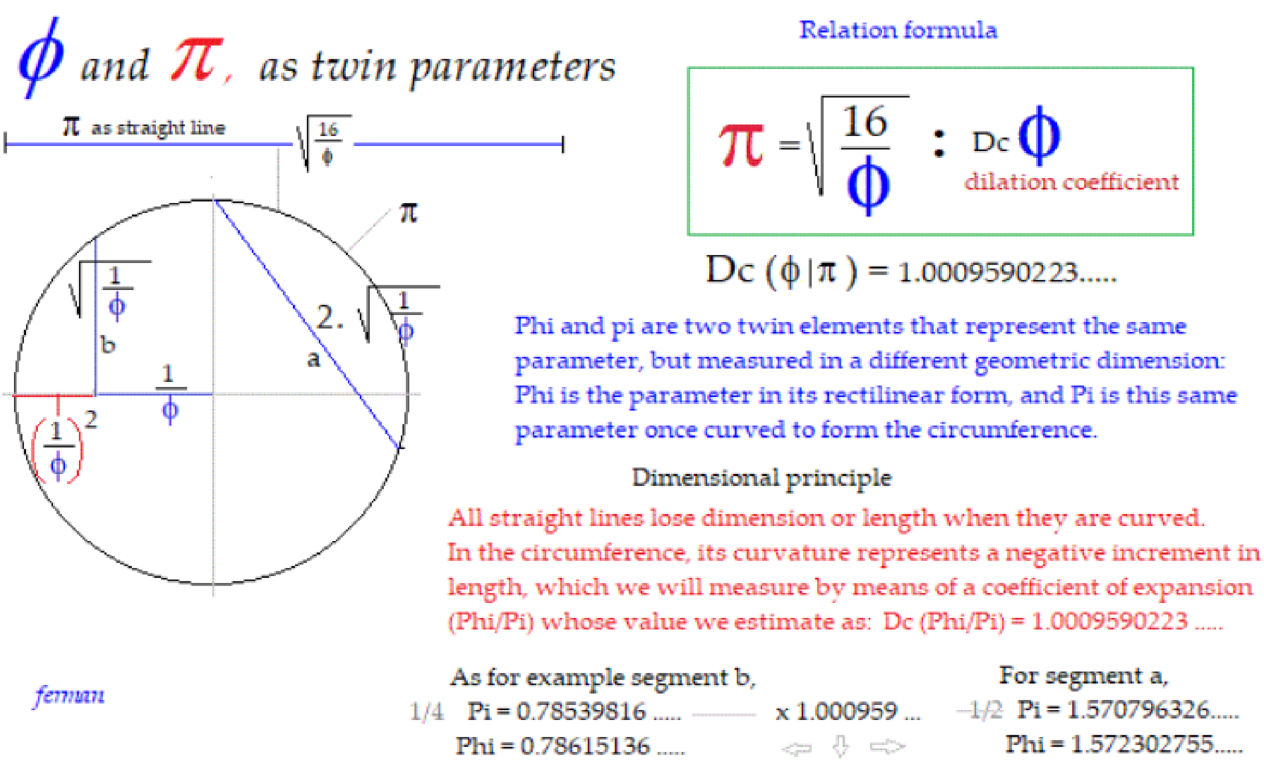
Citation: *Fernando Mancebo Rodriguez. (2021). Phi and Pi, as twin parameters Relation formula among Phi and Pi. Adv Theo Comp Phy, 4(3), 275-277.*

Abstract

In this paper, the Phi and Pi parameters are considered, studied and formulated as twin elements but measured in different shape or geometric dimension. One, the parameter Pi as a curved geometric element (semi-circumference) and the other, the parameter Phi built and measured in a rectilinear way. This transformation of one curved into another rectilinear produces an increase in dimension or length that is measured by a dilation coefficient Dc.

Keywords: Phi, Pi, Straight, Curve, Line, Formula, Expansion, Coefficient.

Curves lose dimension or length



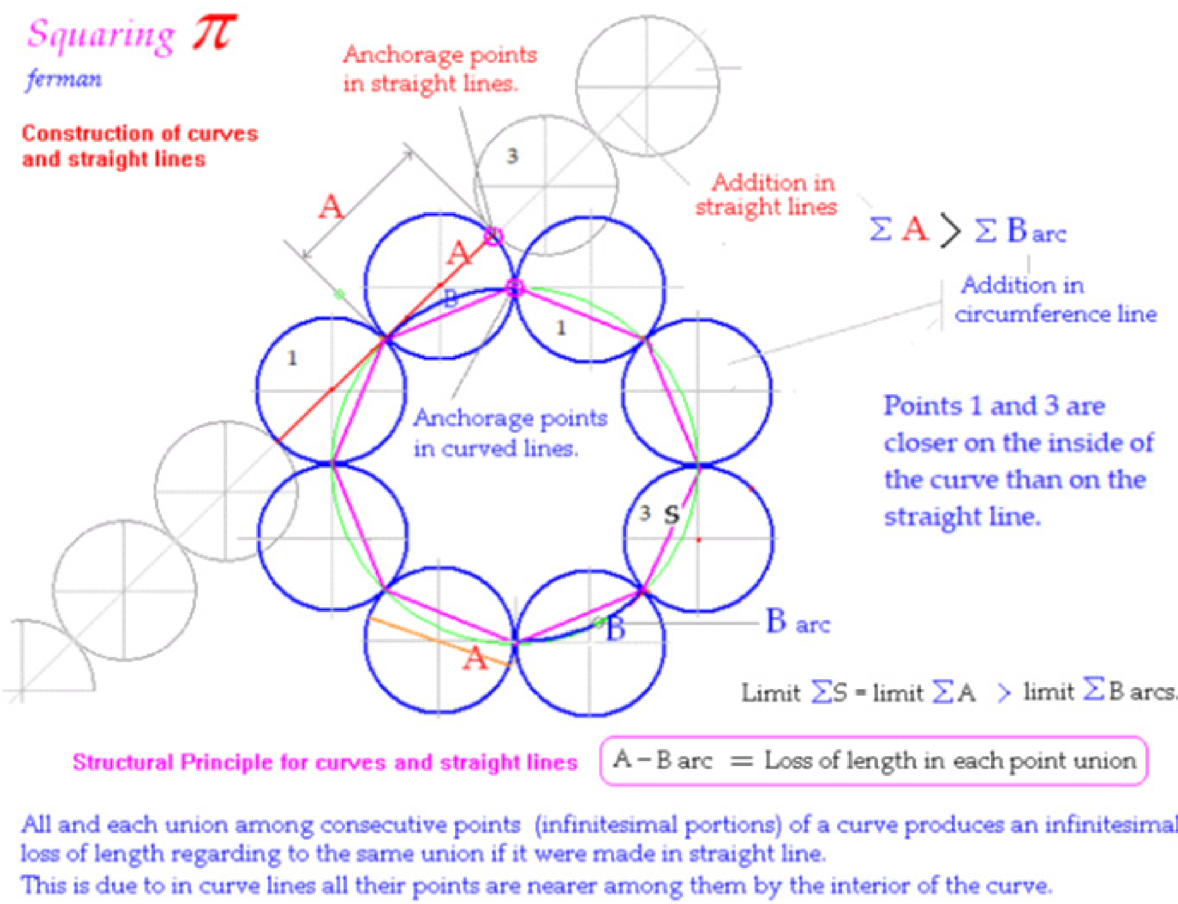
Friends, from my beginnings to review the peculiarities of the number Pi, (with the first work on the squaring Pi: Pi direct formula) I realized that if we bend a straight line to form a curve, this line loses length as be in a curved line since all its points are closer to each other on the inside of the curve. But once observing the large number of internal segments of the circumference that were very close to being directed to the Phi number, I began to think and deduce that perhaps these two parameters (pi and Phi) were not only parallel in their components, but perhaps the same parameter, but measured in a different way, or if we want, in different dimensions: straight dimension and curved dimension. After many attempts to square the circle and measure multiple interior segments of the circumference, this idea became established and the real reason why an easy squaring of the circle is not possible: Because when the segments relative to Pi lose dimension, it is not possible to square them with any linear segment within the circumference. Nevertheless, segments of Phi yes, they have multiple squares and interrelation between them. For this reason, the current reasoning that it is not possible to square the circle because Pi is transcendental, for me, they face consistency since in no geometric construction we get to use thousands of decimal digits.

And also, there are other segments with infinite decimal places and we can construct them, such as the square root of segment 2, or the diagonal of the square. We also do it with the segment 1/3 = 0.333333 .... which have infinite decimal places.

Therefore, and in summary, we can say that:
Phi and pi are two twin elements that represent the same parameter, but measured in a different geometric dimension: Phi is the parameter in its rectilinear form, and Pi is this same parameter once curved to form the circumference.

And as a geometric principle:
All straight lines lose dimension or length when they are curved. In the circumference, its curvature represents a negative increment in length, which we will measure by means of a coefficient of expansion (Phi/Pi) whose value we estimate as: Dc (Phi/Pi) = 1.0009590223....

For example, the segment b,
at Pi = 0.785398163....
x 1.0009590223...
at Phi = 0.78615136....



References

1. Euclid, Elements, Book 6, Definition 3.
2. Weisstein, E. W. (2002). Golden ratio. https://mathworld. wolfram. com/.
3. Richard Fitzpatrick (translator). (2007). Euclid's Elements of Geometry. p. 156.
4. Herz-Fischler, R. (1987). A mathematical history of division in extreme and mean ratio. Wilfrid Laurier Univ. Press.
5. Donald E. Simanek. (2013). "Fibonacci Flim-Flam". Archived from the original on January 9, 2010.
6. Markowsky, George. (1992). "Misconceptions about the Golden Ratio" (PDF). College Mathematics Journal.
7. "Compendium of Mathematical Symbols". Math Vault. 2020-03-01. Retrieved 2020-08-10.