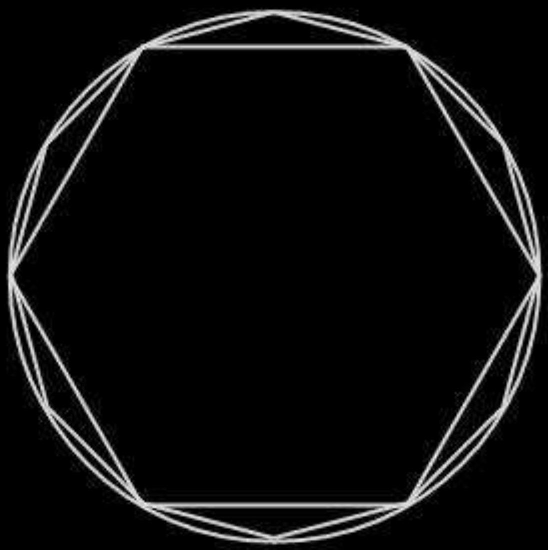
A SHOT IN THE DARK

Geometrical theorems are the prototypes of many of the topics in mathematics. Geometry is built on the foundation of superposition. It is the ultimate reasoning in geometry. The instruments are straightedge and compass exclusively.
The operation range of these two instruments is very restricted since one sketches straight lines and the other one sketches curved lines. What expands the range of operations, is deliberation in geometrical subjects and creativity in using these two instruments towards constructing calculable figures and discovering the associated principles.
The circumference of the circle is divided into three hundred and sixty equal sections. Nobody knows about the procedure of the division since no reasonable method has been reported from any reliable source. Supposing that we can achieve sectioning a seventy two degree arc out of the circumference by inscribing a regular pentagon and subtracting a sixty degree arc from that, we come up to the twelve degree arc. Through further bisecting the variation, we reach to the three degree arc. Experiments have shown us that there is no way to get to the arc unit which is the one degree, by the possessing angles such as the sixty degree, forty five degree, fifteen degree… through the basic operations. More clearly, we can not attain the two degrees, four degrees, five degrees… and the chords either. Consequently the process of calculating a major extent of the trigonometric values is totally obscure. The issue inevitably concerns the credibility and precision of the values which have been constantly relied on. Through what reasoning have we managed to determine the sides of the countless triangles that get inscribed in a half of the circle other than generalization of our limited geometrical acquaintance? Considering that geometry is the applied mathematics, how have the overlooked slight errors affected the accuracy of operations in large scales?
Without the essential creativity and comprehension mentioned above, we have no choice but to insert the presumption factor somewhere over the course of our calculations and artificially expand conjectures. Struggling to bypass the original complication, we are trapped by the sequence of presumptions. The shadow of ignorance is constantly over us until we put an end to the geometrical challenge by finding the ultimate geometrical solution.(١)
Arithmetic and geometry are two topics which are absolutely different by the nature. The former is an abstract mental concept and the latter is a tangible dynamic phenomenon. A length segment does not naturally allocate any number to itself. It is we who define geometrical units and call them by different names. In arithmetic, we only have one number three, but in geometry, any line segment can be called three. We always simplify and omit the number one in algebra, but can

we overlook a length segment in geometry? The question is, to what extent can operations performed on one entity, actually apply to another one?
Over the time, we have been constantly and inattentively crossing the line by diverting and switching between the principles of these two discrete entities in our procedures. Such an approach has resulted in making serious mistakes and also giving rise to math phobia by confusing students and enthusiasts. For instance, we have frequently taken a line segment as a ratio and vice versa. Addition, subtraction, and division can somehow be simulated in geometry, but how do we to multiply a line segment by another line segment? Is it possible to suppose a square root or a negative number for a length segment? How could a mere calculation method such as algebra or trigonometry which is an offspring of geometry itself, independently determine an original concept in unexplored realms of geometry?
Let’s go over a couple of illustrations:

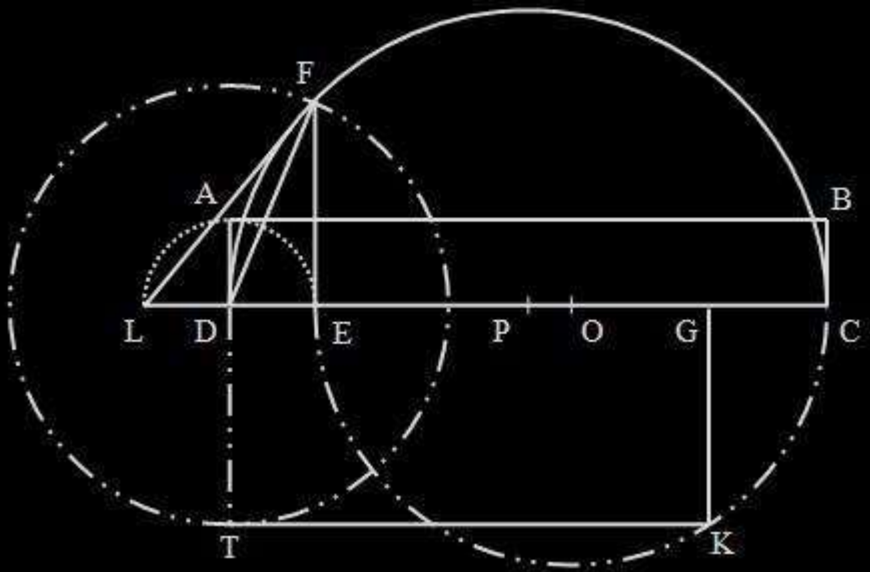


As we know, we can inscribe a regular hexagon inside the circle by using the radius. Halving the radius, we attain the regular dodecagon… and so on.
Therefore we conclude that as we proceed with dividing the diameter, the number of the sides of the regular inscribed polygon increases. This way we induce the following proportion:

$P_{6n} \propto \frac{r}{n}$ Accordingly in order to attain the regular pentagon or the regular heptagon, we use the fractions ٥/٦ and ٧/٦.
Applying superposition however, the circle does not correspond to the algebraic induction and noticeably follows its own path. In other words, the proportions of the cords do not vary by the conceived regular rate as it is the case for the arcs.
This example fairly demonstrates the essence of geometrical challenges.

The most critical issue in many fields, has been developing self executing methods without essential geometrical causes and assuming that they can independently operate in any field regardless of the associated parameters and principles; **derivative methods with absolutely no evidence of a binding aspect regarding an interference or convergence to geometrical phenomena such as lines and arcs by any means.**(٢)

According to the next figure we have:



$$DE \times EC = DF^2$$

$$GC \times GE = GK^2$$

$$DC = 6$$

$$AD = 1$$

This way the following quadratic equation is generated:

$x^2 + 5x - 6 = 0$ Thereby we can determine the lengths of the line segments GE and GC.

This method which has been initiated based on squaring the rectangle, has been ironically applied in the case of trigonometric equations. In this example, even though we input the data, the equation results in a pair of numbers as x. Failing to anticipate the obscurity of dual answers, the equation implies x٢ to be equivalent to DF٢ which equals ٦ since both of them are the roots multiplied according to the theorem. To make a long story short, such false impressions reveal that algebra is blind and does not have the capacity of leading us anywhere independently, unless we take the compulsive steps mentioned earlier.(٣) What emphasizes this fact, is merely the possibility of algebraic sophistries, in spite any justification. For instance, supposing a and b equal to ٢ we can write:

$$a = b$$

$$a^2 = ab$$

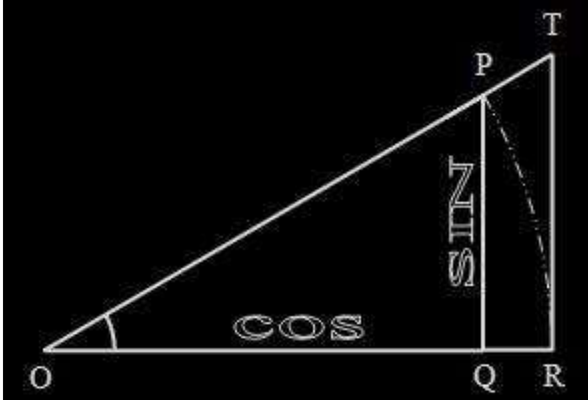
$$a^2 - b^2 = ab - b^2$$

$$(a - b)(a + b) = b(a - b)$$

$$a + b = b$$

$$4 = 2$$

Let’s not forget that failing to notice the distinct line between geometry and arithmetic as mentioned, complicates the issue even further. Note that in the previous example, the line segment with the length of one unit, has a functional role throughout the entire operation and can not get simplified and omitted.
Here is another example of the miscomprehensions. According to the figure one can write:



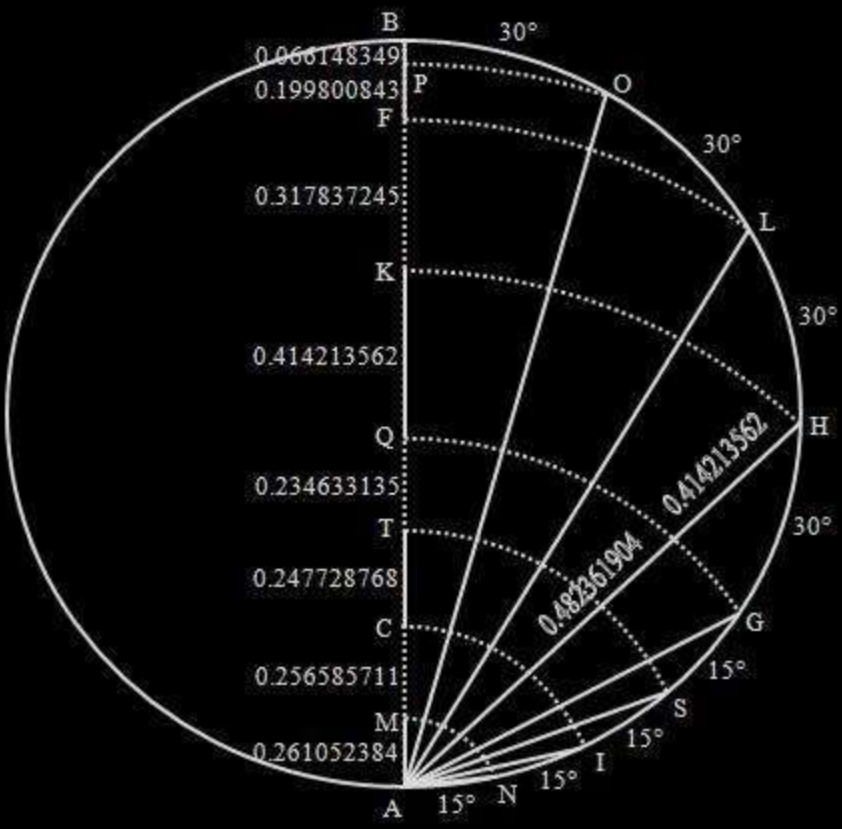
$$\tan\theta = \frac{\sin\theta}{\cos\theta} \Rightarrow QO \times RT = PQ$$

Consequently we have:

$$rectangle = line\ segment$$

That makes plane identical to length!
These sorts of irrationalities and misconceptions such as transcendence, are evidences of being on the wrong track due to neglecting the authenticity and superiority of the geometrical substances.(٤) It has been said that certain numbers can not be constructed. Let’s complete that statement this way: It is absolutely impossible to construct numbers. A number is an incorporeal nonfigurative notion which can only be perceived conditionally or conventionally. Only under certain circumstances, lines can appear as numbers.(٥) Nobody is perfect!
With regards to the reliability and the solidity of the foundational principles of geometry, how do we justify and eliminate the occurred contradictions?(٦)
Through a little bit of concentration, one can sense the independence of geometry from algebra. The pathless features indicated in the next figure, highlight certain aspects of the nature of geometry; substantial irregularities pointing out that an

abstract algebraic approach to a geometrical phenomenon is practically a shot in the dark.(٧)



To suppose that it is the time to close the deal on plane geometry having entirely explored and illustrated every possible aspect, is an evident deceit. There still remain many unsolved mysteries and crucial challenges to be taken care of in this primary field; essential for taking the further steps in mathematics.
Should there be further concerns, you may refer to our publications.