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Angle Trisection Based on The Growth Rate of The Golden Ratio

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Abstract: On the basis of the golden ratio and the geometric compass, every angle was divided into three equal parts. In general, it has been proven that the problem of triangulation of an angle cannot be solved On the basis of the golden ratio and the expanding of the angle. The relationship of golden relativity with Pi number and Euler's number has not been investigated to solve impossible problems. According to the investigation of events in six-dimensional space-time, with the simultaneous movement of two arms of the compass based on the golden ratio, every angle was divided into three equal parts. The growth rate based on the golden ratio is the key to solving most intractable mathematical and physical problems.

Keywords: angle trisection; six-dimensional time-space; golden ratio

1. Introduction

Angle trisection with a geometric compass is one of the unsolvable problems of ancient times. By drawing the angle bisector in several steps, some angles can be divided into three equal parts. There are different ways to Angle trisection [1–3].

Probir Roy's proposed Method is a much more detailed and comprehensive one [4]. Although this is not possible from the point of view of trigonometry, if unsolvable problems can be examined over time, the results will be different. According to the theory of general balance in six dimensions of space and time [5], events occur over time. For example, a human being can pass through several gates like an electron. When you draw a circle with a geometric compass, you follow the number pi. Now, if the radius of the circle also changes, you can overcome the limitations in trigonometry. If the fixed arm of the geometric compass moves in a desired direction at the same time as the compass rotates around its axis, you will overcome all the limitations of algebra, and trigonometry.

2. Golden Ratio

The golden ratio in the six-dimensional space-time arises from the doubling of the time dimension stress in relation to the space dimension. In principle, the golden constant follows the doubling ratio (2.1). In the six-dimensional space-time, the golden constant is directly related to the number pi and the Euler (2.2). Pi is a different number over time (2.3).

$$\frac{1+\sqrt{5}}{2} = \varphi \quad (2.1)$$

$$\left(\frac{1}{2}\right)^6 \pi^3 \cong ln(\varphi) \quad (2.2)$$

$$\pi(past) \times \pi(present) \times \pi(future) = \pi^3 \quad (2.3)$$

The ratio of the circumference to the diameter with the double expansion of the width to the length in a circle has a direct relationship with the eccentricity ratio created (2.4) Figure 1.

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$$\sqrt{1-\frac{k^2}{l^2}} = sin\left(cos^{-1}\frac{k}{l}\right) \propto \frac{\pi^3}{a+b} \tag{2.4}$$

$$\theta = cos^{-1}\left(\frac{k}{l}\right) \qquad cos^2(60)cos^2(120)cos^2(120) = \left(\frac{1}{2}\right)^6$$

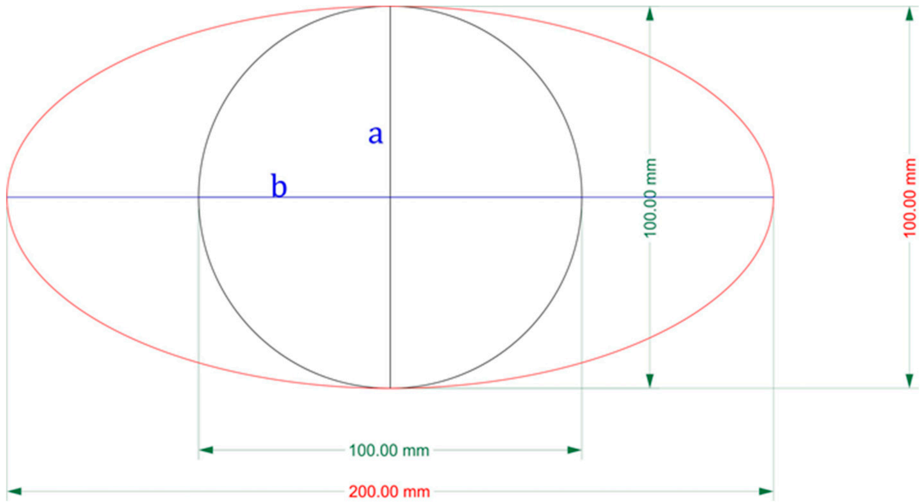

Figure 1. With expansion and eccentricity created in a circle, the ratio of the circumference to the diameter of the circle depends on the growth rate.

The golden ratio can be obtained using a geometric compass, Figure 2.

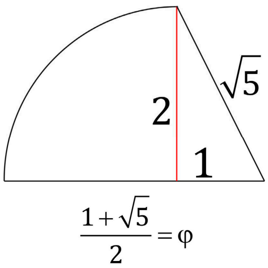

Figure 2. Doubling ratio and pi are factors that create the golden constant.

3. Methods

At the same time as the bow is drawn by the geometric compass, the fixed needle also moves on one of the sides of the angle equal to the opening of the compass, Figure 3.

The rotation speed of the geometric compass is twice the speed of the needle movement (3.1). By repeating this work on the other side, the angle is divided into two unequal parts. that one part is twice the other part, Figure 4.

$$\frac{V_1+\sqrt{V^2{}_1+V^2{}_2}}{V_2} = \varphi \tag{3.1}$$

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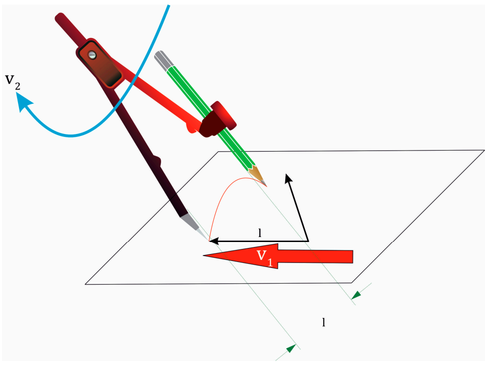

Figure 3. At the same time as the compass rotates, the needle also moves on the line of the angle. The speed of one arm is twice as much As the other arm.

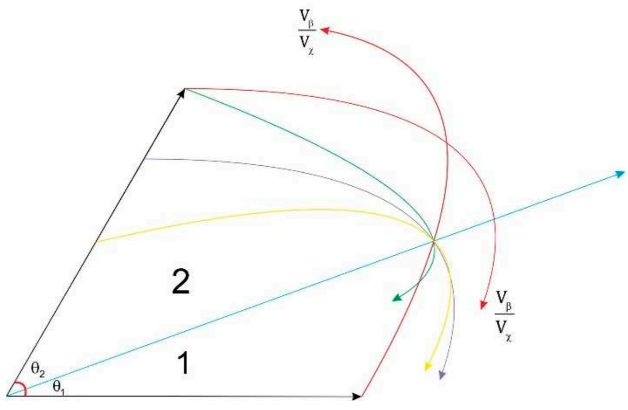

Figure 4. Based on this, by changing the speed and different ratios, there is an infinite way to divide the angle.

As the length of the sides of an angle increases, that angle expands in the plane. Due to the eccentricity of the ellipse and the double ratio of the golden ratio, the distance between the points chosen to draw the arcs should decrease exponentially.Based on bisecting a line with a geometric compass and the golden ratio, the angle is easily divided into three or more equal parts, Figures 5 and 6.

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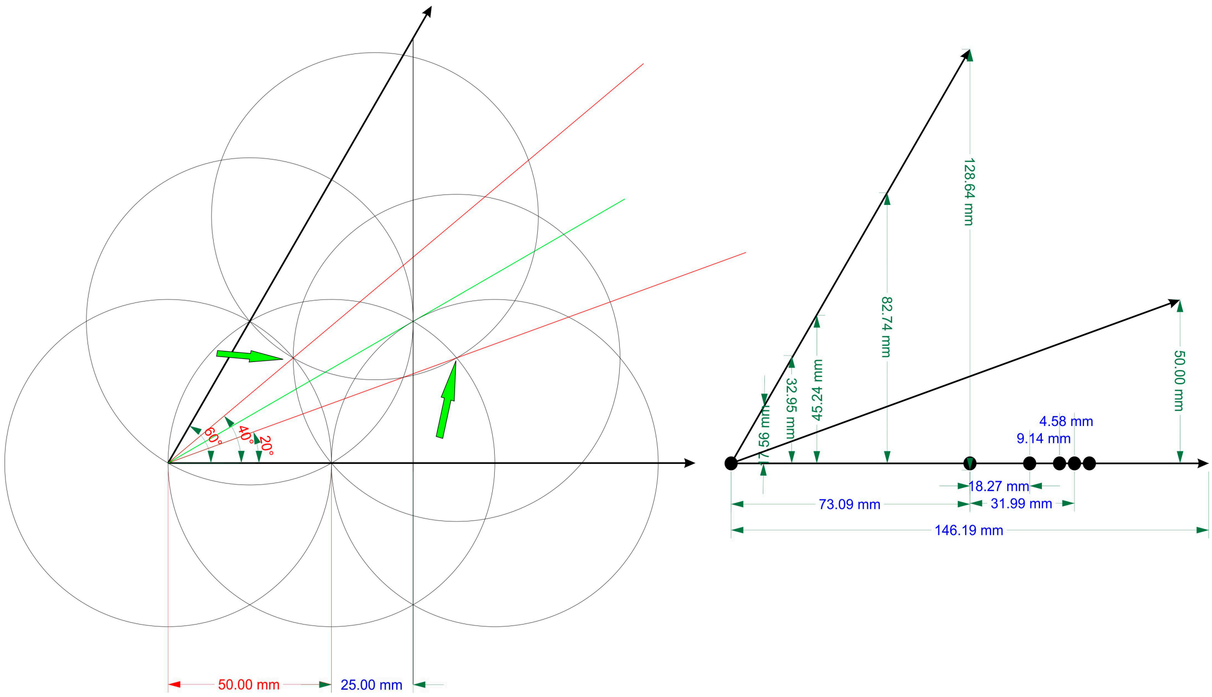

Figure 5. The angle of 60 degrees is divided into three equal parts using the golden ratio.

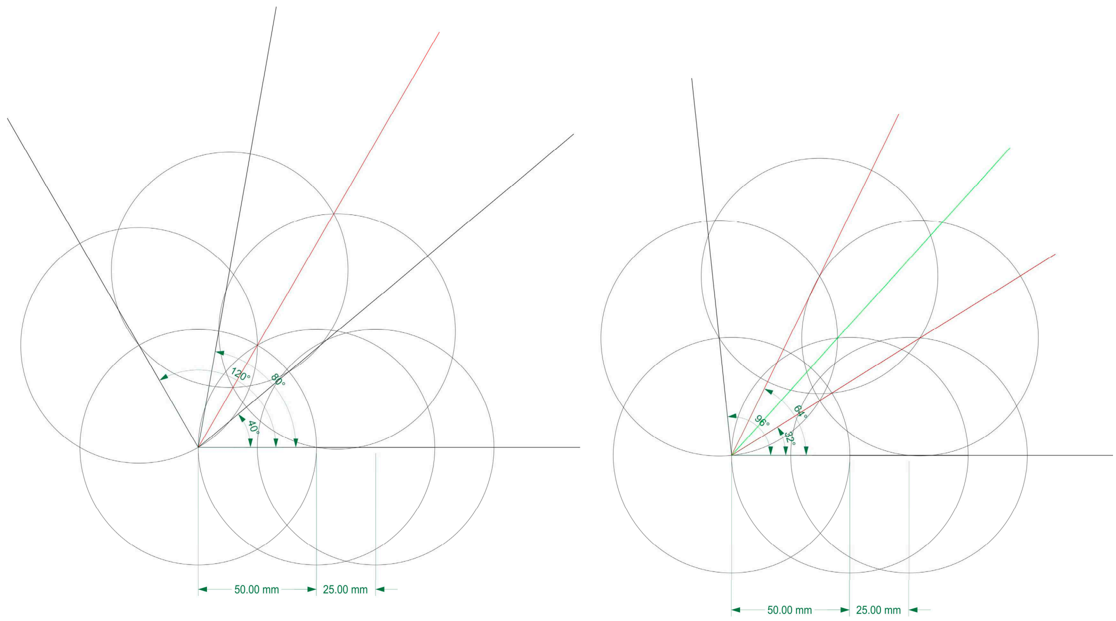

Figure 6. Two angles of 96 degrees and 120 degrees were divided into three equal parts with the same method as before.

This method was used for centuries in Islamic and ancient Egypt architecture to create fractals and geometric proportions, Figures 7 and 8.

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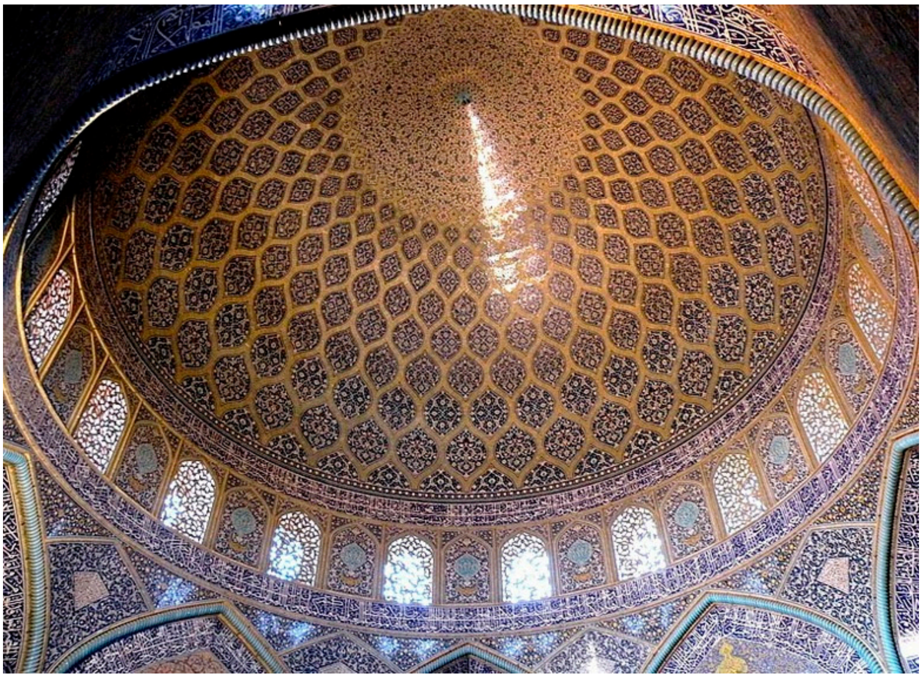

Figure 7. This mosque Uses two movable arms, and the curvature of the dome and tiles based on geometric principles was designed.

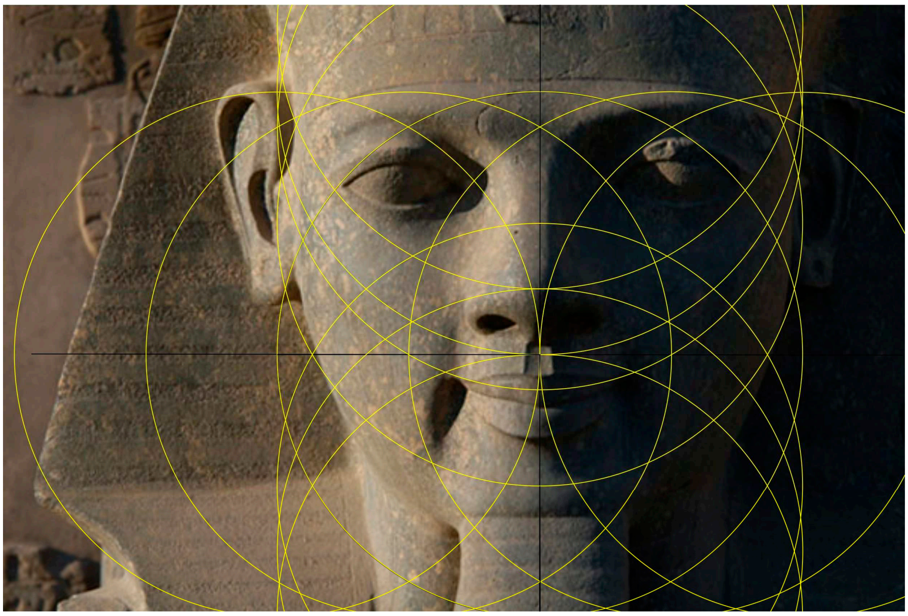

Figure 8. The very precise measurements of the golden ratio in this statue and the circles drawn on the golden points show the familiarity of the artist with the angle Trisection.

4. Results and Discussion

Examining events over time brings different ways to solve unsolved problems in mathematics, geometry and physics. However, it seems that the nature of the problem has changed. Algebraic operation changes over time. There is no certainty for physics and math facts to remain constant over time. Changing the laws of Euclidean geometry in curved spaces shows the realness of time. Geocentrism prevented the creation of new ideas for years. It was an undeniable truth. No equation has objectivity over time. And all the facts in the world are dependent on the passing of time. Natural numbers and fundamental natural constants are related to each other [6]. The growth of plants, rain, biological molecules, the growth and metabolism of life organs, the structure of the universe and chemical reactions can express this relationship. Based on the evaluation of the growth of different systems over time, it is possible to understand the relationship between the three numbers pi, phi and Euler's number with each other.As the length of the sides of the angle increases, the points chosen to draw the arc should also change. Drawing an ellipse instead of a circle with a geometric compass based on the eccentricity of the ellipse is the basic way to avoid the impossibility of angle trisection. In the civilizations of Egypt and Iran, mechanical tools for coordinating different arms were designed based on the evaluation of the golden constant growth, fractals, etc. Basically, the method of solving different problems over time has its roots in ancient civilizations. Buffon's needle problem proves the relationship of pi in the past, present, and future times, with Euler's number and the golden constant in the six-dimensional space-time. The method presented in this paper can be used to prove many complex problems by examining events over time. Squaring the circle or even more complex problems such as Hodge's conjecture and Riemann hypothesis can also be examined from this point of view.

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