# Beautiful Algebra

S. Kalimuthu

SF 211, Kanjampatti P.O, Pollachi Via, Tamil Nadu 642003, India
Email**: postulate.kalimuthu0@gmail.com**

**Abstract:** The square root of two ways irrational.The sum of the two odds is always an even number. The polynomial quadratic equation cannot have more than two solutions. And in the late of nineteenth cenntury,Beltrami,Cayley,Klein , Poincare  and others showed the independency of the parallel postulate.But the author looked at the other side of the coin and obtained an interesting result. [Researcher. 2009;1(5):18-19]. (ISSN: 1553-9865).

**Keywords:** Euclid,elements, postulates,triangles, non-Euclidean geometries, algebra

**Construction:** Draw a spherical line AA'.On AA' take a point O. Make OB such that OB = OA.Choose a point C not on AA'. Join A and C. Join B and C.On BC take a point S.Join A and S.Produce As up to W.Join C and W.And join B and W.Join C and O cutting As at R. Since points C and O lie on the opposite sides of As Co can meet AS. Please note that Euclid uses this principle. [ 1, prop. 10 ] Now extend RS up to C'.On OC' cut off OD such that OD = OR. Small letters denote the sum of the interior angles of triangles and quadrilaterial RSBO.Also, let a,b,c,d,e,f,g,h,I,j,k,l,t and u respectively refer to   the sum of the interior angles of triangles and quadrilaterials ACW, ACS, RCW, ABW, ROBW, ABS, ABD, ACD, ACO, ARD, BCD, BOC, RSBD and BWC.
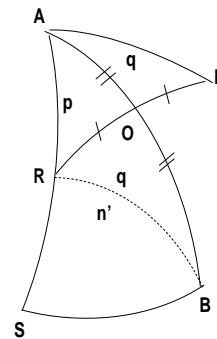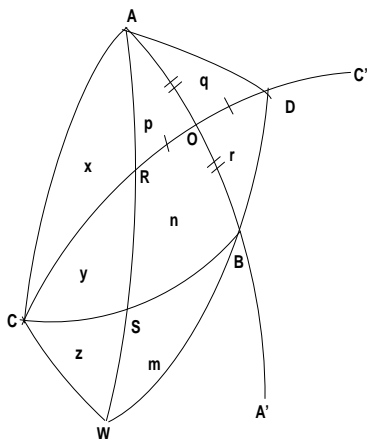


**Figure II [Spherical]**



**Figure I [Spherical]**

**Results:**

The angles ARS, RSW, CRO, ROD, AOB, BSC are all straight angles and so their measures are all equal to 180 degrees. Let v be the value of this (1).

Assuming (1), x + y + z = 2v + a     (2)
$\qquad$ v + b = x + y          (3)
$\qquad$ y + z = v + c          (4)
$\qquad$ 3 v + d = m + n + p   (5)
$\qquad$ m + n   = v + e     (6)
$\qquad$ 2 v + f = p + n       (7)
$\qquad$ q + r   = v + g      (8)
$\qquad$ 2 v + h = x + p+q   (9)
$\qquad$ x+ p   = v + I       (10)
$\qquad$ v + j   = p + q       (11)
$\qquad$ y + n + r   = 3v + k (12)
$\qquad$ 2v + l   = y + n      (13)
$\qquad$ n+ r   = v + t       (14)
$\qquad$ v + u = z + m         (15)

Adding (2) to (15), 2 v + u + l + j + h + f + d + b + y + z + 3r

$= m + t + k + I + q + g + e + c + a + 3p$

$$p + q \quad = v + j \quad (11)$$
$$v + c \quad = y + z \quad (4)$$
$$m + n + p = 3v + d \quad (5)$$
$$x + p + q = 2v + (9)$$

Adding the above five eqns., $x + n + u + f + b + 3r = 3v + t + k + i + g + e + a$

$$v + t = n + r \quad\quad (14)$$
Putting (13) in (12), $\quad v + k = l + r$

$$v + i \quad\quad = x + p \quad\quad (10)$$
$$v + g \quad = q + r \quad\quad (8)$$
$$v + e \quad\quad = m + n \quad\quad (6)$$

Applying (3) in (2), a $a + v = b + z$
$$z + m \quad\quad = v + u \quad\quad (15)$$

Adding the above eight relations, f
$$v + f = p + q \quad\quad (16)$$

Now look at figure II, Join B and R.
By construction, $OA = OB$ and $OR = OD$. Angles AOD and ROB are equal.

So, by SAS correspondence, triangles AOD BOR are congruent.

So, $p + q + n' = 2v + f$ [see (7)]

Putting (16) in LHS.
$$n' = v \quad\quad (17)$$

i. e the sum of the interior angles of spherical triangle BSR is equal to 180 degrees (18).

## Discussion

The parallel postulate problem is 2300 years old. The great mathematicians from Proclus to Gauss, Bolyoi, Lobachevsky,Sachheri, Riemann and many others tried their best to prove the fifth Euclidean postulate as a theorem but failed. But their attempts gave birth to two consistent models of non - Euclidean geometries namely Lobacheskian and Riemannian. These geometries are widely used in quantum mechanics and general theory of relativity. So, (19) is a challenge to us [1 & 2]. Throughout this work, we have applied the basic operations of number theory and algebra. So, beyond all the doubt (18), is consistent. Geometry and physics have lived together in close association for centuries. The relationship has had its ups and downs, but for the past 125 years it has blossomed in a remarkable manner. New physical theories require very sophisticated geometrical models and will have in turn a profound influence on the burning problems of physics. The marriage of geometry with physics was arranged in Heaven. So, further probes may give rise to a new branch of geometric filed which will be a milestone in theoretical physics

**Correspondence to:**

Sennimalai Kalimuthu
SF 211 & 212/4
Kanjampatti P.O, Pollachi Via
Tamilnadu – 642 003, INDIA
Mobile: 91 97885 49996
Email: postulate.kalimuthu0@gmail.com

**References:**
1. Euclid. Elements I, Prop. 1 - 28
2. Kalimuthu S. Pretty Algebra, Nature and Science 2009;7(6):pp 86 – 89.
3. Kalimuthu S. The parallel postulate- return of the roaring lion, Indian Journal of Science and Technology 2009; 2(4): pp16 – 22.
4. Kalimuthu S. Beautiful Geometry, Nature and Science 2009;7(7):pp88 – 89.
5. Kalimuthu S. In the search for a new field of mathematics, Nature and Science 2009;7(7):pp33-40.

6/5/2009