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On the New Branch of Mathematical Science-Part 2

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Abstract: The fifth Euclidean postulate problem in geometry is 2300 year . This postula known as Euclid's parallel postulate. The great mathematicians tried to deduce th postulate from the other four postulates. But unfortunately nobody c suc in this geometrical battle. The studies devoted to this problem led to the origin of two non-Euclid eometries. The authors resurveyed and established and gave a proof for this probl

Key words: Euclid, elements, postulates, non-Euclidean ge ries, physical applications

INTRODUCTION

Construction: Construct two congruent Lambert quadrilaterals as shown in Fig. 1. In Fig. 1, AB = BC = CF, CD is common. The angles at A, B, C, F E are right angles.

In this research, we do not assume Euclid's fifth postulate.

METHODS AND MATE LS

In this study we begin where heri an missed to obtain the resul In dies th application of number theo atrix a set theory and quadratic, cubic a uadric equa may be used.

RESU

Case 1: In bert quadrilateral A , if we assume that side AND are equal, then it is a Saccheri quadri l. Sac showed that the summit angles in his q are equ Since the angle at A is 90° the ang is also . This establishes Euclid's postulate t ucing the fifth Euclidean postu from th four postulates is not merely diffic impossible. So, AB and CD cannot be eq

e 2: Let us assume that CD is smaller than AB. On t tension of CD, make CM = AB. Join AM and EM ow by SASAS correspondence, Saccheri quadrilaterals ABCM and EFCM are congruent. So, angles M, CMA, C and FEM are equal. Since angle B 90° gle MAM is obtuse. i.e., x isobtuse. So, AME is more than 180°. Now ce AM up to R. From this we get that 2x °. This is a contradiction. So, in Lambert qua ABCD, side CD cannot be smaller than AB.

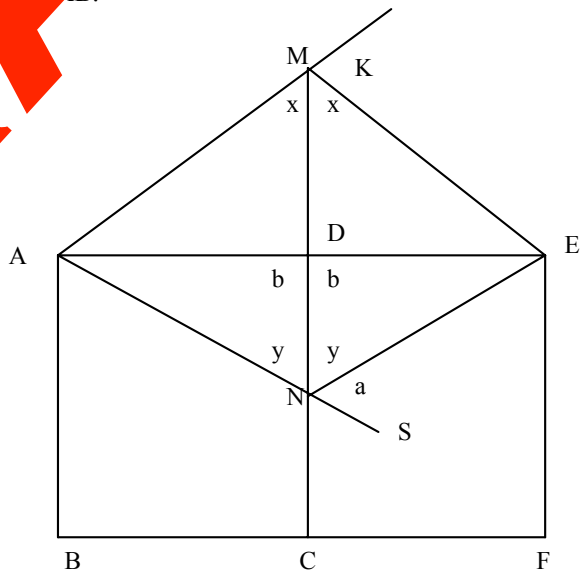

Fig. 1: Euclidean

Case 3: Let us assume CD is greater than AB. On CD, make CN = AB. Join AN and EN. As we have seen in case 2, Saccheri quadrilaterals ABCN and EFCN are

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congruent. So, the angles BAN, CAN, CNE and FEN are equal. Since the angle BAD is 90°, angle BAN is acute. So, the angles CAN and CNE are equal and acute. Since angle CAN is acute, angle AND is obtuse. So, 2y is more than 180°. Now extend AN up toS. Here 2y+a = 180°. This is also a contradiction So, our assumption that CD is greater than AB is not acceptable.

DISCUSSION

From cases 1 2 and 3 we get that in Lambert quadrilateral ABCD, the lateral sides AB and CD is neither greater, nor smaller or equal. This is a peculiar geometrical phenomenon. Why is so? Where is the mystery? It is up to interested researchers to probe into this problem and unlock the hidden treasure which will definitely give birth to a new field of mathematical science. If AD and CD are equal, consequently this establishes the fifth Euclidean postulate which is impossible to prove.[1, 2, 3, 4]

CONCLUSION

Labachevky, the noted Russian mathematician, the first person in the history of mathematics formulate a model of non-Euclidean geometry which also known as hyperbolic geometry. The formulae of this branch of geometry are widely use study the properties of atomic objects in quantu Also, the celebrated German math ticians Gauss and Riemann developed the ond br non-Euclidean geometry wh nothe ame elliptic geometry. Einstein usin ncepts of Riemannian geometry nearly took 10 years to for his general theory of relativity. The author not make any top claim but politely state that th sult is consistent. There is a hidden treasure. Furth dies will definitely unlock this problema proble definitely give birth to a new branch mathematics turning point in geometry is a mile tone in physics. Modern physics is fac many o The new future field will solve some phy ms such monopoles, quantum g , the proper electrons of an atom, a atter, dark sh of matter, gravitons an holes.

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