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On the New Branch of Mathematical Science

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Abstract: The origin of geometry dates back 30000(Thirty thousand y B.C lid of Alexandria (2300 B.C.) complied the Elements which is the first scientific book. Euclid five postulates. There is no proof for the fifth postulate. Almost all the ce mathematician their best to deduce this from the first four postulates. But unfortu y, was successful. Saccheri and Lambert worked on this problem for more than 50 years. The rs start where Saccheri and Lambert failed to obtain the following result/theorem. In a Lambe rilateral the fourth angel is the right angle or the lateral sides of a Lambert eral are equal. T proposition was proved by proof by contradiction.

Keywords: Euclid, elements, postulates and Non-Euclidea ometries

INTRODUCTION

The word geometry was derived from two G words geo meaning earth and metric meani measuring. Euclid of Alexandria wrote his firs scientific text book Elements. The Element assumes the following postulates[4]:

- A straight line may be draw etween wo points
- A piece of straight line extende indefinitely
- A circle may be dr with any giv dius and an arbitrary cente
- All right angle eq
- If a straight line crossing traight lines makes the inter ngles on the sa e less than two right s, the two straight s, if extended ind ely, m on that side on which are the a less th wo right angles

After Euc ny mat ticians tried their best to he abo ti fifth postulate. But nobody coul ceed. T ors attempt to deduce the fifth Eucli tulate om the first four axioms.

MATERIALS AND METHODS

is study, we begin where Saccheri and Lambert mis o achieve the result. In further studies, the applicat numb eory, matrix algebra and set theory may

RESULTS

et ABCD is the Lambert quadrilateral[2] where angles at A, B and C are right angles as shown in 1.

Case 1: Let CD is smaller than AB. On the extension of CD, cut off CE such that CE = AB. Join A and E. Now ABCE is a Saccheri quadrilateral[1,2,4]. The summit angles of Sacherri quadrilateral are equal. Since angle BAE is obtuse, we get that angle CEA is obtuse.

Erect EF perpendicular to ED. Angle DEF is 90°. From 1 and 2 we get a contradiction. This shows that case 1 is not possible.

Case 2: Let CD is greater that AB. On CD, cut off CH such that CH = AB. Join A and H. Now ABCH is a Saccheri quadrilateral. So, angles BAH and CHA are equal. Since angle BAH is acute, we get the angle CHA is also acute.

Construct HJ perpendicular to HC. Now the angle CHJ is 90°.

From 3 and 4 we get a contradiction. This proves that case 2 is also not acceptable.

From cases 1 and 2, we get that AB = CD.

If AB = CD, then the angle at D is 90°.

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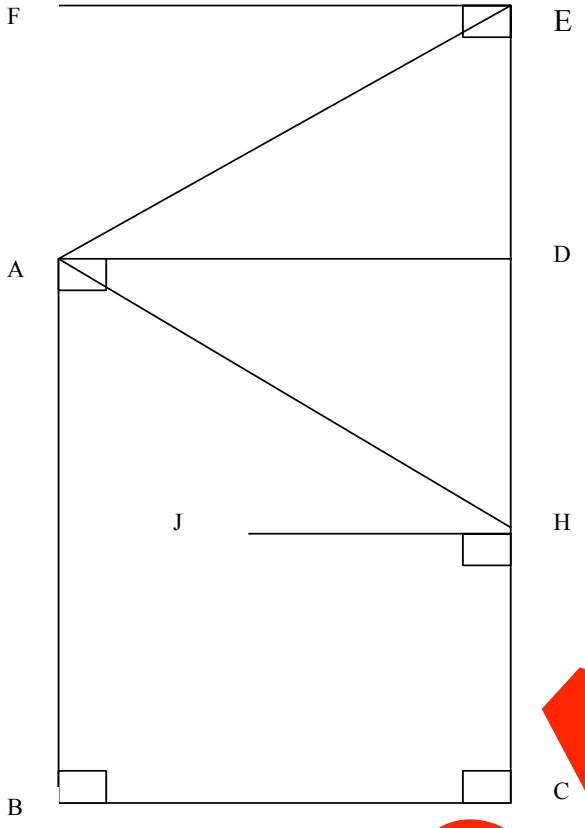

Fig. 1: Euclidean

DISCUSSIO

We have derived Eq. 5 hout g the fifth Euclidean postulate. This ves the par ostulate[1, 2]. But the mere existe consistent mo f Non-Euclidean geometri trate that Euc s 5th postulate is a spe case. his is a serious and curious proble Further studies reveal a new field of mathema science.

CONCLUSION

Labachevky, the noted Russian math ician, was the first person in the history of mat cs to formulate a model of non-Euclidean ge metry is also known as hyperbolic geometry formul this branch of geometry are widel ed to study t properties of atomic objects in q um ph s. Also, the celebrated German ma tician auss and Riemann developed the sec of n Euclidean geometry wh anoth e is e c geometry. Einstein using the o of Riemannian geomet ly took 10 year mulate his general theo ity. The autho s do not make any top cla but po tate that their result is consistent. There is a hidden re. Further studies will defi lock this prob ic problem and definit give birth to a new branch of mathematics. A turni oint in geom ry is also a mile stone in phys Modern physi facing many odds. The new future will solve e physical problems such as monopo uantum vity, the dual property of electrons o matter, dark matter, shadow of tter, gravitons and black holes.

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