The Goldbach's Theorem

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Abstract

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Diophantine Equations, Greatest Common Divisor, Goldbach Conjecture, Prime Numbers.

I. INTRODUCTION

On the strenght of the proof of the Goldbach's Conjecture [1], [2] and of the Guła's Theorem we get the Goldbach's Theorem.

II. THE GOLDBACH'S THEOREM

Theorem 1. *For all odd prime numbers* p, q *with* $p > q$:

$$\left\{\left[pq = \left(\frac{p+q}{2}\right)^2 - \left(\frac{p-q}{2}\right)^2 \wedge \frac{p+q}{2} + \frac{p-q}{2} = p \wedge \frac{p+q}{2} - \frac{p-q}{2} = q\right] \Leftrightarrow [p+q \in [8,10,12,\ldots] \wedge p-q \in [2,4,6,\ldots]]\right\}.$$

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[2]. Guła, L. W.: Several Treasures of the Queen of Mathematics, International Journal of Emerging Technology and Advanced Engineering, **Volume 6**, Issue 1, January 2016, pp 50-51 – http://www.ijetae.com/files/Volume6Issue1/IJETAE_0116_09.pdf