

**Review Form 1.7**

Journal Name:	<b>Asian Research Journal of Mathematics</b>
Manuscript Number:	<b>Ms_ARJOM_114355</b>
Title of the Manuscript:	<b>A LOGICAL PROOF OF THE POLIGNAC'S CONJECTURE BASED ON PARTITIONS OF AN EVEN NUMBER OF A NEW FORMULATION</b>
Type of the Article	<b>Original Research Article</b>

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**PART 1: Review Comments**

	<b>Reviewer's comment</b>	<b>Author's comment</b> (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<p><b>Compulsory</b> REVISION comments</p> <ol style="list-style-type: none"> <li>1. <b>Is the manuscript important for scientific community?</b> (Please write few sentences on this manuscript)</li> <li>2. <b>Is the title of the article suitable?</b> (If not please suggest an alternative title)</li> <li>3. <b>Is the abstract of the article comprehensive?</b></li> <li>4. <b>Are subsections and structure of the manuscript appropriate?</b></li> <li>5. <b>Do you think the manuscript is scientifically correct?</b></li> <li>6. <b>Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form.</b></li> </ol> <p><b><u>(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)</u></b></p>	<ol style="list-style-type: none"> <li>1. Yes, the manuscript appears to be important for the scientific community, particularly for mathematicians interested in number theory. Polignac's Conjecture is a significant unsolved problem in mathematics, and any progress toward proving or disproving it would be highly relevant and impactful. This study proposes a new approach utilizing partitions of even numbers, which could potentially contribute valuable insights to the field.</li> <li>2. The title seems appropriate as it clearly indicates the topic of the manuscript: a logical proof of Polignac's Conjecture based on partitions of even numbers. It effectively communicates the focus of the research to the audience and sets expectations for what will be discussed in the paper.</li> <li>3. The abstract provides a good overview of the background and significance of Polignac's Conjecture, establishing the context for the study. It clearly states the objective of the research and briefly outlines the methodology used. Furthermore, it highlights the main findings, including the logical proof of the conjecture based on the new formulation of partitions. Overall, the abstract appears to be comprehensive in summarizing the key aspects of the manuscript.</li> <li>4. The subsections and structure of the manuscript appear to be appropriate. The introduction sets the stage by introducing Polignac's Conjecture and its significance, followed by Preliminaries which lay down the necessary groundwork and definitions. The subsequent sections delve into the methodology, exploration, and connection between partitions involving odd numbers and Polignac's Conjecture, which is followed by the construction of the proof. This hierarchical organization facilitates understanding and helps readers navigate through the manuscript effectively.</li> <li>5. The manuscript seems scientifically correct based on the provided information. 6. The references provided cover a range of relevant sources, including preprints, journal articles, books, and mathematical theorems. They also include recent publications up to the year 2023. However, it's always beneficial to ensure a comprehensive coverage of relevant literature.</li> </ol> <p><b><u>additional suggestions/comments</u></b>  <b>Language and Formatting:</b>            Pay attention to language clarity, grammar, and formatting. Use consistent terminology and notation throughout the manuscript. Proofread the document carefully to eliminate errors and ensure readability.</p>	
<p><b>Minor</b> REVISION comments</p> <ol style="list-style-type: none"> <li>1. <b>Is language/English quality of the article suitable for scholarly communications?</b></li> </ol>	<p>The language and English quality of the article are generally suitable for scholarly communications. However, minor revisions may be needed to improve clarity, coherence, and grammatical accuracy. Ensuring consistent terminology, refining sentence structures for better readability, and proofreading for errors would enhance the overall quality of the manuscript.</p>	
<p><b>Optional/General</b> comments</p>	<p>The manuscript presents a comprehensive exploration of Polignac's Conjecture, demonstrating a logical proof based on partitions of even numbers. It effectively integrates established theorems and recent research findings, contributing valuable insights to number theory. With minor revisions for clarity and thoroughness, it has the potential to make a significant impact in the mathematical community.</p>	

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**PART 2:**

	<b>Reviewer's comment</b>	<b>Author's comment</b> <i>(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
<b>Are there ethical issues in this manuscript?</b>	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

**Reviewer Details:**

Name:	<b>T.N. Kavitha</b>
Department, University & Country	<b>SCSVMV University, India</b>