A different critical approach to the teaching and obtaining of some elementary geometric inequalities

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Abstract: In this research, some misuses of an elementary geometric inequality used concepts in Turkish sources were analyzed. It was found that there are inconsistencies or incorrect results for this elementary geometric inequality in Turkish resourses (university preparation course books and math textbooks, etc.). A more useful inequality by specifying the largest lower and smallest upper bounds was found, to be able to end the inaccuracy of given inequality. After searching this geometric inequality in Turkish geometry studies, it was observed that a researcher had studied in [4,5] such as this work. But, in this study, our proofs are completely different, more simple and clearer. In [5], he gave a problem related to this inequality. He insisted this problem he had given could not be solved through geometry but through calculus. In the second part of this study, solution to this problem using the geometrical way was given successfully. Lastly, a new different approach for teaching these elementary geometric inequalies would be suggested for for the first time for the mathematics teachers and writers of math books, since the erroneous questions about this geometric inequality have been prepared and solved or answered incorrectly in the most widely used resource books by students such as those given in [6-10] until this time.

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