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Inductive investigation problem for a geometric construction, performed using both traditional tools and computerized dynamic software.

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Summary: In modern times computers enter the different fields of instruction more and more, including the studies of mathematics. It has been noted that the instruction of Euclidean geometry makes extensive use of dynamic software such as GeoGebra and others, which offer an inductive aid for the students, allowing them to discover the properties of different geometric shapes, patterns as bases for theorems, relations between the different elements of the shapes, and mostly to provide visual illustration of what is discovered. The paper brings a description of experimental work based on geometrical constructions using the traditional tools of a straightedge and a compass and it proceeds to illustrate the construction using dynamic software. During the construction students in the training track of mathematics teaching were required to discover patterns and reach a generalization in an interesting problem in geometry. To complete the conclusions obtained from the constructions, proofs were presented using different methods which join together different areas in mathematics, for several simple cases and for the general case.

Classification: G80 U70

Keywords: Euclidean geometry; geometric constructions of regular polygon; pencil; dynamic software
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