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INVARIANTS OF GEOMETRIC FIGURES

The concept of invariant is one of the most important in mathematics, since the study of the invariant is directly related to the tasks of object classifications of any type. In fact, the purpose of mathematical classification is to build a complete system of invariants (up to the simplest).

The invariant is a term which has several meanings. The invariant is a subspace of the vector space.

Any function of the points coordinates in space in which the team operates. It does not change in spite of all group transformations. Our task is to explain what the analytic invariant of the group is. These points can be the arbitrary points in space or belong to a certain geometric image. Any set of geometrical images, which penetrate into each other under arbitrary transformations of the group we will call the geometric invariant of the group, or the absolute of the space in which the team operates [1].

The projective geometry invariants are of particular interest of the projective group, which are geometric quantities. The aim of this work is the classification of projective geometry triangles, with the help a certain projective invariant introduction; the consideration of other invariants geometric shapes. After all, there are some significant differences in the relationship of congruence of segments and angles (which are not available in proactive geometry). For example, Euclid plane triangles with corresponding sides are equal congruently, and triangles with appropriate congruently angles, in general are not equal.

The topic chosen is relevant because the concept of invariant is quite common in mathematics, it is also a concept used in other fields of science. In particular:

- The cardinality of the set is an invariant for the set of bisectors.
- In the theory of differential equations invariant is a function that depends on the unknown function, the value of which is constant (first integral).
- Invariant theory deals with the search of invariant polynomials (or simply "invariants") and the study of their algebra for the case of linear representations of algebraic groups, action of algebraic groups on algebraic varieties.
- A topological invariant [3].

The problem of projective triangle was the version studied by Felix Klein. He considered projective geometrical treatment of the triangle as follows: three given points on the plane, are joined by two imaginary circular points (1, i, 0); (1, -i, 0). Then the whole geometry of the triangle is the projective theory of invariants of these five points. Thanks to this observation, the geometry of the triangle acquires the character of a transparent, systematic discipline [1].

Consequently, invariants of geometric figures, in particular, projective invariants of the triangle are important in the classification of objects of any type.

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