

Automated derivation of several geometry theorems from a given one

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Resumen. GeoGebra Discovery (<https://github.com/kovzol/geogebra-discovery>) is an experimental version of GeoGebra with expanded automated reasoning features, allowing the user to automatically discover relations holding between different elements of a construction, to confirm or deny or to suggest some extra hypotheses for the truth of a given statement [2, 3].

Recently GeoGebra Discovery has included the **ShowProof** command [1] that outputs an algebraic proof by contradiction of the statement, providing an expression of 1 as a combination of the hypotheses and the negation of the thesis multiplied by certain polynomials.

In our presentation we will describe a new, quite surprising, consequence of such expression: the automated derivation of many new true statements from the given one. That is: one theorem implies many others! This will be illustrated by using Maple, as currently this protocol has not yet being implemented in GeoGebra Discovery.

Palabras clave: Automated theorem proving; Polynomial ideal; GeoGebra Discovery; Automated derivation of theorems.

Referencias

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