Journal of Computer-Generated Mathematics

Problem 10

The Lester Circle is orthogonal to the Brocard Circle of the Triangle of Reflections of the Parry Reflection Point in the Sidelines of Triangle ABC

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Submitted on May 1, 2014
Publication Date: July 10, 2014

At the present time, there are seven notable circles known to be orthogonal to the Lester circle. See [1]. The below problem introduces a new notable circle which is orthogonal to the Lester circle.

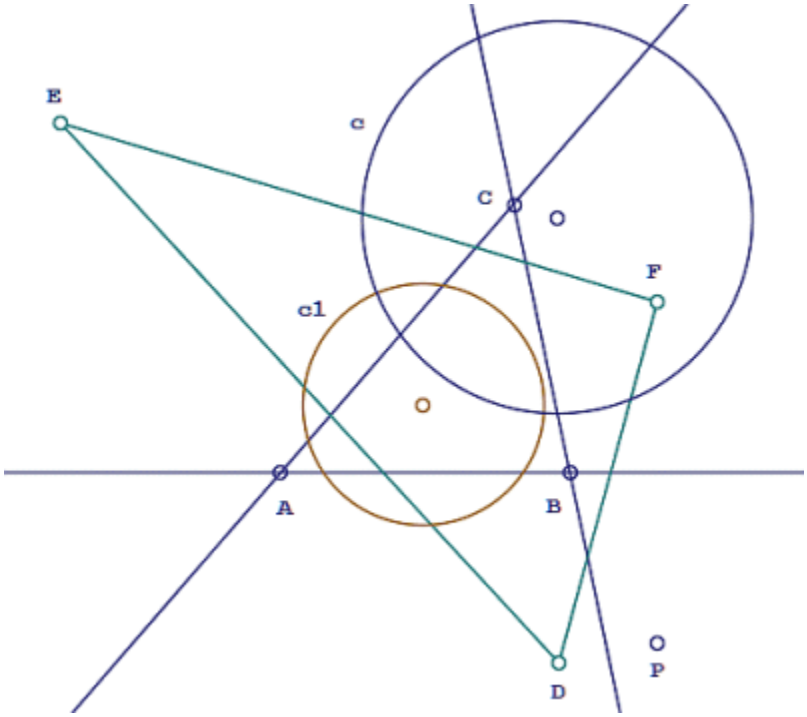
Prove the following problem, produced by the computer program "Discoverer":

Problem 10. Prove that the Lester Circle is orthogonal to the Brocard Circle of the Triangle of Reflections of the Parry Reflection Point in the Sidelines of Triangle ABC.

The reader may find the definitions in [2-5].

Please submit the solution of the problem for publication in this journal to the editor of this journal: ddekov@ddekov.eu

See the figure:



In the figure:
c – Lester circle,
Point P – Parry Reflection Point,
DEF - Triangle of Reflections of Point P in the Sidelines of Triangle ABC,
c1 – Brocard Circle of Triangle DEF.
Circle c1 is orthogonal to the Lester circle.

References

1. Dekov, D., Computer-Generated Mathematics: Seven Circles orthogonal to the Lester Circle, Didactical Modeling, 2008, http://www.math.bas.bg/omi/DidMod/Articles/D%5B1%5D.Dekov_Lester_Circle.pdf
2. Sava Grozdev and Deko Dekov, Computer-Generated Encyclopedia of Euclidean Geometry, 2014, available at the Web: http://www.ddekov.eu/e2/
3. Eric W. Weisstein, MathWorld - A Wolfram Web Resource, http://mathworld.wolfram.com/
4. Quim Castellsaguer, The Triangles Web, http://www.xtec.es/~qcastell/ttw/ttweng/portada.html
5. P. Yiu, The Circles of Lester, Evans, Parry, and Their Generalizations, Forum Geometricorum, 10 175–209.

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