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Problem 8
The Lester Circle is orthogonal to the Brocard Circle of the Fourth Brocard Triangle

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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.

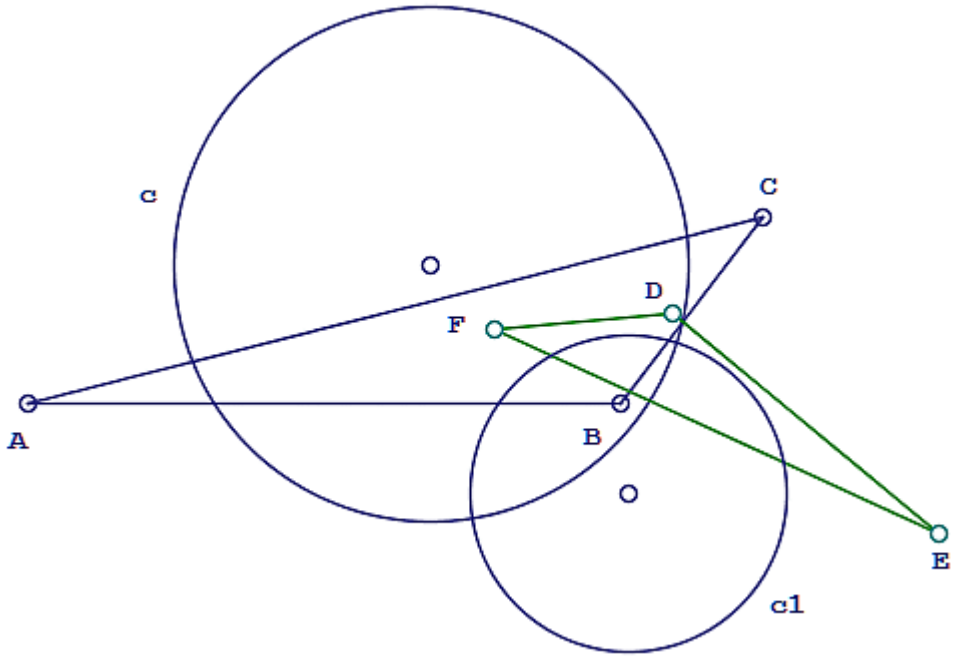
Prove the following problem, produced by the computer program "Discoverer":

Problem 8. Prove that the Lester Circle is orthogonal to the Brocard Circle of the Fourth Brocard Triangle.

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,
DEF – Fourth Brocard Triangle,
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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