Problem 11
The Feuerbach Point lies on the Pedal Circle of the Schiffler Point

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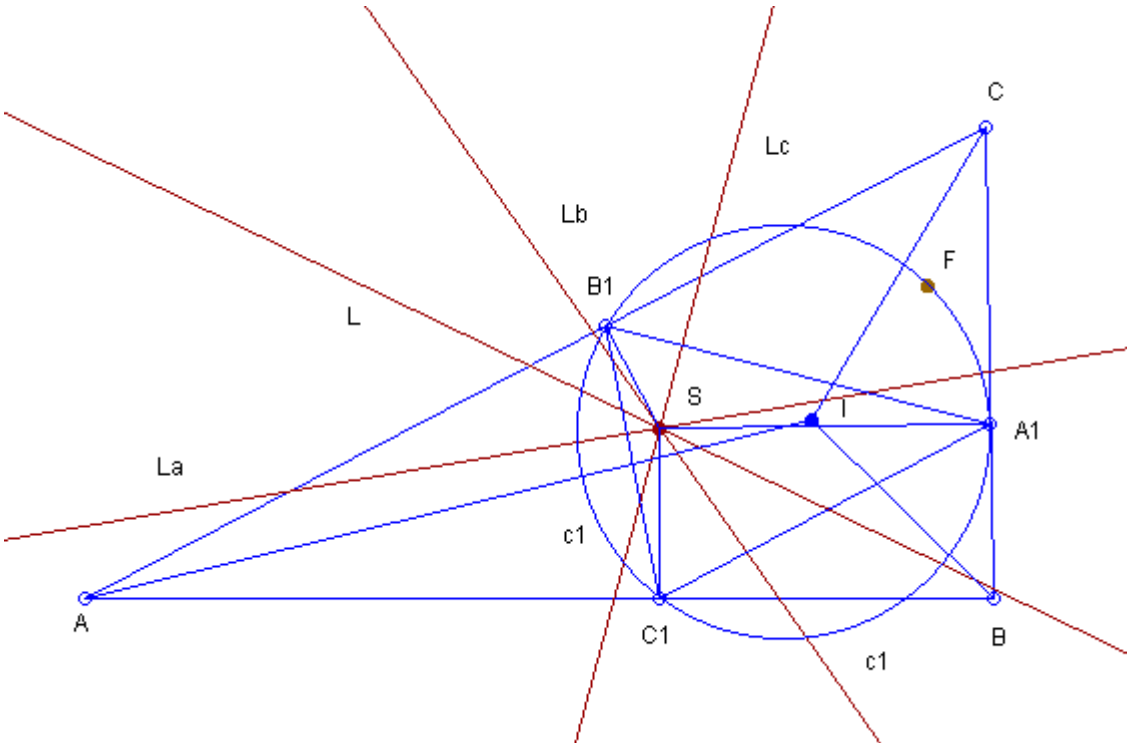
Prove the following computer-generated theorem:

THEOREM. The Feuerbach Point lies on the Pedal Circle of the Schiffler Point.

The reader may find the definitions in [1-4].

The *Euler line* is the line passing through the Centroid and the Orthocenter of a triangle. Denote by I the Incenter of triangle ABC. The Euler lines of triangles ABC, BCI, CAI, and ABI concur in a point and the point of concurrence is called the *Schiffler Point*.

See the Figure:



I - Incenter;
L - the Euler Line of triangle ABC;
La - the Euler Line of triangle BCI;

Lb - the Euler Line of triangle CAI;
Lc - the Euler Line of triangle ABI;
The Schiffler Point S is the point of concurrence of lines L, La, Lb and Lc;
$A_1B_1C_1$ - Pedal Triangle of the Schiffler Point;
circle c1 - Pedal Circle of the Schiffler Point = Circumcircle of triangle $A_1B_1C_1$;
The Feuerbach Point F lies on the Pedal Circle of the Schiffler Point.

References

1. Quim Castellsaguer, The Triangles Web, http://www.xtec.es/~qcastell/ttw/ttweng/portada.html
2. D. Dekov, Computer-Generated Encyclopedia of Euclidean Geometry, First Edition, 2006, available at the Web: http://www.dekovsoft.com/e1/.
3. D. Dekov, papers in this journal, 2006, 2007, 2008.
4. Eric W. Weisstein, MathWorld - A Wolfram Web Resource. http://mathworld.wolfram.com/