

Problem 21

The Feuerbach Point is the Perspector of the Euler Triangle and the Triangle of the Moses Points of the Corner Triangles of the Orthocenter

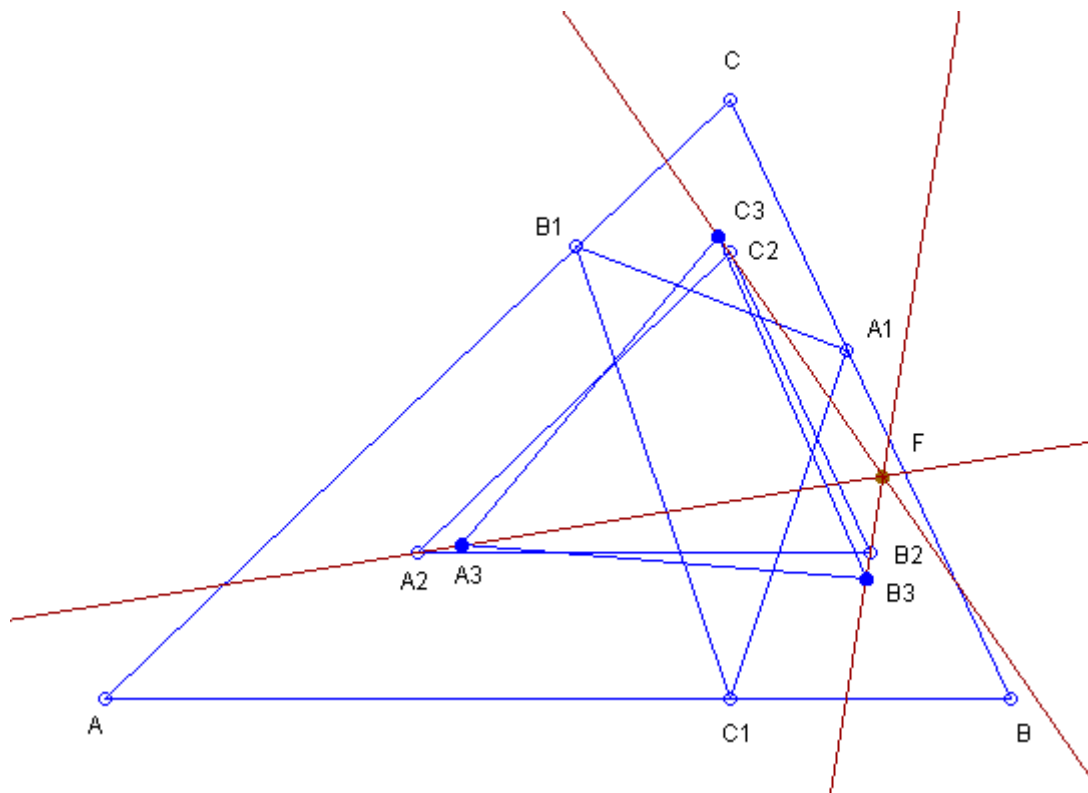
Publication Date: February 25, 2008

Prove the following computer-generated theorem:

THEOREM. The Feuerbach Point is the Perspector of the Euler Triangle and the Triangle of the Moses Points of the Corner Triangles of the Orthocenter.

The reader may find the definitions in [1-4]. Recall that the Moses Point of a triangle is the perspector of the triangle and the Orthic Triangle of the Incentral Triangle of the triangle. The Moses Point is named in honor of Peter J. C. Moses.

See the Figure:



$A_1B_1C_1$ - Orthic Triangle = Cevian Triangle of the Orthocenter;
 $A_2B_2C_2$ - Euler Triangle;
 A_3 - Moses Point of triangle AB_1C_1 ;
 B_3 - Moses Point of triangle BC_1A_1 ;
 C_3 - Moses Point of triangle CA_1B_1 ;
 $A_3B_3C_3$ - Triangle of the Moses Points of the Corner Triangles of the Orthocenter;
The lines A_2A_3 , B_2B_3 , and C_2C_3 concur at the Feuerbach Point F, that is, the Feuerbach Point is the Perspector of the Euler Triangle and the Triangle of the Moses Points of the Corner Triangles of the Orthocenter.

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/>