

Problem 2

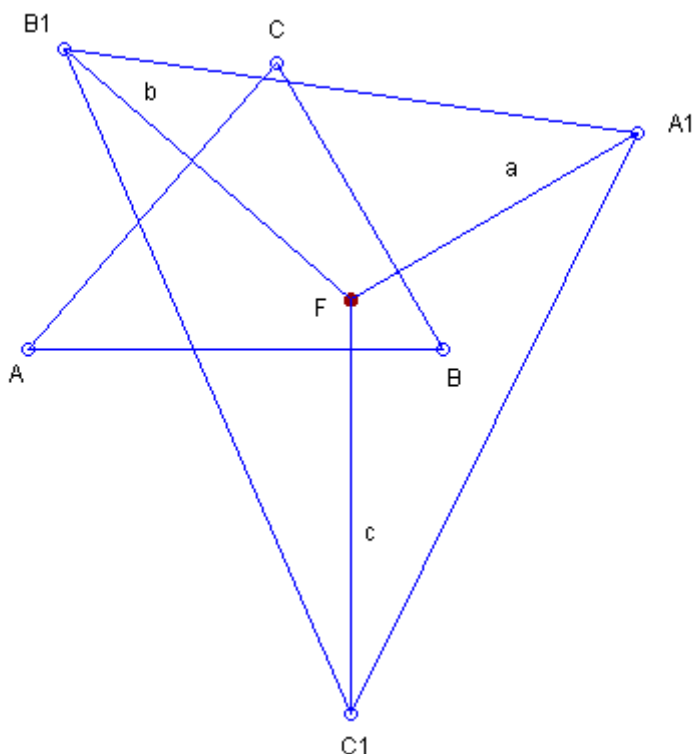
The Feuerbach Point is the Centroid of the Hatzipolakis Triangle of the First Feuerbach Point

Publication Date: March 4, 2008

Prove the following computer-generated theorem:

THEOREM. The Feuerbach Point is the Centroid of the Hatzipolakis Triangle of the First Feuerbach Point.

The reader may find the definitions in [1-4]. For the definition of the Hatzipolakis Triangle of a point, see [3]. See the Figure:



Line FA_1 is perpendicular to line BC and the length of segment FA_1 is equal to the length of segment BC , that is, equal to the length of side a of triangle ABC ;
Line FB_1 is perpendicular to line CA and the length of segment FB_1 is equal to the length of segment CA , that is, equal to the length of side b of triangle ABC ;

Line FC_1 is perpendicular to line AB and the length of segment FC_1 is equal to the length of segment AB , that is, equal to the length of side c of triangle ABC ;
 $A_1B_1C_1$ - Hatzipolakis Triangle of the Feuerbach Point;
The Feuerbach Point F is the Centroid of the Hatzipolakis Triangle of the First Feuerbach 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/>.
3. D. Dekov, Hatzipolakis Triangles, in this journal, 2007.
4. Eric W. Weisstein, MathWorld - A Wolfram Web Resource.
<http://mathworld.wolfram.com/>