

### Problem 22

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

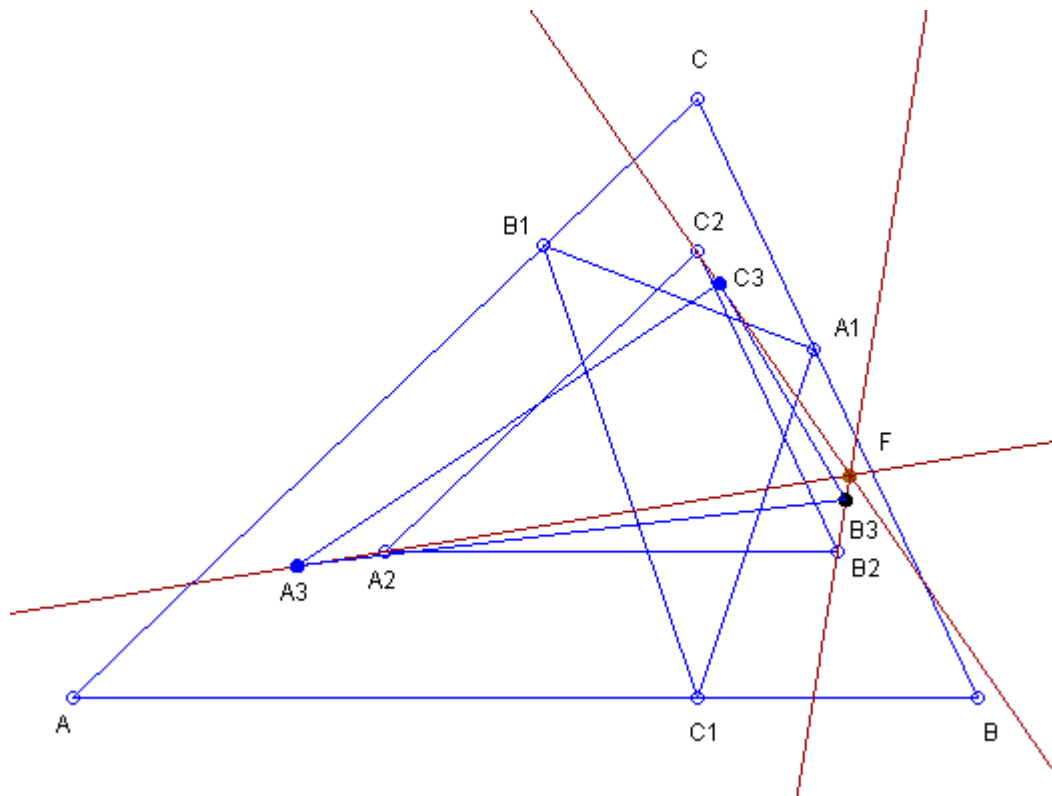
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Prove the following computer-generated theorem:

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

The reader may find the definitions in [1-4]. For the definition of the Bevan Point see e.g. [2, Definitions, Points, Bevan Point].

See the Figure:



$A_1B_1C_1$  - Orthic Triangle = Cevian Triangle of the Orthocenter;

$A_2B_2C_2$  - Euler Triangle;

$A_3$  - Bevan Point of triangle  $AB_1C_1$ ;

$B_3$  - Bevan Point of triangle  $BC_1A_1$ ;

$C_3$  - Bevan Point of triangle  $CA_1B_1$ ;

$A_3B_3C_3$  - Triangle of the Bevan 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 Bevan Points of the Corner Triangles of the Orthocenter.

## References

1. Quim Castellsaguer, The Triangles Web,  
<http://www.xtec.es/~qcastell/ttw/ttweng/portada.html>
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3. D. Dekov, papers in this journal, 2006, 2007, 2008.
4. Eric W. Weisstein, MathWorld - A Wolfram Web Resource.  
<http://mathworld.wolfram.com/>