

### Problem 27

The Feuerbach Point is the Perspector of the Euler Triangle and the Triangle of the Orthocenters of the Corner Triangles of the Gergonne Point

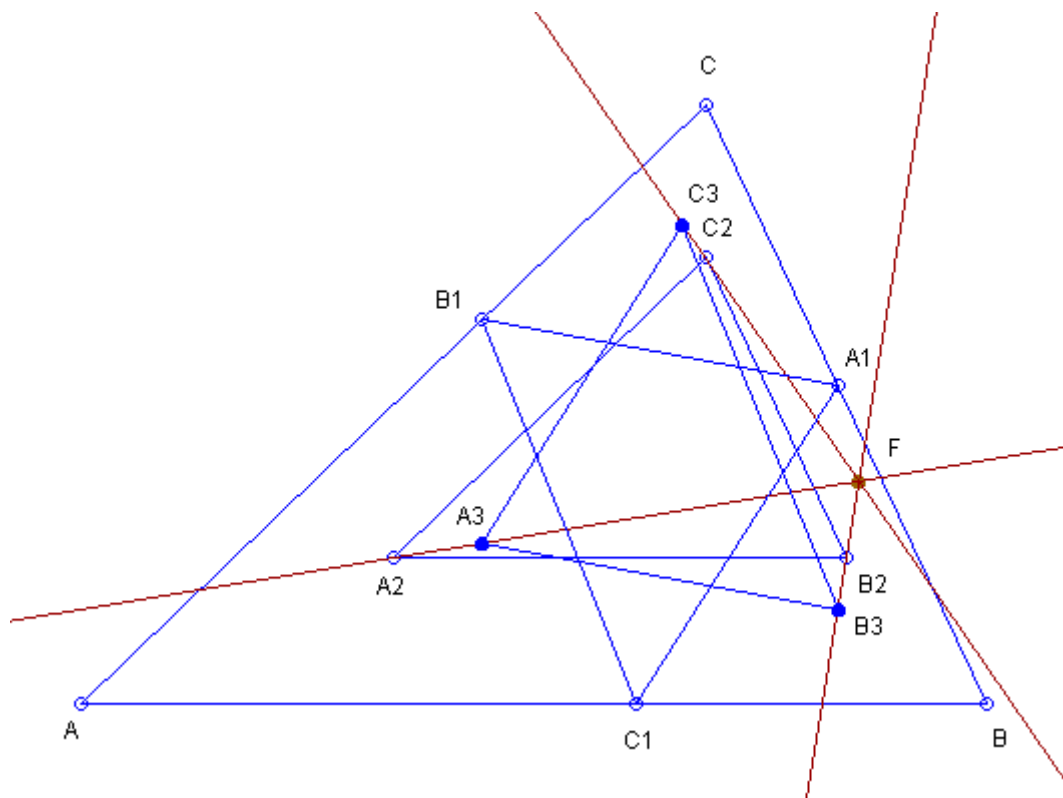
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Prove the following computer-generated theorem:

**THEOREM.** The Feuerbach Point is the Perspector of the Euler Triangle and the Triangle of the Orthocenters of the Corner Triangles of the Gergonne Point.

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

See the Figure:



$A_1B_1C_1$  - Intouch Triangle = Cevian Triangle of the Gergonne Point;  
 $A_2B_2C_2$  - Euler Triangle;

$A_3$  - Orthocenter of triangle  $AB_1C_1$ ;  
 $B_3$  - Orthocenter of triangle  $BC_1A_1$ ;  
 $C_3$  - Orthocenter of triangle  $CA_1B_1$ ;  
 $A_3B_3C_3$  - Triangle of the Orthocenters of the Corner Triangles of the Gergonne Point;  
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 Orthocenters of the Corner Triangles of the Gergonne Point.

## References

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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/>