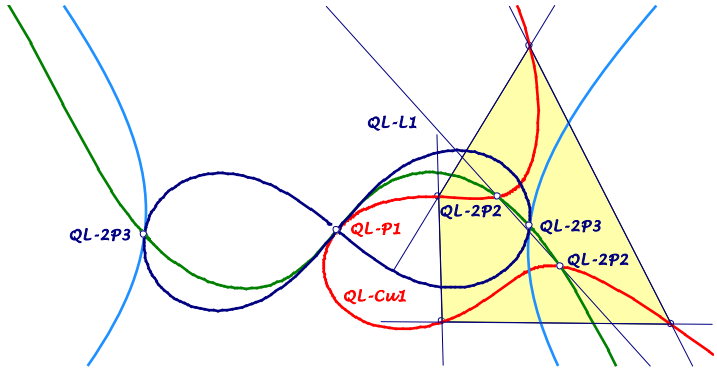
EQF-Note 2015-09-28

Background for these notes is:
Chris van Tienhoven: Encyclopedia of Quadri-Figures
http://www.chrisvantienhoven.nl/

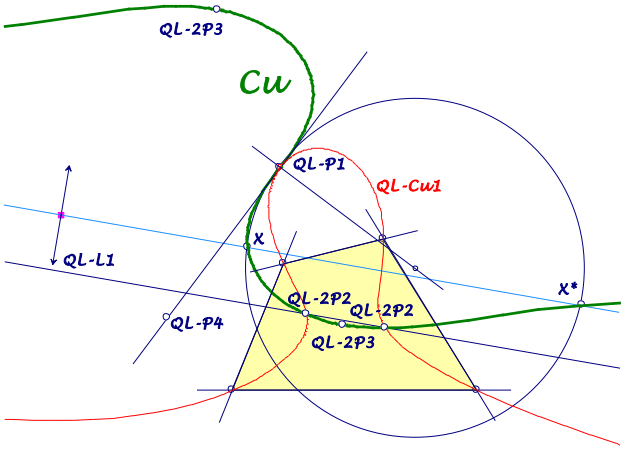
QL-Tf1 Related Curves

Main QL-transformation is QL-Tf1, usual shortened CSC. Central QL-curve is the CSC-invariant cubic QL-Cu1. Changing the construction of QL-Cu1, there is a further CSC-invariant cubic Cu. Its CSC-partners lead to an orthogonal hyperbola Hy, whose CSC-image is a lemniscate Le. Geometric properties are Cabri-tested.



QL-Cu1

QL-Cu1 is the locus for intersections of …
… parallels wrt *QL-L1*
… and the *CSC*-circles of their reflections in *QL-L1*.



Cu

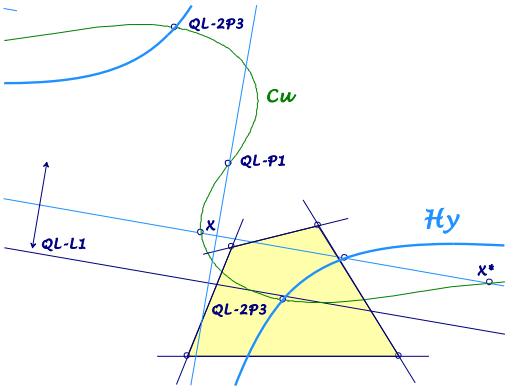
Reducing the construction of *QL-Cu1* we get a further cubic:
Cu is the locus for intersections of …
… parallels wrt *QL-L1*
… and their *CSC*-circles.

Some properties of the cubic Cu:

… *Cu* is *CSC*-invariant.
… *Cu* is symmetric wrt the Miquel point *QL-P1*.
… *Cu* contains the points *QL-P1*, *QL-2P2*, *QL-2P3*.
… Its asymptote is parallel to the Newton line *QL-L1*.
… The tangent in *QL-P1* at *Cu* is *QL-P1.QL-P4*, also the tangent at *QL-Cu1*.

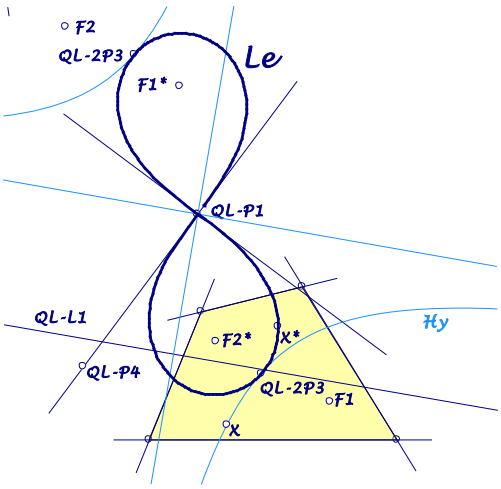
Hy

The midpoints of *CSC*-partners on the cubic *Cu* give an orthogonal hyperbola *Hy*, …
… centered in *QL-P1*,
… through the points *QL-2P3*
… and asymptotes parallel and ortogonal *QL-L1*.
The tangent in a point *X* at *Hy* is *XX**.



Le

The *CSC*-image of the orthogonal hyperbola *Hy* is a lemniscate,
… centered in *QL-P1*,
… tangent in *QL-2P3* to *Hy*,
… tangents in *QL-P1*: *QL-P1.QL-P4* and a perpendicular,
… with foci in the *CSC*-images of the foci of *Hy*.



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