

Background for these notes is:

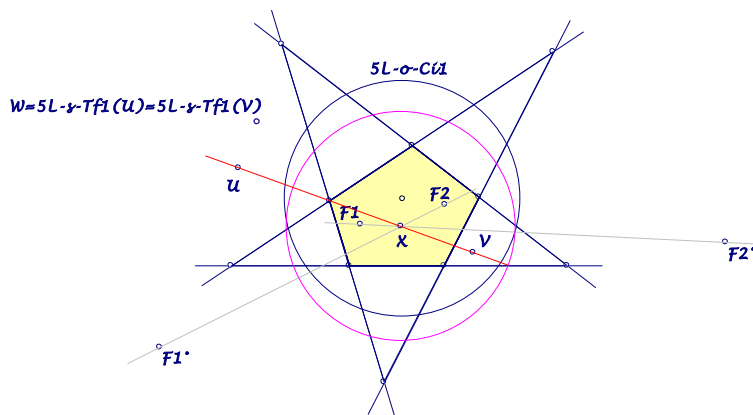
Chris van Tienhoven:

Encyclopedia of Quadri-Figures and Poly Geometry

<http://www.chrisvantienhoven.nl/>

CSC-related 5L-Transformation

In EPG there is already a CSC-related transformation 5L-s-Tf1, but it is not reciprocal. Every point has two pre-images. Taking these pre-images as image-partner, we get a new transformation, which is reciprocal, mapping circles to circles as CSC wrt quadrilaterals.



Starting with the 5L-inscribed conic 5L-s-Co1 and Clifford's circle 5L-o-Ci1, we get an interesting point

$$X = F_1F_2' \cap F_1'F_2.$$

F_1 and F_2 foci of the inscribed conic 5L-s-Co1,

F_1' and F_2' inverses of F_1 and F_2 wrt 5L-o-Ci1.

The transformation 5L-s-Tf1 maps X to the center of Clifford's circle 5L-o-P2, but this transformation isn't reciprocal.

Let us further consider a circle $Ci(X)$

...centered in X with radius $\sqrt{X.F_1 \times X.F_2'} = \sqrt{X.F_1' \times X.F_2}$.

Definition of the transformation Tf:

- Reflection in X , followed by inversion wrt $Ci(X)$ give the Tf-image of a point.

Main properties will be:

- Tf is reciprocal: $Tf(Tf(P)) = P$.
- Tf maps lines and circles to circles, ... specially lines to circles.
- P and $Tf(P)$ have the same 5L-s-Tf1-image.

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