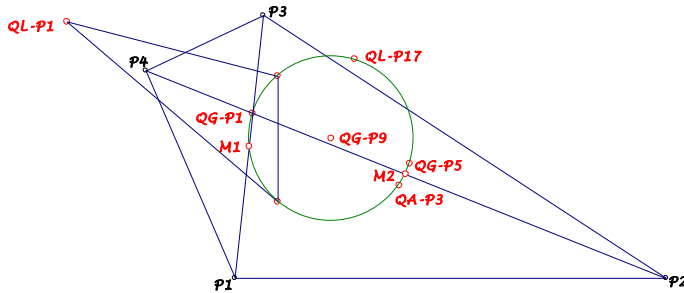


Background for these notes is:
 Chris van Tienhoven: Encyclopedia of Quadri-Figures
<http://chrisvantienhoven.nl/>

Another Quadrigon Circle

Here another QG-circle will be described connected with diagonal points.



This QG-circle is the circumcircle of the Diagonal Crosspoint QG-P1 and the midpoints of the diagonals.

If we use $QL-Tr1$ as reference triangle, this circle has the equation

$$a^2(l^2 - m^2)(n^2x + m^2y + n^2z)z - c^2(m^2 - n^2)(l^2x + m^2y + l^2z)x + b^2(l^2 - m^2)(m^2 - n^2)zx = 0$$

with the midpoint

2nd QG-Quasi Circumcenter QG-P9

and contains ...

- ... the Diagonal Crosspoint QG-P1,
- ... the diagonal midpoints M_1 and M_2 ,
- ... the 1st QG-Quasi Circumcenter QG-P5,
- ... the Gergonne-Steiner Point QA-P3,
- ... the QL-Adjunct Quasi Circumcenter QL-P17
- ... two vertices of the Miquel Triangle unequal QL-P1.

Furthermore there is a transformation, consisting of a reflection in the angle bisector at QG-P1 (wrt QL-Tr1) and a reflection in a circle round QG-P1, so that the diagonal midpoints M_1 and M_2 change:

$$(x : y : z) \rightarrow (a^2m^4z(x + y + z) : -(m^2n^2 - n^2l^2 + l^2m^2)(a^2z^2 + 2S_Bzx + c^2x^2) - m^4(a^2yz + b^2zx + c^2xy) : c^2m^4x(x + y + z))$$

This transformation gives the new QG-circle as image of the Newton Line QL-L1.

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