

Napoleon Points

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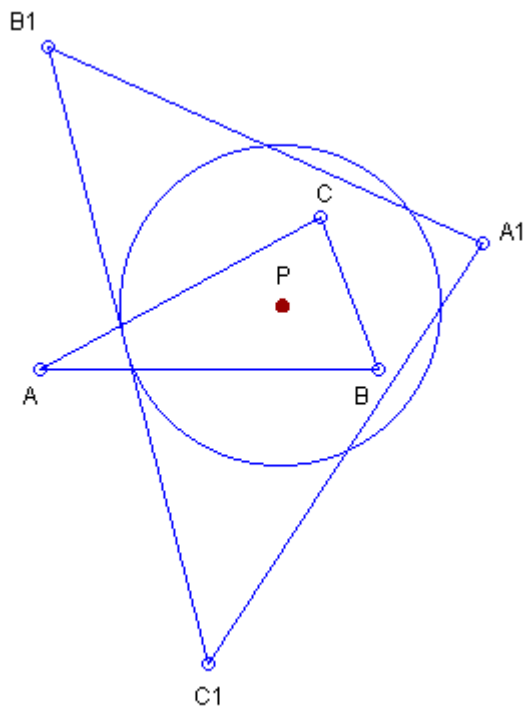
Abstract. By using the computer program "Machine for Questions and Answers", we find properties of the Napoleon Points.

Given a point, the Machine for Questions and Answers produces theorems related to properties of the point. The Machine for Questions and Answers produces theorems related to properties of the Napoleon Points:

Outer Napoleon Point

Outer Napoleon Point = Nine-Point Center of the Outer Fermat Triangle.

See the Figure:



$A_1B_1C_1$ - Outer Fermat Triangle;
(P) - Nine-Point Circle of the Outer Fermat Triangle;

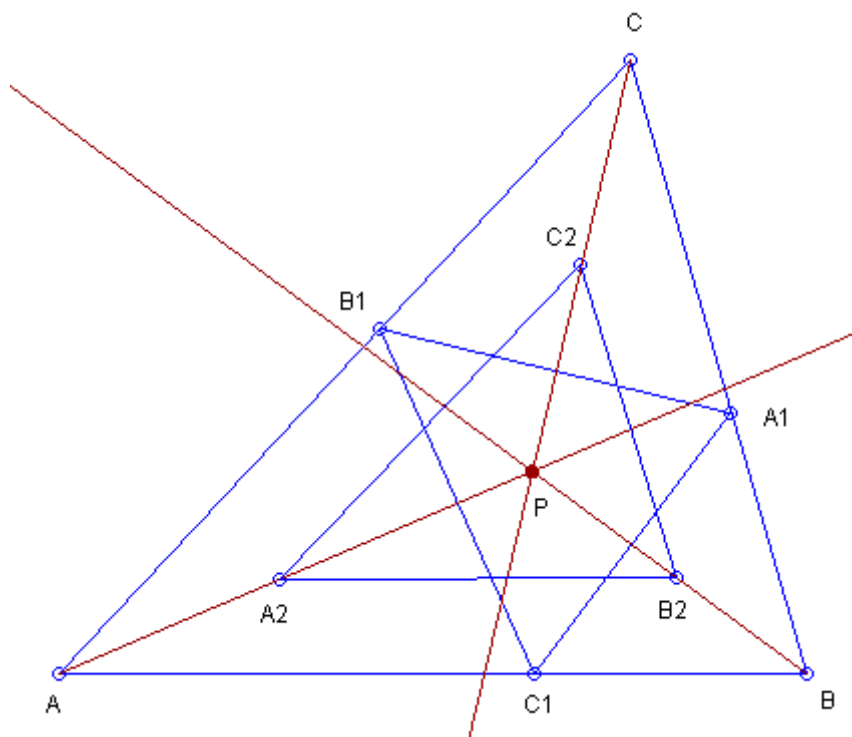
P - Outer Napoleon Point = center of circle (P).

Outer Napoleon Point = Internal Center of Similitude of the Fermat-Tucker Circle and the Nine-Point Circle.

Outer Napoleon Point = Homothetic Center of Triangle ABC and the Triangle of the Outer Napoleon Points of the Corner Triangles of the Centroid.

Outer Napoleon Point = Perspector of Triangle ABC and the Triangle of the Inner Napoleon Points of the Corner Triangles of the Outer Fermat Point.

See the Figure:



$A_1B_1C_1$ - Cevian Triangle of the Outer Fermat Point;

A_2 - Inner Napoleon Point of triangle AB_1C_1 ;

B_2 - Inner Napoleon Point of triangle BC_1A_1 ;

C_2 - Inner Napoleon Point of triangle CA_1B_1 ;

$A_2B_2C_2$ - Triangle of the Inner Napoleon Points of the Corner Triangles of the Outer Fermat Point;

P - Outer Napoleon Point = Perspector of triangles ABC and $A_2B_2C_2$.

Outer Napoleon Point = Homothetic Center of the Incentral Triangle and the Triangle of the reflections of the Outer Napoleon Point in the vertices of the Incentral Triangle.

Outer Napoleon Point = Homothetic Center of the Medial Triangle and the Triangle of the Centroids of the Triangulation Triangles of the Outer Napoleon Point.

Outer Napoleon Point = Homothetic Center of the Medial Triangle and the Triangle of the

Outer Napoleon Points of the Anticevian Corner Triangles of the Centroid.

Outer Napoleon Point = Homothetic Center of the Medial Triangle and the Triangle of the reflections of the Outer Napoleon Point in the vertices of the Medial Triangle.

Outer Napoleon Point = Homothetic Center of the Orthic Triangle and the Triangle of the reflections of the Outer Napoleon Point in the vertices of the Orthic Triangle.

Outer Napoleon Point = Homothetic Center of the Symmedial Triangle and the Triangle of the reflections of the Outer Napoleon Point in the vertices of the Symmedial Triangle.

Outer Napoleon Point = Homothetic Center of the Intouch Triangle and the Triangle of the reflections of the Outer Napoleon Point in the vertices of the Intouch Triangle.

Outer Napoleon Point = Homothetic Center of the Extouch Triangle and the Triangle of the reflections of the Outer Napoleon Point in the vertices of the Extouch Triangle.

Outer Napoleon Point = Homothetic Center of the Excentral Triangle and the Triangle of the reflections of the Outer Napoleon Point in the vertices of the Excentral Triangle.

Outer Napoleon Point = Homothetic Center of the Anticomplementary Triangle and the Triangle of the reflections of the Outer Napoleon Point in the vertices of the Anticomplementary Triangle.

Outer Napoleon Point = Homothetic Center of the Tangential Triangle and the Triangle of the reflections of the Outer Napoleon Point in the vertices of the Tangential Triangle.

Outer Napoleon Point = Isogonal Conjugate of the Inner Napoleon Point of the Cevian Triangle of the First Isodynamic Point.

Outer Napoleon Point = Isogonal Conjugate of the Internal Center of Similitude of the Cosine Circle and the Napoleon-Tucker Circle.

Outer Napoleon Point = Isogonal Conjugate of the Internal Center of Similitude of the Kenmotu Circle and the Regular 12-gon Tucker Circle.

The Outer Napoleon Point lies on the Line through the Circumcenter and the Outer Fermat Point.

The Outer Napoleon Point lies on the Line through the First Isodynamic Point and the Orthocenter.

Inner Napoleon Point

Inner Napoleon Point = Nine-Point Center of the Inner Fermat Triangle.

Inner Napoleon Point = Perspector of Triangle ABC and the Triangle of the Circumcenters of the Triangulation Triangles of the Inner Fermat Point.

Inner Napoleon Point = Homothetic Center of Triangle ABC and the Triangle of the Inner

Napoleon Points of the Corner Triangles of the Centroid.

Inner Napoleon Point = Homothetic Center of the Incentral Triangle and the Triangle of the reflections of the Inner Napoleon Point in the vertices of the Incentral Triangle.

Inner Napoleon Point = Homothetic Center of the Medial Triangle and the Triangle of the Centroids of the Triangulation Triangles of the Inner Napoleon Point.

Inner Napoleon Point = Homothetic Center of the Medial Triangle and the Triangle of the Inner Napoleon Points of the Anticevian Corner Triangles of the Centroid.

Inner Napoleon Point = Homothetic Center of the Medial Triangle and the Triangle of the reflections of the Inner Napoleon Point in the vertices of the Medial Triangle.

Inner Napoleon Point = Homothetic Center of the Orthic Triangle and the Triangle of the reflections of the Inner Napoleon Point in the vertices of the Orthic Triangle.

Inner Napoleon Point = Homothetic Center of the Symmedial Triangle and the Triangle of the reflections of the Inner Napoleon Point in the vertices of the Symmedial Triangle.

Inner Napoleon Point = Homothetic Center of the Intouch Triangle and the Triangle of the reflections of the Inner Napoleon Point in the vertices of the Intouch Triangle.

Inner Napoleon Point = Homothetic Center of the Extouch Triangle and the Triangle of the reflections of the Inner Napoleon Point in the vertices of the Extouch Triangle.

Inner Napoleon Point = Homothetic Center of the Excentral Triangle and the Triangle of the reflections of the Inner Napoleon Point in the vertices of the Excentral Triangle.

Inner Napoleon Point = Homothetic Center of the Anticomplementary Triangle and the Triangle of the reflections of the Inner Napoleon Point in the vertices of the Anticomplementary Triangle.

Inner Napoleon Point = Homothetic Center of the Tangential Triangle and the Triangle of the reflections of the Inner Napoleon Point in the vertices of the Tangential Triangle.

Inner Napoleon Point = Perspector of the Inner Lucas Triangle and the Inner Apollonius Triangle of the Lucas Circles of the Circumcevian Triangle of the Inner Napoleon Point.

Inner Napoleon Point = Isogonal Conjugate of the Inner Napoleon Point of the Cevian Triangle of the Second Isodynamic Point.

Inner Napoleon Point = Isogonal Conjugate of the External Center of Similitude of the Circumcircle and the Fermat-Tucker Circle.

The Inner Napoleon Point lies on the Line through the Orthocenter and the Second Isodynamic Point.

The Inner Napoleon Point lies on the Line through the Nine-Point Center and the Outer

Fermat Point.

The Inner Napoleon Point lies on the Line through the Outer Napoleon Point and the Symmedian Point.

Invitation

The reader is invited to submit a note/paper containing

- synthetic proofs of theorems from this paper,
- or, applications of theorems from this paper,
- or, additional references related to this paper.

Definitions

We use the definitions in accordance with [1 - 5] and papers published in this journal.

The Level

The Machine for Questions and Answers is used to produce results in this paper. Currently the Machine has 6 levels of depths - 0,1,2,3,4,5. We use for this paper the level 0, that is, the Machine produces only elementary results. If we need deeper investigation, we have to use a level bigger than 0. Since the Machine for Questions and Answers produces too many results, it is suitable we to use bigger levels upon request, that is, for specific questions.

Thanks

The figures in this note are produced by using the program C.a.R. (Compass and Ruler), an amazing program created by Rene Grothmann. The Grothmann's program is available for download in the Web: [Rene Grothmann's C.a.R.](#). It is free and open source. The reader may verify easily the statements of this paper by using C.a.R. Many thanks to Rene Grothmann for his wonderful program.

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