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Inner Fermat Point

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Abstract. By using the computer program "Machine for Questions and Answers", we find properties of the Inner Fermat Point.

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 Inner Fermat Point:

Inner Fermat Point = Inner Fermat Point of the Cevian Triangle of the Inner Fermat Point.

Inner Fermat Point = Outer Fermat Point of the Anticevian Triangle of the Inner Fermat Point.

Inner Fermat Point = Second Isodynamic Point of the Pedal Triangle of the Inner Fermat Point.

Inner Fermat Point = Inner Fermat Point of the Circumcevian Triangle of the Inner Fermat Point.

Inner Fermat Point = Second Isodynamic Point of the Fourth Brocard Triangle.

Inner Fermat Point = Outer Fermat Point of the Inner Fermat Triangle.

Inner Fermat Point = Reflection of the Outer Fermat Point in the Kiepert Center.

Inner Fermat Point = Inverse of the Outer Fermat Point in the Orthocentroidal Circle.

Inner Fermat Point = External Center of Similitude of the Fermat-Tucker Circle and the Nine-Point Circle.

Inner Fermat Point = Homothetic Center of Triangle ABC and the Triangle of the Inner Fermat Points of the Corner Triangles of the Centroid.

Inner Fermat Point = Perspector of Triangle ABC and the Triangle of the Second Isodynamic Points of the Corner Triangles of the Orthocenter.

Inner Fermat Point = Perspector of Triangle ABC and the Triangle of the reflections of the Second Isodynamic Point in the sides of the Excentral Triangle.

Inner Fermat Point = Perspector of Triangle ABC and the Triangle of the reflections of the Inner Fermat Point in the vertices of the Cevian Triangle of the Inner Fermat Point.

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

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

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

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

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

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

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

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

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

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

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

Inner Fermat Point = Perspector of the Euler Triangle and the Triangle of the Inner Napoleon Points of the Anticevian Corner Triangles of the Second Isodynamic Point.

Inner Fermat Point = Isogonal Conjugate of the Second Isodynamic Point.

Inner Fermat Point = Anticomplement of the Inner Fermat Point of the Medial Triangle.

Inner Fermat Point = Isogonal Conjugate of the Anticomplement of the Second Isodynamic Point of the Medial Triangle.

Inner Fermat Point = Complement of the Inner Fermat Point of the Anticomplementary Triangle.

Inner Fermat Point = Isogonal Conjugate of the Second Isodynamic Point of the Second Brocard Triangle.

Inner Fermat Point = Isogonal Conjugate of the Second Isodynamic Point of the Inner Lucas Triangle.

Inner Fermat Point = Anticomplement of the Midpoint between the Outer Fermat Point and the Steiner Point.

Inner Fermat Point = Isogonal Conjugate of the Product of the Centroid and the Second Isodynamic Point.

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

Inner Fermat Point = Isogonal Conjugate of the External Center of Similitude of the Kenmotu Circle and the Regular 12-gon Tucker Circle.

Inner Fermat Point = Isogonal Conjugate of the Inverse of the First Isodynamic Point in the Circumcircle.

Inner Fermat Point = Isogonal Conjugate of the Inverse of the First Isodynamic Point in the Brocard Circle.

Inner Fermat Point = Isogonal Conjugate of the Inverse of the First Isodynamic Point in the Inner Lucas Circle.

Inner Fermat Point = Isogonal Conjugate of the Inverse of the First Isodynamic Point in the Radical Circle of the Lucas Circles.

Inner Fermat Point = Complement of the Perspector of the Anticomplementary Triangle and the Outer Fermat Triangle.

Inner Fermat Point = Complement of the Perspector of the Antipedal Triangle of the Orthocenter and the Outer Fermat Triangle.

Inner Fermat Point = Isogonal Conjugate of the Perspector of the Cevian Triangle of the Inner Fermat Point and the Reflection Triangle.

Inner Fermat Point = Isogonal Conjugate of the Perspector of the Cevian Triangle of the Inner Fermat Point and the Outer Fermat Triangle.

The Inner Fermat Point lies on the Parry Circle of the Fourth Brocard Triangle.

The Inner Fermat Point lies on the Line through the Centroid and the First Isodynamic Point.

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

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

The Inner Fermat Point lies on the Line through the Kiepert Center and the Symmedian Point.

The Inner Fermat Point lies on the Line through the Kiepert Center and the Outer Fermat 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.

References

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