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de Longchamps Point

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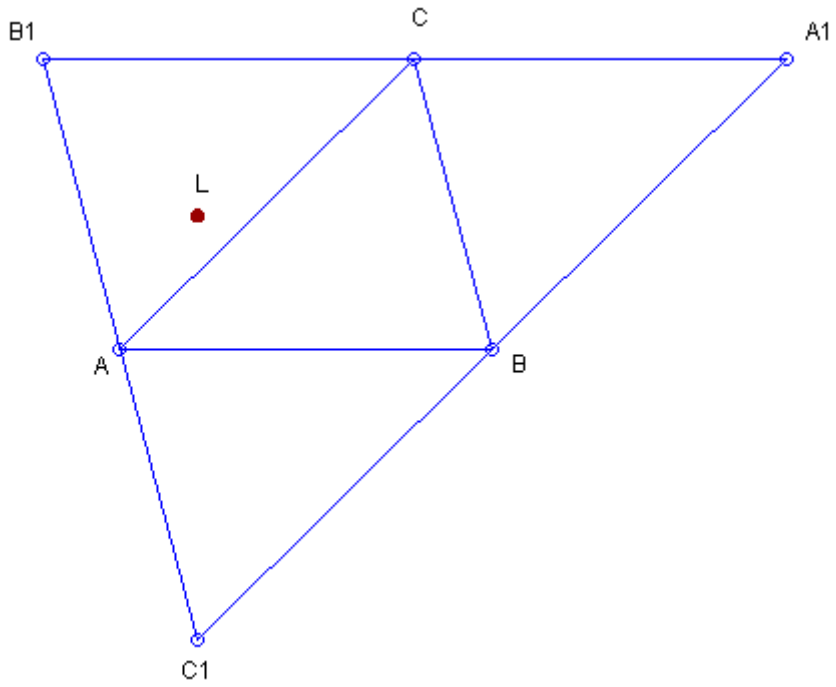
Abstract. By using the computer program "Machine for Questions and Answers", we find properties of de Longchamps Point.

The *de Longchamps Point* is the Orthocenter of the Anticomplementary Triangle.

See the Figure:



$A_1B_1C_1$ - Anticomplementary Triangle;
L - de Longchamps Point = Orthocenter of the Anticomplementary Triangle.

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 de Longchamps Point:

de Longchamps Point = Orthocenter of the Circumcevian Triangle of the Circumcenter.

de Longchamps Point = Center of the First Droz-Farny Circle of the Anticomplementary

Triangle.

de Longchamps Point = Center of the First Droz-Farny Circle of the Circumcevian Triangle of the Circumcenter.

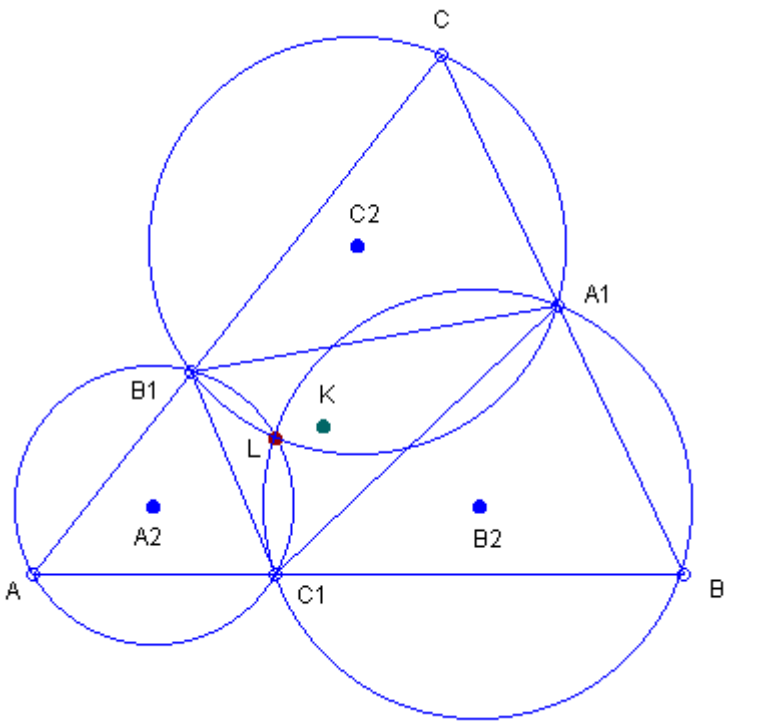
de Longchamps Point = Reflection of the Orthocenter in the Circumcenter.

de Longchamps Point = Reflection of the Nagel Point in the Bevan Point.

de Longchamps Point = Product of the Centroid of the Tangential Triangle and the Isotomic Conjugate of the Symmedian Point.

de Longchamps Point = Miquel Point of the Symmedian Point of the Anticomplementary Triangle.

See the Figure:



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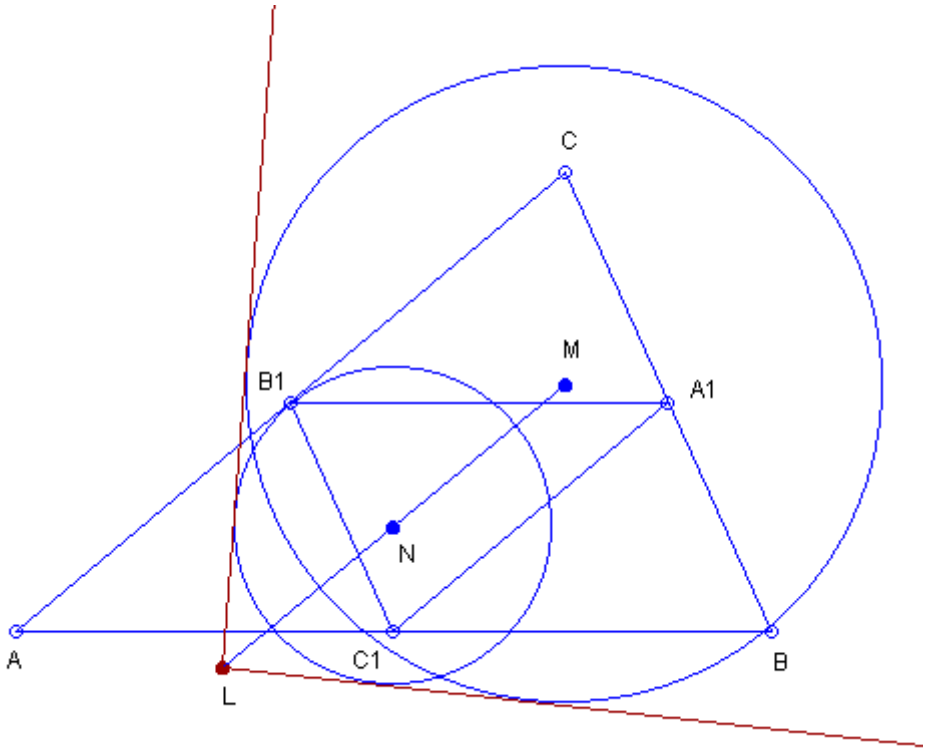
K - Symmedian Point of the Anticomplementary Triangle;
$A_1B_1C_1$ - Cevian Triangle of point K;
(A_2) - Circumcircle of triangle AB_1C_1;
(B_2) - Circumcircle of triangle BC_1A_1;
(C_2) - Circumcircle of triangle CA_1B_1;
L - de Longchamps Point = intersection point of circles (A_2), (B_2) and (C_2) = Miquel Point of the Symmedian Point of the Anticomplementary Triangle.

de Longchamps Point = Inverse of the Skordev Point in the Orthocentroidal Circle.

de Longchamps Point = External Center of Similitude of the First Droz-Farny Circle and the First Droz-Farny Circle of the Medial Triangle.

See the Figure:



(M) - First Droz-Farny Circle;
$A_1B_1C_1$ - Medial Triangle;
(N) - First Droz-Farny Circle of the Medial Triangle;
L - de Longchamps Point = External Center of Similitude of circles (M) and (N).

de Longchamps Point = Radical Center of the Triad of the Circumcircles of the Corner Triangles of the Anticevian Triangle of the Orthocenter.

de Longchamps Point = Perspector of the Cevian Triangle of the de Longchamps Point and the Circumcevian Triangle of the de Longchamps Point.

de Longchamps Point = Perspector of the Anticomplementary Triangle and the Pedal Triangle of the de Longchamps Point.

de Longchamps Point = Homothetic Center of the Anticomplementary Triangle and the Circumcevian Triangle of the Circumcenter.

de Longchamps Point = Homothetic Center of the Antipedal Triangle of the Orthocenter and the Circumcevian Triangle of the Circumcenter.

de Longchamps Point = Homothetic Center of Triangle ABC and the Triangle of the de Longchamps Points of the Corner Triangles of the Centroid.

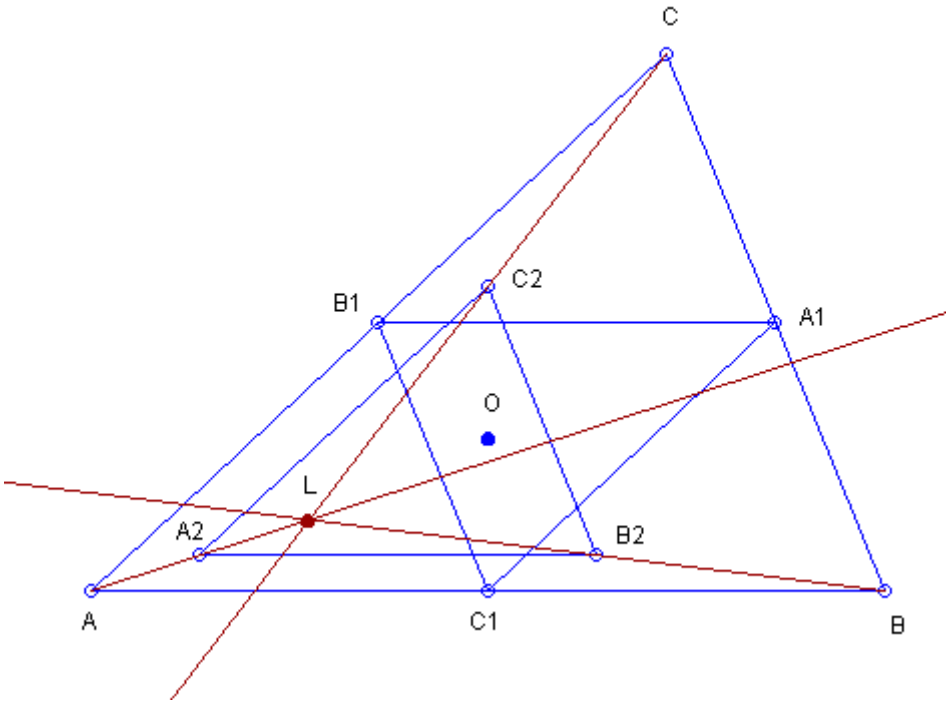
de Longchamps Point = Homothetic Center of Triangle ABC and the Triangle of the reflections of the de Longchamps Point in the sides of the Anticevian Triangle of the Orthocenter.

de Longchamps Point = Perspector of Triangle ABC and the Triangle of the reflections of the de Longchamps Point in the vertices of the Cevian Triangle of the de Longchamps Point.

de Longchamps Point = Perspector of Triangle ABC and the Triangle of the reflections of the de Longchamps Point in the vertices of the Anticevian Triangle of the de Longchamps Point.

de Longchamps Point = Homothetic Center of Triangle ABC and the Triangle of the reflections of the vertices of the Medial Triangle in the Circumcenter.

See the Figure:



O - Circumcenter;
$A_1B_1C_1$ - Medial Triangle;
A_2 - reflection of A_1 in O;
B_2 - reflection of B_1 in O;
C_2 - reflection of C_1 in O;
$A_2B_2C_2$ - Triangle of the reflections of the vertices of the Medial Triangle in the Circumcenter;
L - de Longchamps Point = Homothetic Center of triangles ABC and $A_2B_2C_2$.

de Longchamps Point = Perspector of Triangle ABC and the Triangle of the reflections of the vertices of the Cevian Triangle of the de Longchamps Point in the de Longchamps Point.

de Longchamps Point = Homothetic Center of Triangle ABC and the Triangle of the reflections of the vertices of the Anticomplementary Triangle in the Orthocenter.

de Longchamps Point = Perspector of Triangle ABC and the Triangle of the reflections of the vertices of the Anticevian Triangle of the de Longchamps Point in the de Longchamps Point.

de Longchamps Point = Homothetic Center of the Incentral Triangle and the Triangle of the reflections of the de Longchamps Point in the vertices of the Incentral Triangle.

de Longchamps Point = Homothetic Center of the Medial Triangle and the Triangle of the Centroids of the Triangulation Triangles of the de Longchamps Point.

de Longchamps Point = Homothetic Center of the Medial Triangle and the Triangle of the de Longchamps Points of the Anticevian Corner Triangles of the Centroid.

de Longchamps Point = Homothetic Center of the Medial Triangle and the Triangle of the Orthocenters of the Anticevian Corner Triangles of the Orthocenter.

de Longchamps Point = Homothetic Center of the Medial Triangle and the Triangle of the reflections of the de Longchamps Point in the vertices of the Medial Triangle.

de Longchamps Point = Homothetic Center of the Orthic Triangle and the Triangle of the reflections of the de Longchamps Point in the vertices of the Orthic Triangle.

de Longchamps Point = Homothetic Center of the Symmedial Triangle and the Triangle of the reflections of the de Longchamps Point in the vertices of the Symmedial Triangle.

de Longchamps Point = Homothetic Center of the Intouch Triangle and the Triangle of the reflections of the de Longchamps Point in the vertices of the Intouch Triangle.

de Longchamps Point = Homothetic Center of the Extouch Triangle and the Triangle of the reflections of the de Longchamps Point in the vertices of the Extouch Triangle.

de Longchamps Point = Perspector of the Excentral Triangle and the Triangle of the reflections of the de Longchamps Point in the sides of the Anticevian Triangle of the Spieker Center.

de Longchamps Point = Homothetic Center of the Excentral Triangle and the Triangle of the reflections of the de Longchamps Point in the vertices of the Excentral Triangle.

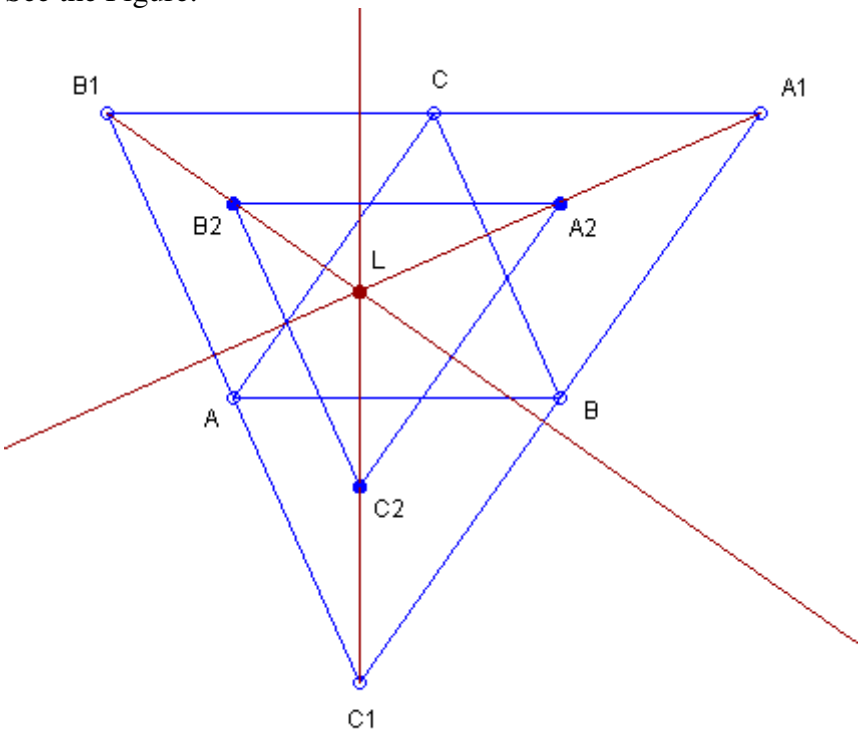
de Longchamps Point = Homothetic Center of the Anticomplementary Triangle and the Triangle of the de Longchamps Points of the Triangulation Triangles of the Orthocenter.

de Longchamps Point = Perspector of the Anticomplementary Triangle and the Triangle of the Orthocenters of the Triangulation Triangles of the de Longchamps Point.

de Longchamps Point = Perspector of the Anticomplementary Triangle and the Stevanovic Triangle of the Orthocenters of the Triangulation triangles of the de Longchamps Point.

de Longchamps Point = Homothetic Center of the Anticomplementary Triangle and the Triangle of the Orthocenters of the Anticevian Corner Triangles of the Centroid.

See the Figure:



$A_1B_1C_1$ - Anticomplementary Triangle;
A_2 - Orthocenter of triangle A_1BC;
B_2 - Orthocenter of triangle B_1CA;
C_2 - Orthocenter of triangle C_1AB;
$A_2B_2C_2$ - Triangle of the Orthocenters of the Anticevian Corner Triangles of the Centroid;
L - de Longchamps Point = Homothetic Center of triangles $A_1B_1C_1$ and $A_2B_2C_2$.

de Longchamps Point = Perspector of the Anticomplementary Triangle and the Triangle of the de Longchamps Points of the Anticevian Corner Triangles of the Orthocenter.

de Longchamps Point = Perspector of the Anticomplementary Triangle and the Triangle of the reflections of the de Longchamps Point in the sides of the Medial Triangle.

de Longchamps Point = Perspector of the Anticomplementary Triangle and the Triangle of the reflections of the de Longchamps Point in the sides of the Anticomplementary Triangle.

de Longchamps Point = Homothetic Center of the Anticomplementary Triangle and the Triangle of the reflections of the Orthocenter in the vertices of the Medial Triangle.

de Longchamps Point = Perspector of the Anticomplementary Triangle and the Triangle of the reflections of the Nagel Point in the vertices of the Extouch Triangle.

de Longchamps Point = Perspector of the Anticomplementary Triangle and the Triangle of

the reflections of the Nagel Point in the vertices of the Excentral Triangle.

de Longchamps Point = Homothetic Center of the Anticomplementary Triangle and the Triangle of the reflections of the de Longchamps Point in the vertices of the Anticomplementary Triangle.

de Longchamps Point = Perspector of the Anticomplementary Triangle and the Triangle of the reflections of the Orthocenter in the vertices of the Tangential Triangle.

de Longchamps Point = Homothetic Center of the Tangential Triangle and the Triangle of the reflections of the de Longchamps Point in the vertices of the Tangential Triangle.

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

de Longchamps Point = Anticomplement of the Orthocenter.

de Longchamps Point = Anticomplement of the Anticomplement of the Circumcenter.

de Longchamps Point = Isotomic Conjugate of the Isogonal Conjugate of the Centroid of the Cevian Triangle of the de Longchamps Point.

de Longchamps Point = Complement of the de Longchamps Point of the Anticomplementary Triangle.

de Longchamps Point = Anticomplement of the Circumcenter of the Anticomplementary Triangle.

de Longchamps Point = Anticomplement of the Orthocenter of the Euler Triangle.

de Longchamps Point = Anticomplement of the Kiepert-Parry Point of the Fuhrmann Triangle.

de Longchamps Point = Anticomplement of the Circumcenter of the Johnson Triangle.

de Longchamps Point = Anticomplement of the Anticomplement of the Center of the Outer Soddy Circle of the Lucas Central Triangle.

de Longchamps Point = Anticomplement of the Anticomplement of the Nine-Point Center of the Hexyl Triangle.

de Longchamps Point = Anticomplement of the Anticomplement of the Orthocenter of the Johnson Triangle.

de Longchamps Point = Anticomplement of the Isogonal Conjugate of the de Longchamps Point of the Euler Triangle.

de Longchamps Point = Anticomplement of the Isogonal Conjugate of the Center of the Outer Soddy Circle of the Lucas Central Triangle.

de Longchamps Point = Anticomplement of the Isogonal Conjugate of the Nine-Point Center of the Hexyl Triangle.

de Longchamps Point = Anticomplement of the Cyclocevian Conjugate of the Centroid of the First Brocard Triangle.

The de Longchamps Point lies on the Orthocentroidal Circle of the Anticomplementary Triangle.

The de Longchamps Point lies on the Orthocentroidal Circle of the Circumcevian Triangle of the Circumcenter.

The de Longchamps Point lies on the Hexyl Circle of the Circum-Orthic Triangle.

The de Longchamps Point lies on the Line through the Incenter and the Outer Eppstein Point.

The de Longchamps Point lies on the Line through the Incenter and the Inner Eppstein Point.

The de Longchamps Point lies on the Line through the Centroid and the Circumcenter.

The de Longchamps Point lies on the Line through the Centroid and the Orthocenter.

The de Longchamps Point lies on the Line through the Centroid and the Nine-Point Center.

The de Longchamps Point lies on the Line through the Centroid and the Exeter Point.

The de Longchamps Point lies on the Line through the Centroid and the Schiffler Point.

The de Longchamps Point lies on the Line through the Centroid and the Gibert Point.

The de Longchamps Point lies on the Line through the Centroid and the Skordev Point.

The de Longchamps Point lies on the Line through the Circumcenter and the Orthocenter.

The de Longchamps Point lies on the Line through the Circumcenter and the Nine-Point Center.

The de Longchamps Point lies on the Line through the Circumcenter and the Exeter Point.

The de Longchamps Point lies on the Line through the Circumcenter and the Schiffler Point.

The de Longchamps Point lies on the Line through the Circumcenter and the Gibert Point.

The de Longchamps Point lies on the Line through the Circumcenter and the Skordev Point.

The de Longchamps Point lies on the Line through the Orthocenter and the Schiffler Point.

The de Longchamps Point lies on the Line through the Orthocenter and the Skordev Point.

The de Longchamps Point lies on the Line through the Gergonne Point and the Incenter.

The de Longchamps Point lies on the Line through the Gergonne Point and the Outer Eppstein Point.

The de Longchamps Point lies on the Line through the Gergonne Point and the Inner Eppstein Point.

The de Longchamps Point lies on the Line through the Nine-Point Center and the Orthocenter.

The de Longchamps Point lies on the Line through the Nine-Point Center and the Schiffler Point.

The de Longchamps Point lies on the Line through the Nine-Point Center and the Skordev Point.

The de Longchamps Point lies on the Line through the Exeter Point and the Orthocenter.

The de Longchamps Point lies on the Line through the Exeter Point and the Nine-Point Center.

The de Longchamps Point lies on the Line through the Exeter Point and the Schiffler Point.

The de Longchamps Point lies on the Line through the Exeter Point and the Gibert Point.

The de Longchamps Point lies on the Line through the Exeter Point and the Skordev Point.

The de Longchamps Point lies on the Line through the Schiffler Point and the Skordev Point.

The de Longchamps Point lies on the Line through the Gibert Point and the Orthocenter.

The de Longchamps Point lies on the Line through the Gibert Point and the Nine-Point Center.

The de Longchamps Point lies on the Line through the Gibert Point and the Schiffler Point.

The de Longchamps Point lies on the Line through the Gibert Point and the Skordev Point.

The de Longchamps Point lies on the Line through the Inner Eppstein Point and the Outer Eppstein 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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