

## Incenter

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

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 Incenter:

Incenter = Nagel Point of the Medial Triangle.

Incenter = Circumcenter of the Intouch Triangle.

Incenter = Orthocenter of the Excentral Triangle.

Incenter = Spieker Center of the Anticomplementary Triangle.

Incenter = Orthocenter of the Anticevian Triangle of the Center of the Stevanovic Circle.

Incenter = Circumcenter of the Pedal Triangle of the Incenter.

Incenter = Nagel Point of the Pedal Triangle of the Circumcenter.

Incenter = Orthocenter of the Antipedal Triangle of the Incenter.

Incenter = Spieker Center of the Antipedal Triangle of the Orthocenter.

Incenter = Orthocenter of the Circum-Incentral Triangle.

Incenter = Bevan Point of the Circumcevian Triangle of the Circumcenter.

Incenter = Orthocenter of the Fuhrmann Triangle.

Incenter = Circumcenter of the Mid-Arc Triangle.

Incenter = Bevan Point of the Yff Central Triangle.

Incenter = Inner Vecten Point of the de Villiers Triangle.

Incenter = Circumcenter of the Hexyl Triangle.

Incenter = Center of the Fuhrmann Circle of the Johnson Triangle.

Incenter = Incenter of the Inner Johnson-Yff Triangle.

Incenter = Incenter of the Outer Johnson-Yff Triangle.

Incenter = Center of the Incircle.

Incenter = Center of the Conway Circle.

Incenter = Center of the Hexyl Circle.

Incenter = Center of the Adams Circle.

Incenter = Center of the Circumcircle of the Intouch Triangle.

Incenter = Center of the Second Droz-Farny Circle of the Intouch Triangle.

Incenter = Center of the First Droz-Farny Circle of the Excentral Triangle.

Incenter = Center of the Spieker Circle of the Anticomplementary Triangle.

Incenter = Center of the Radical Circle of the Excircles of the Anticomplementary Triangle.

Incenter = Center of the First Droz-Farny Circle of the Anticevian Triangle of the Center of the Stevanovic Circle.

Incenter = Center of the Circumcircle of the Pedal Triangle of the Incenter.

Incenter = Center of the Second Droz-Farny Circle of the Pedal Triangle of the Incenter.

Incenter = Center of the First Droz-Farny Circle of the Antipedal Triangle of the Incenter.

Incenter = Center of the Spieker Circle of the Antipedal Triangle of the Orthocenter.

Incenter = Center of the Radical Circle of the Excircles of the Antipedal Triangle of the Orthocenter.

Incenter = Center of the First Droz-Farny Circle of the Circum-Incentral Triangle.

Incenter = Center of the Bevan Circle of the Circumcevian Triangle of the Circumcenter.

Incenter = Center of the First Droz-Farny Circle of the Fuhrmann Triangle.

Incenter = Center of the Circumcircle of the Mid-Arc Triangle.

Incenter = Center of the Second Droz-Farny Circle of the Mid-Arc Triangle.

Incenter = Center of the Bevan Circle of the Yff Central Triangle.

Incenter = Center of the Circumcircle of the Hexyl Triangle.

Incenter = Center of the Second Droz-Farny Circle of the Hexyl Triangle.

Incenter = Center of the Incircle of the Inner Johnson-Yff Triangle.

Incenter = Center of the Conway Circle of the Inner Johnson-Yff Triangle.

Incenter = Center of the Hexyl Circle of the Inner Johnson-Yff Triangle.

Incenter = Center of the Adams Circle of the Inner Johnson-Yff Triangle.

Incenter = Center of the Incircle of the Outer Johnson-Yff Triangle.

Incenter = Center of the Conway Circle of the Outer Johnson-Yff Triangle.

Incenter = Center of the Hexyl Circle of the Outer Johnson-Yff Triangle.

Incenter = Center of the Adams Circle of the Outer Johnson-Yff Triangle.

Incenter = Center of the Outer Apollonius Circle of the Mixtilinear Incircles of the Mid-Arc Triangle.

Incenter = Center of the Outer Apollonius Circle of the Lucas Circles of the Intouch Triangle.

Incenter = Center of the Outer Apollonius Circle of the Lucas Circles of the Pedal Triangle of the Incenter.

Incenter = Center of the Outer Apollonius Circle of the Lucas Circles of the Mid-Arc Triangle.

Incenter = Center of the Outer Apollonius Circle of the Lucas Circles of the Hexyl Triangle.

Incenter = Center of the Outer Apollonius Circle of the Triad of the Incircles of the Triangulation Triangles of the Center of the Inner Soddy Circle.

Incenter = Center of the Outer Apollonius Circle of the Triad of the Bevan Circles of the Corner Triangles of the Gergonne Point.

Incenter = Midpoint between the Nagel Point of the Anticomplementary Triangle and the Nagel Point.

Incenter = Reflection of the Nagel Point in the Spieker Center.

Incenter = Reflection of the Fuhrmann Center in the Nine-Point Center.

Incenter = Reflection of the Spieker Center in the Complement of the Spieker Center.

Incenter = Reflection of the Evans Perspector in the Inverse of the Incenter in the Circumcircle.

Incenter = Reflection of the Centroid in the Midpoint of the Centroid and the Incenter.

Incenter = Reflection of the Circumcenter in the Midpoint of the Circumcenter and the Incenter.

Incenter = Reflection of the Orthocenter in the Midpoint of the Incenter and the Orthocenter.

Incenter = Reflection of the Symmedian Point in the Midpoint of the Incenter and the Symmedian Point.

Incenter = Reflection of the Gergonne Point in the Midpoint of the Gergonne Point and the Incenter.

Incenter = Reflection of the Nine-Point Center in the Midpoint of the Incenter and the Nine-Point Center.

Incenter = Reflection of the Mittenpunkt in the Midpoint of the Incenter and the Mittenpunkt.

Incenter = Product of the Centroid and the Incenter.

Incenter = Product of the Gergonne Point and the Mittenpunkt.

Incenter = Product of the Isogonal Conjugate of the Grinberg Point and the Spieker Center.

Incenter = Product of the First Jerabek Point and the Second Jerabek Point.

Incenter = Product of the Symmedian Point and the Isotomic Conjugate of the Incenter.

Incenter = Product of the Nagel Point and the Isogonal Conjugate of the Mittenpunkt.

Incenter = Product of the Clawson Point and the Symmedian Point of the Anticomplementary Triangle.

Incenter = Product of the Grinberg Point and the Isotomic Conjugate of the Spieker Center.

Incenter = Product of the Second Power Point and the Isotomic Conjugate of the Symmedian Point.

Incenter = Product of the Internal Center of Similitude of the Incircle and the Circumcircle and the Isotomic Conjugate of the Mittenpunkt.

Incenter = Miquel Point of the Gergonne Point.

Incenter = Inverse of the Evans Perspector in the Bevan Circle.

Incenter = Inverse of the Circumcenter in the Orthocentroidal Circle of the Hexyl Triangle.

Incenter = External Center of Similitude of the Bevan Circle and the Circumcircle.

Incenter = External Center of Similitude of the Inner Soddy Circle and the Outer Soddy Circle.

Incenter = External Center of Similitude of the Spieker Circle and the Spieker Circle of the Medial Triangle.

Incenter = External Center of Similitude of the Radical Circle of the Excircles and the Radical Circle of the Excircles of the Medial Triangle.

Incenter = External Center of Similitude of the Outer Soddy Circle and the Radical Circle of the Lucas Circles of the Intouch Triangle.

Incenter = External Center of Similitude of the Inner Johnson-Yff Circle and the Sine-Triple-Angle Circle of the Intouch Triangle.

Incenter = Internal Center of Similitude of the Circumcircle and the Nine-Point Circle of the Intouch Triangle.

Incenter = Internal Center of Similitude of the Bevan Circle and the Nine-Point Circle of the Intouch Triangle.

Incenter = Internal Center of Similitude of the Outer Johnson-Yff Circle and the Sine-Triple-Angle Circle of the Intouch Triangle.

Incenter = Internal Center of Similitude of the Inner Johnson-Yff Circle and the Outer Johnson-Yff Circle.

Incenter = Radical Center of the Incenter-Excenter Circles.

Incenter = Radical Center of the Soddy Circles.

Incenter = Radical Center of the Excircles of the Anticomplementary Triangle.

Incenter = Radical Center of the Excircles of the Antipedal Triangle of the Orthocenter.

Incenter = Radical Center of the Soddy Circles of the Inner Johnson-Yff Triangle.

Incenter = Radical Center of the Soddy Circles of the Outer Johnson-Yff Triangle.

Incenter = Radical Center of the Triad of the Circumcircles of the Triangulation Triangles of the Incenter.

Incenter = Perspector of Triangle ABC and the Medial Triangle of the Intouch Triangle.

Incenter = Perspector of the Incentral Triangle and the Excentral Triangle.

Incenter = Perspector of the Medial Triangle and the Anticevian Triangle of the Mittenpunkt.

Incenter = Perspector of the Extouch Triangle and the Anticevian Triangle of the Bevan Point.

Incenter = Perspector of the Cevian Triangle of the Schiffler Point and the Anticevian Triangle of the Circumcenter.

Incenter = Perspector of the Cevian Triangle of the Yff Center of Conguence and the Anticevian Triangle of the Congruent Isoscelizers Point.

Incenter = Perspector of the Incentral Triangle and the Antipedal Triangle of the Incenter.

Incenter = Perspector of the Intouch Triangle and the Antipedal Triangle of the Bevan Point.

Incenter = Perspector of the Incentral Triangle and the Circum-Incentral Triangle.

Incenter = Perspector of the Incentral Triangle and the Mixtilinear Triangle.

Incenter = Perspector of the Incentral Triangle and the Mid-Arc Triangle.

Incenter = Perspector of the Incentral Triangle and the Malfatti Central Triangle.

Incenter = Perspector of the Incentral Triangle and the Inner Johnson-Yff Triangle.

Incenter = Perspector of the Incentral Triangle and the Outer Johnson-Yff Triangle.

Incenter = Perspector of the Intouch Triangle and the Intangents Triangle.

Incenter = Homothetic Center of the Intouch Triangle and the Hexyl Triangle.

Incenter = Perspector of the Cevian Triangle of the Yff Center of Conguence and the de Villiers Triangle.

Incenter = Perspector of the Anticevian Triangle of the Mittenpunkt and the Pedal Triangle of the Circumcenter.

Incenter = Perspector of the Anticevian Triangle of the Bevan Point and the Pedal Triangle of the Bevan Point.

Incenter = Homothetic Center of the Excentral Triangle and the Circum-Incentral Triangle.

Incenter = Perspector of the Excentral Triangle and the Mixtilinear Triangle.

Incenter = Perspector of the Excentral Triangle and the Mid-Arc Triangle.

Incenter = Perspector of the Excentral Triangle and the Malfatti Central Triangle.

Incenter = Perspector of the Excentral Triangle and the Inner Johnson-Yff Triangle.

Incenter = Perspector of the Excentral Triangle and the Outer Johnson-Yff Triangle.

Incenter = Perspector of the Anticevian Triangle of the Congruent Isoscelizers Point and the de Villiers Triangle.

Incenter = Perspector of the Pedal Triangle of the Incenter and the Antipedal Triangle of the Bevan Point.

Incenter = Perspector of the Pedal Triangle of the Incenter and the Intangents Triangle.

Incenter = Homothetic Center of the Pedal Triangle of the Incenter and the Hexyl Triangle.

Incenter = Homothetic Center of the Antipedal Triangle of the Incenter and the Circum-Incentral Triangle.

Incenter = Perspector of the Antipedal Triangle of the Incenter and the Mixtilinear Triangle.

Incenter = Perspector of the Antipedal Triangle of the Incenter and the Mid-Arc Triangle.

Incenter = Perspector of the Antipedal Triangle of the Incenter and the Malfatti Central Triangle.

Incenter = Perspector of the Antipedal Triangle of the Incenter and the Inner Johnson-Yff Triangle.

Incenter = Perspector of the Antipedal Triangle of the Incenter and the Outer Johnson-Yff Triangle.

Incenter = Perspector of the Antipedal Triangle of the Bevan Point and the Intangents Triangle.

Incenter = Perspector of the Antipedal Triangle of the Bevan Point and the Hexyl Triangle.

Incenter = Perspector of the Circum-Incentral Triangle and the Mixtilinear Triangle.

Incenter = Perspector of the Circum-Incentral Triangle and the Mid-Arc Triangle.

Incenter = Perspector of the Circum-Incentral Triangle and the Malfatti Central Triangle.

Incenter = Perspector of the Circum-Incentral Triangle and the Inner Johnson-Yff Triangle.

Incenter = Perspector of the Circum-Incentral Triangle and the Outer Johnson-Yff Triangle.

Incenter = Perspector of the Intangents Triangle and the Hexyl Triangle.

Incenter = Perspector of the Mixtilinear Triangle and the Mid-Arc Triangle.

Incenter = Perspector of the Mixtilinear Triangle and the Malfatti Central Triangle.

Incenter = Perspector of the Mixtilinear Triangle and the Inner Johnson-Yff Triangle.

Incenter = Perspector of the Mixtilinear Triangle and the Outer Johnson-Yff Triangle.

Incenter = Perspector of the Mid-Arc Triangle and the Mixtilinear Triangle.

Incenter = Perspector of the Mid-Arc Triangle and the Malfatti Central Triangle.

Incenter = Perspector of the Mid-Arc Triangle and the Inner Johnson-Yff Triangle.

Incenter = Perspector of the Mid-Arc Triangle and the Outer Johnson-Yff Triangle.

Incenter = Perspector of the Malfatti Central Triangle and the Mixtilinear Triangle.

Incenter = Perspector of the Malfatti Central Triangle and the Mid-Arc Triangle.

Incenter = Perspector of the Malfatti Central Triangle and the Inner Johnson-Yff Triangle.

Incenter = Perspector of the Malfatti Central Triangle and the Outer Johnson-Yff Triangle.

Incenter = Perspector of the Hexyl Triangle and the Intangents Triangle.

Incenter = Perspector of the Inner Johnson-Yff Triangle and the Mixtilinear Triangle.

Incenter = Perspector of the Inner Johnson-Yff Triangle and the Mid-Arc Triangle.

Incenter = Perspector of the Inner Johnson-Yff Triangle and the Malfatti Central Triangle.

Incenter = Homothetic Center of the Inner Johnson-Yff Triangle and the Outer Johnson-Yff Triangle.

Incenter = Perspector of the Outer Johnson-Yff Triangle and the Mixtilinear Triangle.

Incenter = Perspector of the Outer Johnson-Yff Triangle and the Mid-Arc Triangle.

Incenter = Perspector of the Outer Johnson-Yff Triangle and the Malfatti Central Triangle.

Incenter = Homothetic Center of the Outer Johnson-Yff Triangle and the Inner Johnson-Yff Triangle.

Incenter = Perspector of Triangle ABC and the Triangle of the Circumcenters of the Triangulation Triangles of the Incenter.



Incenter = Perspector of Triangle ABC and the Stevanovic Triangle of the Circumcenters of the Triangulation triangles of the Incenter.

Incenter = Perspector of Triangle ABC and the Stevanovic Triangle of the Incenters of the Triangulation triangles of the First Isodynamic Point.

Incenter = Perspector of Triangle ABC and the Stevanovic Triangle of the Incenters of the Triangulation triangles of the Second Isodynamic Point.

Incenter = Perspector of Triangle ABC and the Triangle of the Circumcenters of the Anticevian Corner Triangles of the Incenter.

Incenter = Homothetic Center of Triangle ABC and the Triangle of the Nagel Points of the Anticevian Corner Triangles of the Centroid.

Incenter = Perspector of Triangle ABC and the Triangle of the reflections of the Incenter in the sides of the Intouch Triangle.

Incenter = Homothetic Center of Triangle ABC and the Triangle of the reflections of the Incenter in the sides of the Excentral Triangle.

Incenter = Perspector of Triangle ABC and the Triangle of the reflections of the Incenter in the vertices of the Incidental Triangle.

Incenter = Homothetic Center of Triangle ABC and the Triangle of the reflections of the Nagel Point in the vertices of the Medial Triangle.

Incenter = Perspector of Triangle ABC and the Triangle of the reflections of the Incenter in the vertices of the Excentral Triangle.

Incenter = Perspector of Triangle ABC and the Triangle of the reflections of the Nagel Point in the vertices of the Anticevian Triangle of the Grinberg Point.

Incenter = Perspector of Triangle ABC and the Triangle of the reflections of the vertices of the Incidental Triangle in the Incenter.

Incenter = Perspector of Triangle ABC and the Triangle of the reflections of the vertices of the Excentral Triangle in the Incenter.

Incenter = Homothetic Center of Triangle ABC and the Triangle of the reflections of the vertices of the Anticomplementary Triangle in the Spieker Center.

Incenter = Perspector of Triangle ABC and the Triangle of the reflections of the vertices of the Anticevian Triangle of the Mittenpunkt in the Circumcenter.

Incenter = Perspector of Triangle ABC and the Outer Apollonius Triangle of the Lucas Circles of the Incidental Triangle.

Incenter = Perspector of Triangle ABC and the Outer Apollonius Triangle of the Lucas

Circles of the Excentral Triangle.

Incenter = Perspector of Triangle ABC and the Outer Apollonius Triangle of the Lucas Circles of the Antipedal Triangle of the Incenter.

Incenter = Perspector of Triangle ABC and the Outer Apollonius Triangle of the Lucas Circles of the Circum-Incentral Triangle.

Incenter = Perspector of Triangle ABC and the Outer Apollonius Triangle of the Lucas Circles of the Mixtilinear Triangle.

Incenter = Perspector of Triangle ABC and the Outer Apollonius Triangle of the Lucas Circles of the Mid-Arc Triangle.

Incenter = Perspector of Triangle ABC and the Outer Apollonius Triangle of the Lucas Circles of the Malfatti Central Triangle.

Incenter = Homothetic Center of Triangle ABC and the Outer Apollonius Triangle of the Lucas Circles of the Inner Johnson-Yff Triangle.

Incenter = Homothetic Center of Triangle ABC and the Outer Apollonius Triangle of the Lucas Circles of the Outer Johnson-Yff Triangle.

Incenter = Complement of the Nagel Point.

Incenter = Isogonal Conjugate of the Complement of the Nagel Point.

Incenter = Isotomic Conjugate of the Complement of the Equal Parallelians Point.

Incenter = Anticomplement of the Spieker Center.

Incenter = Isogonal Conjugate of the Anticomplement of the Spieker Center.

Incenter = Isotomic Conjugate of the Anticomplement of the Grinberg Point.

Incenter = Isogonal Conjugate of the Incenter.

Incenter = Complement of the Isogonal Conjugate of the External Center of Similitude of the Incircle and the Circumcircle.

Incenter = Isotomic Conjugate of the Isogonal Conjugate of the Second Power Point.

Incenter = Isotomic Conjugate of the Equal Parallelians Point of the Medial Triangle.

Incenter = Complement of the Isotomic Conjugate of the Symmedian Point of the Intouch Triangle.

Incenter = Isogonal Conjugate of the Isotomic Conjugate of the Equal Parallelians Point of the Medial Triangle.

Incenter = Second Brocard Point of the First Jerabek Point.

Incenter = First Brocard Point of the Second Jerabek Point.

The Incenter lies on the Brocard Circle of the Intouch Triangle.

The Incenter lies on the Orthocentroidal Circle of the Excentral Triangle.

The Incenter lies on the Orthocentroidal Circle of the Anticevian Triangle of the Center of the Stevanovic Circle.

The Incenter lies on the Brocard Circle of the Pedal Triangle of the Incenter.

The Incenter lies on the Orthocentroidal Circle of the Antipedal Triangle of the Incenter.

The Incenter lies on the Orthocentroidal Circle of the Circum-Incentral Triangle.

The Incenter lies on the Bevan Circle of the Intangents Triangle.

The Incenter lies on the Orthocentroidal Circle of the Fuhrmann Triangle.

The Incenter lies on the Brocard Circle of the Mid-Arc Triangle.

The Incenter lies on the Brocard Circle of the Hexyl Triangle.

### **Invitation**

The reader is invited to submit a note/paper containing synthetic proofs of results from the above list. The reader is invited to submit a note/paper containing references about results from the above list.

### **Definitions**

We use the definitions in accordance with [1 - 6].

### **References**

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