**POINTS OF CONCURRENCY CHART**

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|  | **Name of** **Special Segment** **of Triangle** | **Point of****Concurrency** | **Property** **of Point** **of Concurrency** | **Relation to a Circle** | **Where does the point lie?****Inside, Outside or On the Triangle?** |
| **Special Type of Triangle** |
| **Acute** | **Obtuse** | **Right** |
| circumcenter and circumcircle | Perpendicular Bisector | Circumcenter | Equidistant from the vertices of the triangle | Center of the circumscribed circle | Inside | Outside | On (at the midpoint of the hypotenuse) |
| incenter and incircle | Angle Bisector | Incenter | Equidistant from each side of the triangle | Center of the inscribed circle | Inside | Inside | Inside |
| centroid | Median | Centroid | The distance from a vertex to the centroid is two-thirds of the median.The distance from a midpoint to the centroid is one-third of the median. | Center of gravity | Inside | Inside | Inside |
| othocenter | Altitude | Orthocenter | The distance from the orthocenter to a vertex is twice the distance from the circumcenter to the opposite side | None | Inside | Outside | On (At the vertex of the right angle) |

**Euler Line** - line that would pass through

 the orthocenter, circumcenter, and centroid

 of the triangle

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