Special Segments in Triangles.

I can locate and use the properties of altitudes, angle bisectors, medians and perpendicular bisectors.

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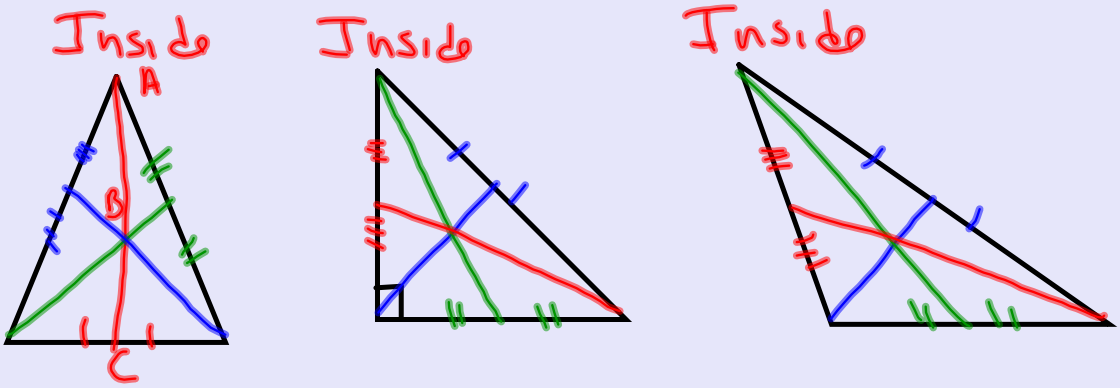
Median -

A segment from a vertex of a triangle that intersects the opposite side at the midpoint.

Centroid - The intersection of the medians.

Where is the centroid located in each type of triangle?



$AB = \frac{2}{3}AC$, $BC = \frac{1}{3}AC$

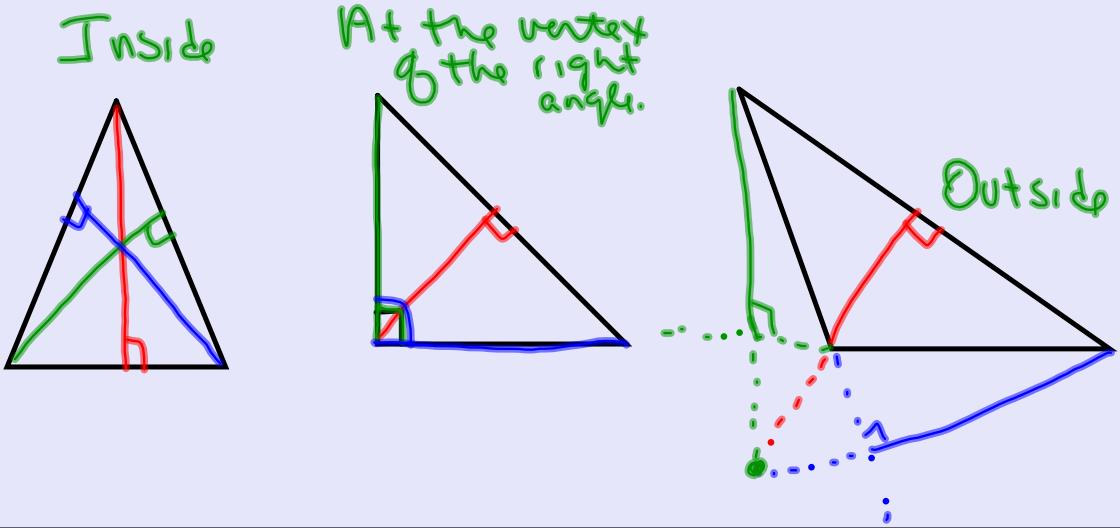
What is special about the centroid?

Altitude-

A segment from a vertex of a triangle that is perpendicular with the opposite side.

Orthocenter - The intersection of the altitudes.

Where is the orthocenter located in each type of triangle?



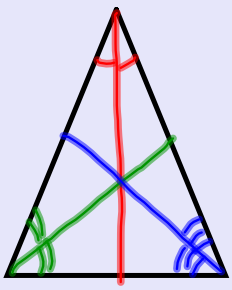
Angle Bisector -

A segment from a vertex of a triangle that bisects the angle and intersects the opposite side.

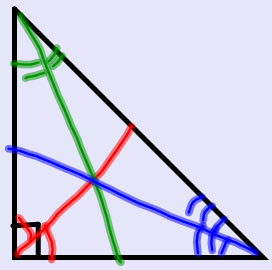
Incenter - The intersection of the angle bisectors.

Where is the incenter located in each type of triangle?

Inside



Inside



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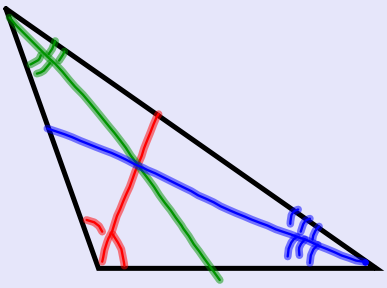


The Incenter is the same distance from each side.

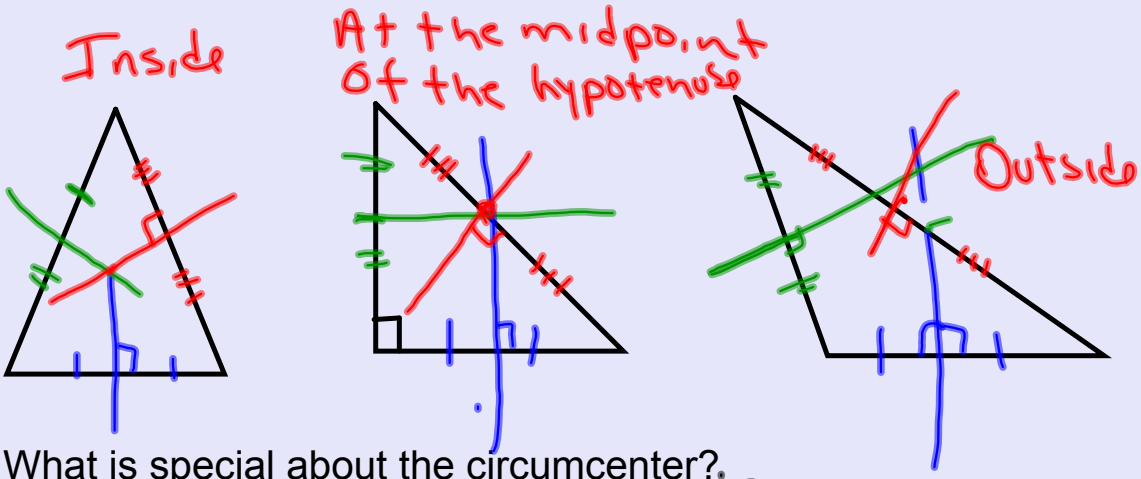
What is special about the incenter?

Perpendicular Bisector -

A segment from a vertex of a triangle that is perpendicular to the opposite side and intersects the side at the midpoint.

Circumcenter - The intersection of the perpendicular bisectors.

Where is the circumcenter located in each type of triangle?



What is special about the circumcenter?

The circumcenter is the same distance from each vertex.

In what kind of triangle(s) are all of the segments the same?

Isosceles, Equilateral

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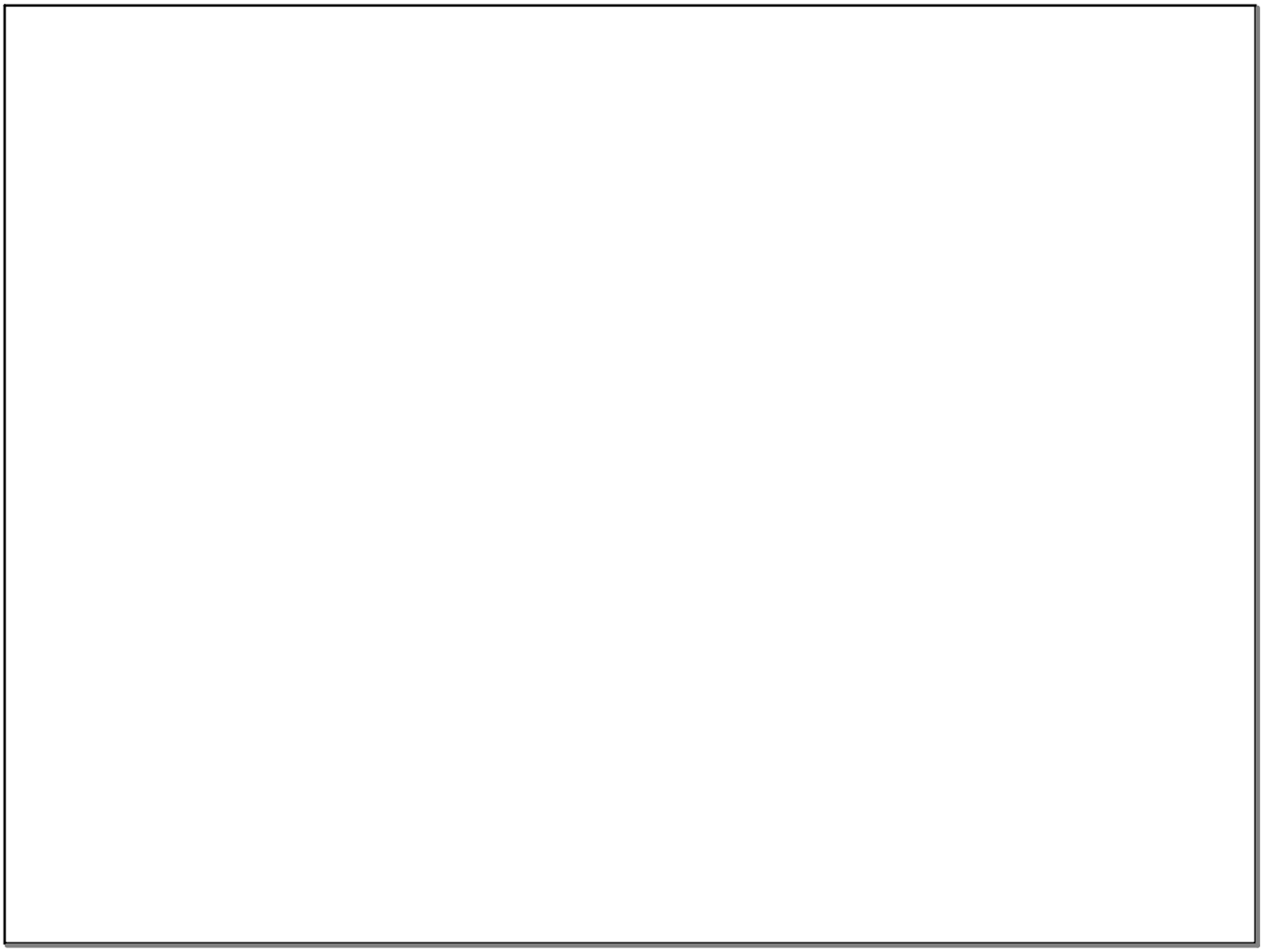

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