Research & Reviews: Journal of Statistics and Mathematical Sciences

# Different types of Acute Angle Triangle, its Properties and Inequalities

John Morris*

Department of Applied Mathematics and Theoretical Physics, The University of Bristol, Bristol, UK

Perspective

**Received:** 03-Jun-2022, Manuscript No. JSMS-22-66474; **Editor assigned:** 06-Jun-2022, Pre QC No. JSMS-22-66474 (PQ); **Reviewed:** 20-Jun-2022, QC No. JSMS-22-66474; **Revised:** 27-Jun-2022, Manuscript No. JSMS-22-66474 (A); **Published:** 05-Jul-2022, DOI: 10.4172/J Stats Math Sci.8.5.004.

***For Correspondence:**
John Morris,
Department of Applied Mathematics and Theoretical Physics, The University of Bristol, Bristol, UK
**E-mail: Johnmorris@sheffield.ac.uk**

## ABOUT THE STUDY

A triangle with three acute angles (less than 90°) is known as an acute triangle (or acute-angled triangle). A triangle with one obtuse angle (more than 90°) and two acute angles is called an obtuse triangle (or obtuse-angled triangle). In Euclidean geometry, a triangle's angles must sum to 180°, hence no Euclidean triangle can have more than one obtuse angle. Oblique triangles are divided into two types: Acute and obtuse. Oblique triangles are not right triangles because they do not have a 90° angle. The centroid (the intersection of the medians, each of which connects a vertex to the midway of the opposite side) and the incenter (the centre of the circle that is internally tangent to all three sides) are both in the interior of the triangle in all triangles. While the orthocenter and circumcenter are on the inside of an acute triangle, they are on the outside of an obtuse triangle. The orthocenter is the place where the triangle's three altitudes meet, each of which connects a side to the opposing vertex perpendicularly. In the case of an acute triangle, all three of these segments are completely within the triangle's interior, and so intersect. In an obtuse triangle, however, the heights from the two acute angles intersect only the opposite sides' extensions. These elevations are totally outside the triangle, resulting in their intersection in the triangle's exterior (and therefore with the extended altitude from the obtuse-angled vertex).

Similarly, the circumcenter of a triangle—the point where the perpendicular bisectors of the three sides intersect, which is the centre of the circle that goes through all three vertices—is inside an acute triangle but outside an obtuse triangle.

The in-between instance is the right triangle, which has both its circumcenter and orthocenter on its boundary. Any two angle measures A and B opposing sides a and b are connected according to A>B if and only if a>b in any triangle.

This indicates that in an obtuse triangle, the longest side is the one opposite the obtuse-angled vertex. An acute triangle has three inscribed squares, each having one side that corresponds to a portion of one of the triangle's sides and the square's other two vertices on the triangle's remaining two sides. (Two of them are blended into the same square in a right triangle, leaving just two separate inscribed squares.) An obtuse triangle, on the other hand, has only one inscribed square, one of whose sides coincides with part of the triangle's longest side.

A three-sided polygon with three edges, three vertices, and three interior angles is known as a triangle. A triangle is a closed two-dimensional figure with three sides and three angles, in other words. Triangles are divided into various sorts based on their sides and angles. Each one has its unique set of characteristics.

There are different types of triangles, they are as follows:

- Acute
- Equilateral
- Ideal
- Isosceles
- Kepler
- Obtuse
- Right

## Inequalities

- Sides
- Altitude
- Medians
- Area
- Circumradius, inradius, and exradii

## Properties of acute triangle

The acute triangle is characterized by a variety of triangles with a few key characteristics. The following are the properties of an acute-angled triangle:

- All of the interior angles of an acute triangle are less than 90 degrees.
- The smallest side of the triangle is the side opposite the smallest angle.
- The sum of the squares of two smaller sides is less than the square of the longest side.
- Inside the triangle seem to be the points of concurrency: Centroid, Incenter, Circumcenter, and Orthocenter.