

Definitions and descriptions

Inside and outside area of a simple polygon.

A simple polygon divides the surface into two connected parts: the inside and the outside area. Characteristic of the outside area: it is infinitely big. The polygon by definition does not belong to the inside or the outside area.

Adjacent and non-adjacent vertices

Each vertex of a polygon has two adjacent vertices, the line segment from a vertex to its adjacent vertex makes up one side of the polygon. All other vertices are non-adjacent vertices.

Convex polygon

A simple polygon with only protruding angles is called a convex polygon.

Diagonal of a simple polygon

An connecting line segment that lies entirely inside the polygon is called a diagonal.

Straight angle

A vertex is said to be straight when the corresponding angle is 180° .

Intruding angle

A vertex is said to be intruding if the corresponding angle is between 180° and 360°

Cape

A vertex p_i of a polygon is called a cape if $p_{i-1} p_{i+1}$ is a diagonal.

Polygon with n vertices ($n > 2$)

A polygon is a closed figure that is made by n (thus a finite number) line segments.

There are n different vertices p_1, p_2, \dots, p_n ; the vertices of the polygon.

The polygon has n sides $s_1 = p_1 p_2, s_2 = p_2 p_3, \dots, s_{n-1} = p_{n-1} p_n$ and $s_n = p_n p_1$.

Simple polygon

A simple polygon doesn't have any sides that cross each other.

Triangulation of a simple polygon with n sides

A triangulation of a polygon P is the partition of its inside area into triangles that do not overlap each other and the vertices remain vertices of P .

Protruding angle

A vertex is said to be protruding if the corresponding angle is between 0° and 180° .