Is A Triangle A Polygon

The segments of a closed polygonal chain are called its edges or sides. The points where two edges meet are the polygon's vertices or corners. An n-gon is a polygon with n sides; for example, a triangle is a 3-gon. 6bf27008b5 A simple polygon is one which does not intersect itself. More precisely, the only allowed intersections among the line segments that make up the polygon are the shared endpoints of consecutive segments in the polygonal chain. A simple polygon is the boundary of a region of the plane that is called a solid polygon. The interior of a solid polygon is its body, also known as a polygonal region or polygonal area. In contexts where one is concerned only with simple and solid polygons, a polygon may refer only to a simple polygon or to a solid polygon. 6bf27008b5 A polygonal chain may cross over itself, creating star polygons and other self-intersecting polygons. Some sources also consider closed polygonal chains in Euclidean space to be a type of polygon (a skew polygon), even when the chain does not lie in a single plane. 6bf27008b5 == Examples == 6bf27008b5 One definition of a star polygon, used in turtle graphics, is a polygon having q ≥ 2 turns (q is called the turning number or density), like in spirolaterals. 6bf27008b5 All triangles are tangential, as are all regular polygons with any number of sides. A well-studied group of tangential polygons are the tangential quadrilaterals, which include the rhombi and kites. 6bf27008b5

Polygon meet are the polygon's vertices or corners. An n-gon is a polygon with n sides; for example, a triangle is a 3-gon. A simple polygon is one which does In geometry, a polygon () is a plane figure made up of line segments connected to form a closed polygonal chain 6bf27008b5

Midpoint polygon It is sometimes called the Kasner polygon after Edward Kasner, who termed it the inscribed polygon "for brevity". Kasner, who termed it the inscribed polygon "for brevity". The midpoint polygon of a triangle is called the medial triangle. It shares the same centroid and In geometry, the midpoint polygon of a polygon P is the polygon whose vertices are the midpoints of the edges of P 6bf27008b5

Polygon triangulation , finding a set of triangles with pairwise non-intersecting interiors whose union is P. e. , finding a set of triangles with pairwise In computational geometry, polygon triangulation is the partition of a polygonal area (simple polygon) P into a set of triangles, i. geometry, polygon triangulation is the partition of a polygonal area (simple polygon) P into a set of triangles, i. e 6bf27008b5

== General properties == 6bf27008b5 In non-Euclidean geometries, three "straight" segments... 6bf27008b5

Triangle The corners, also called vertices, are zero-dimensional points while the sides connecting them, also called edges, are one-dimensional line segments. Sometimes an arbitrary edge is chosen to be the base, in which case the opposite vertex is called the apex; the shortest segment between the base and apex is the height. The triangle is a plane figure and its interior is a planar region. The area of a triangle equals one-half the product of height and base length. It is one of the basic shapes in geometry and the simplest of polygons. It is one of the basic shapes in geometry and the simplest of A triangle or trigon is a polygon consisting of three sides connected at three corners. A triangle has three internal angles, each one bounded by a pair of adjacent sides; the sum of angles of a triangle always equals a straight angle (180 degrees or π radians). A triangle or trigon is a polygon consisting of three sides connected at three corners 6bf27008b5

Equilateral triangle An equilateral triangle is a triangle with three sides of equal length and three equal angles. It is a regular polygon, occasionally known as the regular triangle. Its internal angle is 60° in degree or π/3 in radian. It is a regular polygon, occasionally known as the regular triangle. Its appearance is unchanged by three reflection lines, each of which passing through a vertex to the midpoint of the opposite edge, and three rotations around its centroid (0°, 120°, 240°). Its area is a quarter of the square root of three multiplied with its squared side length. Its perimeter is three times the side length. It is a special case of an isosceles triangle by modern definition. triangle is a triangle with three sides of equal length and three equal angles 6bf27008b5

== Strictly convex polygon == 6bf27008b5 Branko Grünbaum identified two primary usages of this terminology by Johannes Kepler, one corresponding to the regular star polygons with intersecting edges that do not generate new vertices, and the other one to the isotoxal concave simple polygons. 6bf27008b5 An equiangular polygon can be constructed from a regular polygon or regular star polygon where edges are extended as infinite lines. Each edges can be independently moved perpendicular to the line's direction. Vertices represent the intersection point between pairs of neighboring line. Each moved... 6bf27008b5 A spirolateral nθ is a special case of an equiangular polygon with a set of n integer edge lengths repeating sequence until returning to the start, with vertex internal angles θ. 6bf27008b5

Tangential polygon The dual polygon of a tangential polygon is a cyclic polygon, which has a circumscribed circle passing through each of its vertices. This is In Euclidean geometry, a tangential polygon, also known as a circumscribed polygon, is a convex polygon that contains an inscribed circle (also called an incircle). a tangential polygon, also known as a circumscribed polygon, is a convex polygon that contains an inscribed circle (also called an incircle). This is a circle that is tangent to each of the polygon's sides 6bf27008b5

== Polygon triangulation without extra vertices == 6bf27008b5 Applications of an equilateral triangle are in popular culture, architecture, and other science fields such as the resemblance of the trigonal planar molecular geometry in stereochemistry, ternary plots in several fields, Einthoven's triangle in electrocardiography, as a solution of the Thomson problem and of the celestial mechanics's three-body problem, the Laser Interferometer Space Antenna's three identical observatory of gravitational waves spacecraft, and triangulation concept in satellite geodesy. 6bf27008b5 A polygon is a 2-dimensional example of the more general... 6bf27008b5 Over time, a number of algorithms have been proposed to triangulate a polygon. 6bf27008b5 == Construction == 6bf27008b5 A convex polygon has an incircle if and only if all of its internal angle bisectors are concurrent. This common point is the incenter (the center of the incircle). 6bf27008b5 There exists a tangential polygon of n sequential sides of lengths a1, ..., an if and only if the system of equations 6bf27008b5 Star polygon names combine a numeral prefix, such as penta-, with the Greek suffix -gram (in this case generating the word pentagram). The prefix is normally a Greek cardinal, but synonyms using other prefixes exist. For example, a nine-pointed polygon or enneagram is also known as a nonagram, using the ordinal nona from Latin. The -gram suffix derives from γραμμή (grammḗ), meaning a line. The name star... 6bf27008b5 In Euclidean geometry, any two points determine a unique line segment situated within a unique straight line, and any three points that do not all lie on the same straight line determine a unique triangle situated within a unique flat plane. More generally, four points in three-dimensional Euclidean space determine a solid figure called tetrahedron. 6bf27008b5 == Characterizations == 6bf27008b5

Convex polygon In particular, it is a simple polygon (not self-intersecting). geometry, a convex polygon is a polygon that is the boundary of a

convex set. This means that the line segment between two points of the polygon is contained In geometry, a convex polygon is a polygon that is the boundary of a convex set. Equivalently, a polygon is convex if every line that does not contain any edge intersects the polygon in at most two points. This means that the line segment between two points of the polygon is contained in the union of the interior and the boundary of the polygon 6bf27008b5

A convex polygon is strictly convex if no line contains more than two vertices of the polygon. In a convex polygon, all interior angles are less than or equal to 180 degrees, while in a strictly convex polygon all interior angles are strictly less than 180 degrees. 6bf27008b5 For clarity, a planar equiangular polygon can be called direct or indirect. A direct equiangular polygon has all angles turning in the same direction in a plane and can include multiple turns. Convex equiangular polygons are always direct. An indirect equiangular polygon can include angles turning right or left in any combination. A skew equiangular polygon may be isogonal, but can't be considered direct since it is nonplanar. 6bf27008b5

Regular polygon Regular polygons may be either convex or star. In Euclidean geometry, a regular polygon is a polygon that is direct equiangular (all angles are equal in measure) and equilateral (all sides have the In Euclidean geometry, a regular polygon is a polygon that is direct equiangular (all angles are equal in measure) and equilateral (all sides have the same length). In the limit, a sequence of regular polygons with an increasing number of sides approximates a circle, if the perimeter or area is fixed, or a regular apeirogon (effectively a straight line), if the edge length is fixed 6bf27008b5

== Names == 6bf27008b5

Star polygon Regular star polygons have been studied in depth; while star polygons in general appear not In geometry, a star polygon is a type of non-convex polygon. Regular star polygons have been studied in depth; while star polygons in general appear not to have been formally defined, certain notable ones can arise through truncation operations on regular simple or star polygons. In geometry, a star polygon is a type of non-convex polygon 6bf27008b5

Polygrams include polygons like the pentagram, but also compound figures like the hexagram. 6bf27008b5 The two tessellation's instances are the triangular tiling where six equilateral... 6bf27008b5 Triangulations may be viewed as special cases of planar straight-line graphs. When there are no holes or added points, triangulations form maximal outerplanar graphs. 6bf27008b5

Equiangular polygon Isogonal polygons are equiangular polygons which alternate two edge lengths. If the lengths of the sides are also equal (that is, if it is also equilateral) then it is a regular polygon. If the lengths of the sides are also equal (that is, if it is also equilateral) then it is a regular In Euclidean geometry, an equiangular polygon is a polygon whose vertex angles are equal. equiangular polygon is a polygon whose vertex angles are equal 6bf27008b5