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Polygons are 2D shapesthat have a certain number of sides. Their sides aresimply joined by straight lines. Another thing to note is thatpolygons do not have holes, nor do they intersectwith themselves. As for the number of sides, they could go on for infinity.Polygons with sides 1-10 such as triangle, square, pentagon, hexagon, heptagon, octagon, nonagon and decagon are well known but when number of sides get larger the naming becomes complicated and therefore, we follow a naming convention.These all are regular polygons in which all angles are equal in measure and all sides have the same length. Regular polygons may be either convex or star.Lets have a look at the list of all polygon names and know what they are called.Following is a list of polygons 1-100 and their names with the number of sides they have and an example picture.Name of PolygonNumber of SidesPictureTrigon/ triangleThree 3Tetragon/ quadrilateral/ rectangle/ parallelogram/ square/ rhombusFour 4PentagonFive 5HexagonSix 6HeptagonSeven 7OctagonEight 8Nonagon/enneagonNine 9DecagonTen 10HendecagonEleven 11DodecagonTwelve 12TriskaidecagonThirteen 13TetradecagonFourteen 14PentadecagonFifteen 15HexadecagonSixteen 16HeptadecagonSeventeen 17OctadecagonEighteen 18NonadecagonNineteen 19IcosagonTwenty 20IcosikaihenagonTwenty one 21IcosikaidigonTwenty two 22IcosikaitrigonTwenty three 23IcosikaitetragonTwenty four 24IcosikaipentagonTwenty five 25IcosikaihexagonTwenty six 26IcosikaiheptagonTwenty seven 27IcosikaioctagonTwenty eight 28IcosikainonagonTwenty nine 29TriacontagonThirty 30TriacontahenagonThirty one 31TriacontakaidigonThirty two 32TriacontakaitrigonThirty three 33TriacontakaitetragonThirty four 34TriacontakaipentagonThirty five 35TriacontakaihexagonThirty six 36TriacontakaiheptagonThirty seven 37TriacontakaioctagonThirty eight 38TriacontakainonagonThirty nine 39TetracontagonForty 40TetracontakaihenagonForty one 41TetracontakaidigonForty two 42TetracontakaitrigonForty three 43TetracontakaitetragonForty four 44TetracontakaipentagonForty five 45TetracontakaihexagonForty six 46TetracontakaiheptagonForty seven 47TetracontakaioctagonForty eight 48TetracontakainonagonForty nine 49PentacontagonFifty 50HexacontagonSixty 60HeptacontagonSeventy 70OctacontagonEighty 80NonacontagonNinety 90NonacontakaihenagonNinety one 91NonacontakaidigonNinety two 92NonacontakaitrigonNinety three 93NonacontakaitetragonNinety four 94NonacontakaipentagonNinety five 95NonacontakaihexagonNinety six 96NonacontakaiheptagonNinety seven 97NonacontakaioctagonNinety eight 98NonacontakainonagonNinety nine 99HectogonOne hundred 100360-gonThree hundred and sixty 360ChiliagonOne thousand 1000N-gonnHow to name a Polygon with N-sides?As for their names, polygons have very straightforward names for the first ten or twenty names. They use a basic prefix naming system. Di, tri, tetra, penta, and so on. We are familiar with these prefixes as they are used in a variety of mathematicaland even scientificsubjects. But polygons with 21-99 sides have a different naming system. First, we use a prefix for the tens (such as triaconta30). Then we use a prefix for the ones (such as di20). At last, we put them together with a kai between them. This would be formatted to look like (tens)kai(ones)gon. And for the sake of an example, we have (triaconta)kai(di)gon. In simpler words, a 32-sided polygon. We can normally refer to it as a 32-gon.When you think of a polygon, you may think of basic shapes you may have learned of in school. A square, a rectanglemaybe even a parallelogram. But have you ever heard of a hectogon? What about a nonahectanonacontakaiheptagon? You probably might not have even read the whole word. This is the name for a polygon with 997 sides. Or, you could simply call it a 997-gon. This is how we classify the more complicated names. They are written as a variable:n-gon. You can replace thenwith any number you like!Remember that polygons start at only three sides but can go on for infinity. There is no limit to how many sides a polygon can have! How cool is that?Looking at the pictures, you may have also noticed that with every added side, the polygon starts to look more and more like a circle. How interesting is it to know that it would never quite become a perfect circle?Keep exploring EnglishBix to learn more about math vocabulary words for school kids.Quick Links In geometry, a polygon can be defined as a flat or plane, two-dimensionalclosed shapebounded with straight sides. It does not havecurvedsides. The sides of a polygon are also called its edges. The points where two sides meet are the vertices (or corners) of a polygon. Here are a few examples of polygons. Here are a few non-examples of a polygon Polygons are named on the basis of the number of sides it has. Polygons are generally denoted by n-gon where n represents the number of sides it has, For example, a five-sided polygon is named as 5-gon, a ten-sided is named as 10-gon, and so on. However, few polygons have some special names. The minimum number of sides a polygon can have is 3 because it needs a minimum of 3 sides to be a closed shape or else it will be open. Even though polygons with sides greater than 10, also have special names, we generally denote them with n-gon as the names are complex and not easy to remember. The polygons can be classified on the basis of the number of sides and angles it has: Classification on the basis of sides: Regular and Irregular Polygons: Regular Polygons Polygons that have equal sides and angles are regular polygons. For example, an equilateral triangle is a three-sided regular polygon. A square is a four-sided regular polygon. A Regular hexagon is a six-sided regular polygon. Here are a few examples of regular polygons. Irregular Polygons Polygons with unequal sides and angles are irregular polygons. Here are a few examples of irregular polygons. Classification on the basis of angles: Convex and Concave Polygons: Convex Polygons A convex polygon is a polygon with all interior angles less than 180. In convex polygons, all diagonals are in the interior of the polygon. (Diagonal is a line segment joining any two non-consecutive vertices of a polygon) Here are a few examples of convex polygons. Concave Polygons A concave polygon is a polygon with at least one interior angle greater than 180. In concave polygons, not all diagonals are in the interior of the polygon. Here are a few examples of concave polygons. Difference between Convex and Concave Polygon 3. Simple and Complex Polygon: Simple Polygon A simple polygon has only one boundary. The sides of a simple polygon do not intersect. Complex Polygon Complex polygon is a polygon whose sides cross over each other one or more times. Sum of Angles of a Polygon 1. Sum of the interior angles of a polygon: Sum of the interior angles of a polygon with n sides = (n 2) 180 For example: Consider the following polygon with 6 sides Here, a + b + c + d + e + f = (6 2) 180 = 720 (n = 6 as given polygon has 6 sides) 2. Sum of the exterior angles of polygons Sum of the exterior angles of polygons = 360 The sum will always be equal to 360 degrees, irrespective of the number of sides it has. For example: Consider the following polygon with 5 sides Here, m + n + o + p + q = 360 Angles in Regular Polygon In a regular polygon, all its sides are equal interior angles are equal exterior angles are equal Interior Angle: Sum of the interior angles of a polygon with n sides = (n 2) 180 So, each interior angles = (n 2) 180n Exterior Angle: Sum of the exterior angles of polygons = 360 So, each exterior angle = 360n Sum of Interior Angle and Exterior Angle: Whether the polygon is regular or irregular, at each vertex of the polygon sum of an interior angle and exterior angle is 180. Example 1: Fill in the blank. The name of the three sided regular polygon is _____. A regular polygon is a polygon whose all _____ are equal and all angles are equal. The sum of the exterior angles of a polygon is _____. A polygon is a simple closed figure formed by only _____. Solution: equilateral triangle sides 360 line segments Example 2: Write the number of sides for a given polygon. Nonagon Triangle Pentagon Decagon Solution: Example 3: Find the measure of each exterior angle of a regular polygon of 20 sides. Solution: The polygon has 20 sides. So, n = 20. Sum of the exterior angles of polygons = 360 So, each exterior angle = 360n = 36020 = 18 Example 4: The sum of the interior angles of a polygon is 1620. How many sides does it have? Solution: Sum of the interior angles of a polygon with n sides = (n 2) 180 1620 = (n 2) 180 n 2 = 1620180 n 2 = 9 n = 9 + 2 n = 11 So, the given polygon has 11 sides. Attend this Quiz & Test your knowledge.Correct answer is: 900Heptagon has 7 sides. So, n = 7, Sum of the angles of a polygon = (n 2) 180 = (7 2) 180 = 5 180 = 900Correct answer is: 360The sum of exterior angles of a polygon will always be equal to 360 degrees, irrespective of the number of sides it has.Correct answer is: Concave polygonQuadrilateral has 4 sides. So, n = 4 Sum of the angles of a polygon = (n 2) 180 = (4 2) 180 = 2 180 = 360 55 + 55 + 55 + fourth angle = 360 Measure of fourth angle = 360 - 165 = 195 So, the given quadrilateral is concave polygon as it has at least one interior angle greater than 180.Correct answer is: RhombusWhich of the following is not a regular polygon? What is the diagonal of a polygon? A diagonal of a polygon is a line segment connecting two non-consecutive vertices (corners). What are the properties of regular polygons? A Regular polygon has all sides of equal length and each angle also measures equal. Polygon is a closed shape made up of straight-line segments. The circle is a closed figure but it is made of a curve. So, a circle is not a polygon. What is the minimum number of sides a polygon must-have? A polygon must have a minimum of three sides. Can a number of angles and the number of sides for a polygon be different? No, polygons have the same number of sides and angles because they are closed figures with non-intersecting lines. Share copy and redistribute the material in any medium or format for any purpose, even commercially. Adapt remix, transform, and build upon the material for any purpose, even commercially. The licensor cannot revoke these freedoms as long as you follow the license terms. Attribution You must give appropriate credit , provide a link to the license, and indicate if changes were made . You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. ShareAlike If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original. No additional restrictions You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits. You do not have to comply with the license for elements of the material in the public domain or where your use is permitted by an applicable exception or limitation . No warranties are given. The license may not give you all of the permissions necessary for your intended use. For example, other rights such as publicity, privacy, or moral rights may limit how you use the material. There are many different types of polygons. To explore them all along with their properties can be a course in itself. Basically, a polygon is a closed plane figure made of three or more sides. Number of sidesName of polygon 3triangle 4quadrilateral 5pentagon 6hexagon 7heptagon 8octagon 9nonagon 10decagon 12dodecagonA triangle has the following basic properties:3 sides and 3 verticesNo diagonalSum of the interior angles is 180 degreesQuadrilateralA quadrilateral has the following basic properties:Four sides and four verticesTwo diagonalsSum of the interior angles is 360 degreesPentagonA pentagon has the following basic properties:Five sides and five verticesFive diagonalsSum of the interior angles is 540 degreesHexagonA hexagon has the following basic properties:Six sides and six verticesNine diagonalsSum of the interior angles is 720 degreesHeptagonA heptagon has the following basic properties:Seven sides and seven verticesFourteen diagonalsSum of the interior angles is 900 degreesOctagonAn octagon has the following basic properties:Eight sides and eight verticesTwenty diagonalsSum of the interior angles is 1080 degreesNonagonA nonagon has the following basic properties:Nine sides and nine verticesTwenty-seven diagonalsSum of the interior angles is 1260 degreesDecagonA decagon has the following basic properties:Ten sides and ten verticesThirty-five diagonalsSum of the interior angles is 1440 degreesDodecagonA dodecagon has the following basic properties:Twelve sides and twelve verticesFifty-four diagonalsSum of the interior angles is 1800 degreesTypes of Polygons Based on their Sides and AnglesIf we classify polygons based on their sides and angles, then the polygons are either regular polygons or irregular polygons.Regular PolygonsIf a polygon is a regular polygon, all sides are the same and all interior angles are the same. See below some examples of regular polygons. Starting from left to right and from top to bottom, the regular polygons shown below are the triangle, the square, the regular pentagon, the regular hexagon, the regular heptagon, the regular octagon, the regular nonagon, and the regular decagon. A square is a regular polygon because the sides are equal and each of the four interior angles is equal to 90 degrees.Irregular PolygonsIf a polygon is an irregular polygon, the sides are not the same and the interior angles are not the same. See below some examples of irregular polygons.For example, a rectangle is an irregular polygon because only opposite sides are equal although each of the four interior angles is equal to 90 degrees.Types of Polygons Based on their AnglesPolygons can be classified based on the size of the interior angle made by adjacent sides.If there is an interior angle that is bigger than 180 degrees, the polygon is a concave polygon.If no interior angle is bigger than 180 degrees, the polygon is a convex polygon.See the lessons about convex polygonsand concave polygons to learn more.If you can build a polygon so that all interior angles are equal, then the polygon is an equiangular polygon. Notice that the sides of the polygons may not be the same. A rectangle is an equiangular polygon.A triangle can be further classified into many different types such as scalene triangle, equilateral triangle, isosceles triangle, etc...See the lesson about types of triangles to learn moreA quadrilateral can be further classified into many different types such as rectangle, parallelogram, rhombus, trapezoid, etc...See the lesson about types of quadrilaterals to learn morePolygons are all around. Take a close look around you in your house, at the work place, or in an amusement park, you will find many real life examples of polygons. Types trianglesTypes of quadrilateralsIn this lesson, we will learn PolygonA polygon is a closed shape that has three or more sides. Each side is a line segment. The line segments form the sides of the polygon. The sides meet at vertices (corners) and no curves or gaps are allowed.The following are examples of polygons: The following figures are not polygons:Types of PolygonsSimple Polygons or Complex PolygonsThe sides of a simple polygon do not intersect. In a simple polygon,the line segments meet in pairs to form the vertices. Usually the word "simple" is omitted and theword "polygon" is used to mean "simple polygon".A complex polygon has intersecting sides.Convex Polygons or Concave PolygonsA convex polygon has all angles less than 180.A concave polygon has at least one angle greater than 180.(memory tool: concave has a "cave" in it)Equilateral PolygonAn equilateral polygon is a polygon which has all sides of thesame length. A rhombus is an example of an equilateral polygon.Equiangular PolygonAn equiangular polygon is a polygon whose interior angles are equal.A rectangle is an example of an equiangular polygon.Regular Polygons or Irregular PolygonsA regular polygon is a polygon with equal sides and equal anglesotherwise it is an irregular polygon. A regular polygon isboth equilateral and equiangular. Names of PolygonsSome polygons have special names, depending on the number of sides they have.The following table gives the names and properties of polygons with different number of sides. Scrolldown the page for more examples and solutions.For polygons with more sides, it is easier and quite common to use a number to indicate the numberof sides. For eg. 15-gon or 23-gon.WorksheetsPractice your skills with the following geometry worksheets:Printable & Online Geometry WorksheetsPractice the names of polygons with the following worksheets:Number of Sides In Polygons - Give thenumber of sides.Names of Polygons - Givethe names of polygons.How to define a polygon?How to distinguish between concave and convex polygons?How to name polygons?Show Video Lesson What is the difference between a regular and irregular polygons?The following video explains what are polygons, defines regular and irregular polygons and their features.Show Video LessonInterior Angles in Convex PolygonsThe following video will show you the different types of polygons based on their sides and angles measures.Show Video LessonExamples of classifying polygonsConvex Hexagon, Concave Octagon, Convex Equilateral Nonagon.Show Video LessonSummary:Polygons are closed, 2D shapes made of straight sides.They are classified by the number of sides they have.Regular polygons have equal sides and equal angles.Convex polygons have all interior angles less than 180 degrees, while concave polygons have at least one angle greater than 180 degrees.There are formulas to calculate the sum of interior angles and the measure of individual angles in regular polygons. Try out our new and fun Fraction Concoction Game.Add and subtract fractions to make exciting fraction concoctions following a recipe.There are four levels of difficulty: Easy, medium, hard and insane. Practice the basicsof fraction addition and subtraction or challenge yourself with the insane level. We welcome your feedback, comments and questions about this site or page. Please submit your feedback or enquiries via our Feedback page. Before we start learning about types of polygon, let us first learn the definition of a polygon. A polygon is a closed shape figure that has a minimum of three sides and three vertices. The term poly means many and gon means angle. Thus, polygons have many angles. The perimeter and area of polygon depend upon its types.The classification of polygons is described based on the numbers of sides and vertices. For example, a polygon as four sides and four angles, then it is quadrilateral. The polygons up to 12 sides are the important ones. We are going to learn here polygons types based on the number of sides of the closed figure along with examples and diagrams.Also, read:PolygonPerimeter Of PolygonsExterior Angles Of PolygonPolygon FormulaAll the polygon from triangle to decagon are given here in the below figures, respectively.These are the basic types of regular polygons which we see in our daily life. Also, these polygons have certain properties based on their area, perimeter, diagonals, etc.Classification of Polygons and their PropertiesA two-dimensional shape which is enclosed by a finite number of straight lines joining in the form of a closed-loop is called a polygon. The line segments which make the polygon are known as polygons sides or edges. Whereas the corner or the point where any two sides join is called the vertex of the polygon. Now, based on the number of sides and angles, polygons are classified into different types, which we are going to discuss here.Polygons are classified into various types based on the number of sides and measures of the angles. They are:Regular PolygonsIrregular PolygonsConcave PolygonsConvex PolygonsTrigonsQuadrilateral PolygonsPentagon PolygonsHexagon PolygonsEquilateral PolygonsEquiangular PolygonsLet us discuss them one by one.Regular PolygonIn a regular polygon, all the sides of the polygon are equal, and all the interior angles are the same. For example, a regular hexagon has six equal sides, and all its interior angles measure to 120 degrees. Few more examples are mentioned below.Examples:A square has all its sides equal to 5cm, and all the angles are at 90.An equilateral triangle has all three sides equal to 10cm and angles measure to 60.A regular pentagon has 5 equal sides and all the interior angles measures to 108 degrees.Irregular PolygonA polygon with an irregular shape. It means the sides and angles of the polygon are not equal.Example: A quadrilateral with unequal sides.An isosceles triangle has only two of its sides equal, and the third side has a different measurement.Convex PolygonIn a convex polygon, the measure of the interior angle is less than 180 degrees. It is exactly opposite to the concave polygon. The vertices of a convex polygon are always outwards.Example: See the figure of an irregular hexagon, whose vertices are outwards.Concave PolygonIn a concave polygon, at least one angle measures more than 180 degrees. The vertices of a concave polygon are inwards as well as outwards.TrigonsTrigons are polygons who have three sides. They are nothing but triangles. These trigons or triangles are further classified into different categories, such as:Scalene Triangle: All sides are unequalIsosceles Triangle: Two sides are equalEquilateral Triangle: All the three sides are equal and all angles measures to 60 degrees.Quadrilateral PolygonQuadrilateral polygon is also called a four-sided polygon or a quadrangle. The different types of the quadrilateral polygon are square, rectangle, rhombus and parallelogram.Pentagon PolygonThe five-sided polygon is called pentagon polygon. When all the five sides of the polygon are equal in length, then it is called regular pentagon otherwise irregular pentagon.HexagonsAnother type of polygon is the hexagon which has 6 sides and 6 vertices. A regular hexagon will have equal 6 sides and all its interior and exterior angles also measure equals.Equilateral PolygonsThe polygons whose all the sides are equal are called equilateral polygons, for example, an equilateral triangle, a square, etc.Equiangular PolygonsThe polygons whose all the interior angles are equal such as a rectangle are called equiangular polygons.Types of Polygon With Sides 3 to 20Now let us discuss, types of regular polygon according to the number of sides and measurement of angles.Name of the PolygonsSidesVerticesAngleTriangle (also called Trigon)3360Quadrilateral (also called Tetragon)4490Pentagon55108Hexagon66120Heptagon77128.571Octagon88135Nonagon (also called Enneagon)99140Decagon1010144Hendecagon1111147.27Dodecagon1212150Tridecagon or triskaidecagon1313152.3Tetradecagon or tetrakaidecago1414154.28Pendedecagon1515156Hexdecagon1616157.5Heptdecagon1717158.82Octdecagon1818160Enneadecagon1919161.05Icosagon2020162n-gonnn(n-2) 180 / n Put your understanding of this concept to test by answering a few MCQs. Click Start Quiz to begin! Select the correct answer and click on the Finish buttonCheck your score and answers at the end of the quiz Visit BYJUS for all Maths related queries and study materials 0 out of 0 arewrong 0 out of 0 are correct 0 out of 0 are Unattempted View Quiz Answers and Analysis English, more than just a language, is a powerful tool for effective communication. Proficiency in English enables you to convey your thoughts clearly and persuasively. Beyond communication, English opens doors to fields like literature, where a deep understanding of grammar and vocabulary is essential. This article will explore the concept of run-on sentences in English, providing definitions, examples, and guidance on how to correct them.What are Run-On Sentences?A run-on sentence occurs when two complete sentences are joined together without proper punctuation or a coordinating conjunction. These sentences are independent and can stand alone.Types of Run-On SentencesFused Sentence: Two independent clauses are joined without any punctuation.Example: I went to the store I bought some milk.Comma Splice: Two independent clauses are joined with only a comma.Example: I like pizza, I also like pasta.Examples of Run-on Sentenceslets have a look at some examples of run-on sentences, make sure you try to find the type:I went to the store I bought some milk.I like pizza, I also like pasta.The movie was amazing, I want to see it again.I love to read books, my favorite genre is fantasy.The weather is beautiful, lets go for a walk.Im hungry, lets order pizza.I finished my homework, now I can watch TV.I like dogs, my friend has a cat.The concert was loud, I had to cover my ears.Im going to the beach, Ill bring a towel.Correcting Run-On SentencesTo correct a run-on sentence, you can use one of the following methods:Period: Separate the two clauses into separate sentences.Example: I went to the store. I bought some milk.Comma and Coordinating Conjunction: Join the two clauses with a comma and a coordinating conjunction (and, but, or, nor, for, yet, so).Example: I like pizza, but I also like pasta.Semicolon: Join the two clauses with a semicolon.Example: I went to the store; I bought some milk.Subordinating Conjunction: Turn one of the clauses into a dependent clause using a subordinating conjunction (because, although, if, when, etc.).Example: Because I was hungry, I went to the store.Why to avoid Run-on Sentences UsageWe generally avoid using run-on sentences in English because they can make our writing unclear and difficult to understand.Run-on sentences combine two or more independent clauses without proper punctuation or a coordinating conjunction. This can create confusion for readers, as they may struggle to determine where one thought ends and another begins.Here are some reasons why we avoid run-on sentences:Clarity: Run-on sentences can make it difficult to follow the flow of ideas. By separating independent clauses with appropriate punctuation or conjunctions, we improve clarity and make our writing easier to understand.Conciseness: While run-on sentences may seem efficient, they can often be overly long and wordy. Breaking them down into shorter, more concise sentences can improve readability and clarity.Professionalism: In academic, business, and formal writing, run-on sentences are generally considered grammatically incorrect and can detract from the overall professionalism of the piece.However, there are a few rare and stylistic cases where a run-on sentence might be used intentionally:Poetic or Creative Writing: In certain poetic or creative writing styles, run-on sentences can be used to create a sense of urgency, excitement, or a continuous flow of thought. This is often seen in stream-of-consciousness writing or experimental poetry.Dialogue: In dialogue, especially when characters are speaking quickly or emotionally, run-on sentences can be used to mimic natural speech patterns. However, this should be done sparingly and with careful consideration.Its important to note that these are exceptions rather than the rule. In most cases, its best to use clear and concise sentences to ensure your writing is easy to understand.Additional TipsReview your writing: Regularly check your writing for run-on sentences.Practice: The more you practice identifying and correcting run-on sentences, the better you will become.Use a grammar checker: Online tools can help you identify potential errors.By understanding and avoiding run-on sentences, you can improve the clarity and effectiveness of your writing.Quick LinksExamples of Funny SentencesOne stop for learning fun!Games, activities, lessons - it's all here!Explore AllEnglish, a versatile language, can be used in various contexts. Understanding its grammar is essential for effective communication. This article will explore nouns, their types, and examples to enhance your understanding.What are Nouns?Nouns are words used to name people, places, things, ideas, or qualities. They form the foundation of sentences and can play different roles within them.Types of NounsNouns can be classified into various categories based on their characteristics and usage. Heres a detailed explanation of some common types:1. Proper Nouns:Definition: Refer to specific people, places, or things.Examples: John, London, the Eiffel Tower, Mount Everest, the Amazon River, the United States.Characteristics: Begin with a capital letter, are unique and specific.2. Common Nouns:Definition: Refer to general categories of people, places, things, or ideas.Examples: boy, girl, city, country, book, car, table, happiness, love.Characteristics: Do not begin with a capital letter unless they are at the beginning of a sentence.3. Countable Nouns:Definition: Nouns that can be counted.Examples: apple, book, car, house, dog, cat, pencil, dollar.Characteristics: Can be used with numbers (e.g., two apples), plural forms (e.g., books), and determiners like a, an, and the.4. Uncountable Nouns:Definition: Nouns that cannot be counted.Examples: water, sugar, air, happiness, love, information, music.Characteristics: Cannot be used with numbers or plural forms. Often used with quantifiers like some, much, and little.5. Concrete Nouns:Definition: Nouns that refer to tangible things that can be touched or seen.Examples: table, chair, book, dog, car, apple, stone.Characteristics: Can be perceived through the senses.6. Abstract Nouns:Definition: Nouns that refer to intangible ideas, qualities, or concepts.Examples: love, happiness, freedom, intelligence, beauty, courage.Characteristics: Cannot be touched or seen directly.7. Collective Nouns:Definition: Nouns that refer to a group of people or things.Examples: team, family, crowd, army, class, herd.Characteristics: Can be singular or plural, depending on the context.8. Compound Nouns:Definition: Nouns formed by combining two or more words.Examples: toothbrush, bedroom, girlfriend, bookshop, mailbox.Characteristics: Can be written as one word, two separate words, or with a hyphen.Understanding these different types of nouns can help you use them effectively in your writing and communication.Common Uses of NounsNouns are essential building blocks of sentences, used to name people, places, things, ideas, or qualities. They can play various roles within a sentence:Subject: The subject is the main focus of the sentence. It is the person, place, thing, or idea that the sentence is about.Example: The dog barked. (The dog is the subject of the sentence.)Object: The object receives the action of the verb. It can be a direct object or an indirect object.Example: I bought a book. (Book is the direct object.)Example: She gave me a gift. (Me is the indirect object.)Complement: A complement completes the meaning of the verb. There are two types of complements: subject complements and object complements.Subject Complement: Describes the subject.Example: She is a teacher. (Teacher describes the subject she.)Object Complement: Describes the direct object.Example: They named the baby Sarah. (Sarah describes the direct object baby.)Appositive: An appositive is a noun or noun phrase that renames another noun. It provides additional information about the noun.Example: My friend, John, is coming. (John is an appositive that renames the noun friend.)Adjective: A noun can sometimes function as an adjective to modify another noun.Example: The city is beautiful. (City modifies the noun beautiful.)Prepositional Object: A noun can follow a preposition to form a prepositional phrase.Example: I went to the store. (Store is the object of the preposition to.)By understanding these common uses of nouns, you can effectively use them in your writing and communication.Rules for Using NounsCapitalization: Proper nouns (specific names) begin with a capital letter:Number Agreement: The verb must agree with the number of the subject noun:Example: The book is on the table. (singular)Example: The books are on the table. (plural)Countable vs. Uncountable: Use appropriate quantifiers with countable and uncountable nouns:Example: I have two books. (countable)Example: I have some sugar. (uncountable)Collective Nouns: Treat collective nouns as singular unless referring to individual members:Example: The team is winning. (singular)Example: The team members are celebrating. (plural)Noun Phrases: Nouns can be part of noun phrases, which consist of a noun and modifiers:Example: The big red apple is delicious.Exceptions to Noun RulesPlural Nouns: Some nouns have irregular plural forms, such as:Man menChild childrenFoot feetTooth teethMouse miceCountable and Uncountable Nouns: Some nouns can be both countable and uncountable depending on the context:Coffee (countable: three coffees) (uncountable: a cup of coffee)Hair (countable: a few hairs) (uncountable: long hair)Experience (countable: a bad experience) (uncountable: life experience)By understanding these exceptions and rules, you can use nouns effectively in your writing and communication.Why We Use Nouns?Nouns are essential for expressing ideas and conveying information. They provide the foundation for sentences and help to create a clear and coherent message. Here are some reasons why nouns are so important:Clarity: Nouns help to identify specific people, places, things, or ideas.Structure: Nouns are often the core of a sentence, providing a framework for the rest of the sentence.Meaning: Nouns convey the meaning of a sentence by naming the subjects, objects, and other elements.Communication: Nouns are essential for effective communication, as they allow us to express our thoughts and ideas clearly.ConclusionNouns are essential building blocks of English sentences. By understanding their types and functions, you can improve your writing and communication skills.Quick LinksA well-crafted Diversity and Inclusion (D&I) statement is more than just a piece of text; its a reflection of your organizations values, culture, and commitment to creating a welcoming and equitable environment. Its a statement that resonates with your employees, customers, and stakeholders, demonstrating your genuine dedication to diversity and inclusion.Key Elements of a Strong D&I StatementClear and Concise Language: Avoid jargon or overly complex language. The statement should be easily understandable to everyone.Authenticity: The statement should reflect your organizations genuine values and beliefs. Avoid using clichs or generic phrases.Commitment: Clearly state your organizations commitment to diversity and inclusion. This includes a commitment to providing equal opportunities for all employees and customers.Action-Oriented: The statement should outline specific actions or initiatives that your organization is taking to promote diversity and inclusion.Inclusivity: Ensure that the statement is inclusive of all individuals, regardless of their race, gender, sexual orientation, religion, disability, or other characteristics.While implementing D&I initiatives may face challenges, such as resistance to change or unconscious biases, the benefits far outweigh the costs.Example of Diversity and Inclusion StatementsHere are a few examples of strong D&I statements:Example 1: We believe that diversity is a strength, and we are committed to creating a workplace where everyone feels valued, respected, and included. We strive to foster a culture of innovation, collaboration, and equity.Example 2: Our organization is dedicated to building a diverse and inclusive community where everyone can thrive. We recognize the importance of diversity in all its forms and are committed to creating a workplace that is free from discrimination and harassment.Example 3: We believe that everyone deserves to be treated with dignity and respect. We are committed to creating a workplace where diversity is celebrated and everyone has the opportunity to reach their full potential.Example 4: Our organization is committed to fostering a workplace where everyone feels valued, respected, and included. We believe that diversity is a strength, and we strive to create a culture of inclusivity, equity, and belonging.Example 5: We recognize the fundamental value and dignity of all individuals, regardless of their race, gender, sexual orientation, religion, disability, or other characteristics. We are dedicated to creating, preserving, and upholding an environment that respects diverse traditions, heritages, and experiences.Tailoring the Statement to Your OrganizationTo create a D&I statement that is truly effective, its important to tailor it to your organizations specific values and goals. Consider the following questions:What are your organizations core values?What are your organizations diversity and inclusion goals?What specific actions is your organization taking to promote diversity and inclusion?By answering these questions, you can create a D&I statement that is both meaningful and impactful.Would you like to brainstorm some ideas based on your organizations specific values and goals?A strong Diversity and Inclusion (D&I) statement is essential for organizations seeking to create a positive and inclusive workplace. By demonstrating a commitment to diversity and inclusion, organizations can improve employee morale, attract top talent, and enhance innovation.Creating Your Own Diversity and Inclusion StatementInvolve stakeholders: Encourage employees, customers, and other stakeholders to participate in the creation process.Align with organizational values: Ensure that the statement aligns with your organizations core values and mission.Be specific: Outline specific actions or initiatives that your organization is taking to promote D&I.Measure progress: Establish metrics to track and measure your organizations progress in achieving D&I goals.Review and update: Regularly review and update your D&I statement to reflect changes in your organization or industry.Additional ConsiderationsAccessibility: Ensure that your workplace is accessible to individuals with disabilities.Cultural competency: Promote cultural competency and understanding among employees.Bias training: Provide employees with training to address unconscious biases.Employee resource groups: Support employee resource groups that represent diverse populations.By following these guidelines and tailoring the statement to your organizations specific needs, you can create a powerful and effective D&I statement that will help you build a more inclusive and equitable workplace.In geometry, a polygon is a plane figure bounded by a finite sequence of line segments, a two-dimensional polytope.The line segments that make up the polygon are called sides; their intersections are called vertices.In geometry a polygon (Template:Pron-en or Template:IPAlink-en) is traditionally a plane figure that is bounded by a closed path or circuit, composed of a finite sequence of straight line segments (i.e., by a closed polygonal chain). These segments are called its edges or sides, and the points where two edges meet are the polygon's vertices or corners. The interior of the polygon is sometimes called its body. A polygon is a 2-dimensional example of the more general polytope in any number of dimensions.The word "polygon" derives from the Greek ("many") and (gnia), meaning "knee" or "angle". Today a polygon is more usually understood in terms of sides.Usually two edges meeting at a corner are required to form an angle that is not straight (180); otherwise, the line segments will be considered parts of a single edge.The basic geometrical notion has been adapted in various ways to suit particular purposes. For example in the computer graphics (image generation) field, the term polygon has taken on a slightly altered meaning, more related to the way the shape is stored and manipulated within the computer. Classification[]Number of sides[]Polygons are primarily classified by the number of sides, see naming polygons below.Convexity[]Polygons may be characterised by their degree of convexity:Convex: any line drawn through the polygon (and not tangent to an edge or corner) meets its boundary exactly twice.Non-convex: a line may be found which meets its boundary more than twice.Simple: the boundary of the polygon does not cross itself. All convex polygons are simple.Concave: Non-convex and simple.Star-shaped: the whole interior is visible from a single point, without crossing any edge. The polygon must be simple, and may be convex or concave.Self-intersecting: the boundary of the polygon crosses itself. Branko Grnbaum calls these coptic, though this term does not seem to be widely used. The term complex is sometimes used in contrast to simple, but this risks confusion with the idea of a complex polygon as one which exists in the complex Hilbert plane consisting of two complex dimensions.Star polygon: a polygon which self-intersects in a regular way.Symmetry[]Equiangular: all its corner angles are equal.Cyclic: all corners lie on a single circle.Isogonal or vertex-transitive: all corners lie within the same symmetry orbit. The polygon is also cyclic and equiangular.Equilateral: all edges are of the same length. (A polygon with 5 or more sides can be equilateral without being convex.) (Williams 1979, pp. 31-32)Isotoxal or edge-transitive: all sides lie within the same symmetry orbit. The polygon is also equilateral.Regular. A polygon is regular if it is both cyclic and equilateral. A non-convex regular polygon is called a regular star polygon.Miscellaneous[]Rectilinear: a polygon whose sides meet at right angles, i.e., all its interior angles are 90 or 270 degrees.Monotone with respect to a given line L, if every line orthogonal to L intersects the polygon not more than twice.Properties[]We will assume Euclidean geometry throughout.Angles[]Any polygon, regular or irregular, self-intersecting or simple, has as many corners as it has sides.Each corner has several angles. The two most important ones are:Interior angle - The sum of the interior angles of a simple n {\displaystyle n} -gon is (n 2) {\displaystyle (n-2)\pi} radians or 180 (n 2) {\displaystyle 180(n-2)} degrees. This is because any simple n {\displaystyle n} -gon can be considered to be made up of n 2 {\displaystyle n-2} triangles, each of which has an angle sum of {\displaystyle \pi } radians or 180 degrees. The measure of any interior angle of a convex regular n {\displaystyle n} -gon is (1 2 n) {\displaystyle \left(1-\frac{2}{n}\right)\pi} radians or 180 (1 2 n) {\displaystyle 180\left(1-\frac2n\right)} degrees. The interior angles of regular star polygons were first studied by Poinsot, in the same paper in which he describes the four regular star polyhedra.Exterior angle - Imagine walking around a simple n {\displaystyle n} -gon marked on the floor. The amount you "turn" at a corner is the exterior or external angle. Walking all the way round the polygon, you make one full turn, so the sum of the exterior angles must be 360. Moving around an n-gon in general, the sum of the exterior angles (the total amount one "turns" at the vertices) can be any integer multiple d {\displaystyle d} of 360, e.g. 720 for a pentagram and 0 for an angular "eight", where d {\displaystyle d} is the density or starriness of the polygon. See also orbit (dynamics).The exterior angle is the supplementary angle to the interior angle. From this the sum of the interior angles can be easily confirmed, even if some interior angles are more than 180: going clockwise around, it means that one sometime turns left instead of right, which is counted as turning a negative amount. (Thus we consider something like the winding number of the orientation of the sides, where at every vertex the contribution is between and winding.)Area and centroid[]The area of a polygon is the measurement of the 2-dimensional region enclosed by the polygon. For a non-self-intersecting (simple) polygon with n {\displaystyle n} vertices, the area and centroid are given by:[1] A = 1 2 i = 0 n 1 (x i y i + 1 x i + 1 y i) C x = 1 6 A i = 0 n 1 (x i + x i + 1) (x i y i + 1 x i + 1 y i) C y = 1 6 A i = 0 n 1 (y i + y i + 1) (x i y i + 1 x i + 1 y i) {\displaystyle \begin{align}A&=\frac12\sum_{i=0}^{n-1}(x_iy_{i+1}-x_{i+1}y_i)\\C_x&=\frac{1}{6A}\sum_{i=0}^{n-1}(x_i+x_{i+1})(x_iy_{i+1}-x_{i+1}y_i)\\C_y&=\frac{1}{6A}\sum_{i=0}^{n-1}(y_i+y_{i+1})(x_iy_{i+1}-x_{i+1}y_i)\end{align}} To close the polygon, the first and last vertices are the same, i.e., x n , y n = x 0 , y 0 {\displaystyle x_n,y_n=x_0,y_0} . The vertices must be ordered clockwise or counterclockwise; if they are ordered clockwise, the area will be negative but correct in absolute value. This is commonly called the Surveyor's Formula.[citation needed]The formula was described by Meister[citation needed] in 1769 and by Gauss in 1795. It can be verified by dividing the polygon into triangles, but it can also be seen as a special case of Green's theorem.The area A of a simple polygon can also be computed if the lengths of the sides, a1,a2, ..., an and the exterior angles, 1 , 2 , , n {\displaystyle \theta_1, \theta_2,\dots,\theta_n} are known. The formula is A = 1 2 (a 1 [a 2 sin (1) + a 3 sin (1 + 2) + + a n 1 sin (1 + 2 + + n 2)] + a 2 [a 3 sin (2) + a 4 sin (2 + 3) + + a n 1 sin (2 + + n 2)] + + a n 2 [a n 1 sin

vertices pointing outwards, whereas a concave polygon has at least one of its vertices pointing inwards.What Types of Polygons are Square and Rectangle?Square and rectangle are simple, convex polygons, and quadrilaterals as their boundaries do not intersect each other, their interior angles are lesser than180 and theyhave four sides respectively. The square is a regular polygon while the rectangle is an irregular polygon.Which Type of Polygon has Seven Sides?The type of polygon that has seven sides is referred to as Heptagon. It is made of two words, "Hepta" which means seven, and "gon" which means angles thereby meaning that it is a seven-sided shape having seven angles.Is Equilateral Triangle a Convex Type of Polygon?Yes, an equilateral triangle is a convex type of polygon as interior angles of an equilateral triangle are always 60 which is lesser than180. The value of the interior angle of the equilateral triangle always remains 60 and never increases thereby proving it to be a convex polygon.What Type of Polygon is a Trapezoid?A trapezoid is a simple, convex polygon and a quadrilateral as it has only one boundary, with interior angles lesser than180 and has four sides respectively. It is also an irregular polygon as the length of all its sides and angles do not measure the same. A polygon is a flat 2-dimensional (2D) shape made of straight lines. The sides connect to form a closed shape. There are no gaps or curves. Polygon(straight sides)Not a Polygon(has a curve)Not a Polygon(open, not closed) Polygon comes from Greek. Poly- means "many" and -gon means "angle". A stop sign is an example of a regular polygon. It has eight equal sides and angles, making it a regular octagon. Can you think of more polygons in real life? Types of Polygons Regular or Irregular A regular polygon has all angles equal and all sides equal. Otherwise it is irregular Regular Irregular A convex polygon has no inward-pointing angles: internal angles are at most 180. If any internal angle is greater than 180 then the polygon is concave. (Think: concave has a "cave" in it) Convex Concave A simple polygon has a single, unbroken boundary, and it doesn't cross over itself. A complex polygon has sides that intersect, making many polygon rules invalid. Simple Polygon(this one's a Pentagon) Complex Polygon(also a Pentagon) Irregular Hexagon Concave Octagon Complex Polygon(a "star polygon",in this case a pentagram) If it is a Regular Polygon... Name Sides Shape Interior Angle Triangle (or Trigon) 3 60 Quadrilateral (or Tetragon) 4 90 Pentagon 5 108 Hexagon 6 120 Heptagon (or Septagon) 7 128.571 Octagon 8 135 Nonagon (or Enneagon) 9 140 Decagon 10 144 Hendecagon (or Undecagon) 11 147.273 Dodecagon 12 150 Triskaidecagon 13 152.308 Tetrakaidecagon 14 154.286 Pentadecagon 15 156 Hexakaidecagon 16 157.5 Heptadecagon 17 158.824 Octakaidecagon 18 160 Enneadecagon 19 161.053 Icosagon 20 162 Triacontagon 30 168 Tetracontagon 40 171 Pentacontagon 50 172.8 Hexacontagon 60 174 Heptacontagon 70 174.857 Octacontagon 80 175.5 Enneacontagon 90 176 Hectogon 100 176.4 Chiliagon 1,000 179.64 Myriagon 10,000 179.964 Megagon 1,000,000 ~180 Googolgon 10100 ~180 n-gon n (n2) 180 / n You can make names using this method: Sides Start with... 20 Icosi... 30 Triaconta... 40 Tetraconta... 50 Pentaconta... 60 Hexaconta... 70 Heptaconta... 80 Octaconta... 90 Enneaconta... 100 Hecto... etc.. Sides ...end with +1 ...henagon +2 ...digon +3 ...trigon +4 ...tetragon +5 ...pentagon +6 ...hexagon +7 ...heptagon +8 ...octagon +9 ...enneagon Example: a 62-sided polygon is a Hexacontadigon BUT, for polygons with 13 or more sides, it is OK (and easier) to write "13-gon", "14-gon" ... "100-gon", etc. Remembering Quadrilateral (4 Sides) A Quad Bike has 4 wheels Pentagon (5 Sides) The "Pentagon" in Washington DC has 5 sides Hexagon (6 Sides) Honeycomb has Hexagons Septagon (7 Sides) Think Septagon is a "Seven-agon" Octagon(8 Sides) An Octopus has 8 tentacles Nonagon (9 Sides) Think Nonagon is a "Nine-agon" Decagon (10 Sides) Think Decagon has 10 sides,just like our Decimal system has 10 digits 629, 630, 633, 634, 2125, 2126, 3255, 3256, 2127, 3257 Copyright 2025 Rod Pierce Check out the following Math Topics, Worksheets, Lessons and more. For parents, teachers and educators, there are loads of materials here for teaching and learning online.Find interesting and fun stuff to help your kids, students and children to enjoy, appreciate and learnnumbers, counting, arithmetic, fractions, computation, geometry, statistics, set theory, trigonometry andeven algebra and matrices! Check out our Interactive Zone for dynamic online worksheets, exercises and other simulations.You can also use our free calculators and math tools to check your answers formany types of math problems: Basic Math, Pre-Algebra, Algebra, Trigonometry, Precalculus, Calculus,Statistics, Graphing and Matrices.Become a fan at our FaceBook page to follow ourupdates or to give us your feedback and comments. Do let us know how we can continue to improve ourwebsite.Math According To GradesAre you looking for free math help that is suitable for a particular grade? Here, we have thousands offree math videos that are categorized according to grades. 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We also have math worksheets according to grades from Grade 1 toGrade 8. Also, visit our Interactive Zone if you wantto define your own parameters for the worksheets.Test/Exam PreparationAre you preparing for the SAT, ACT, GMAT or GRE test? Check out our pages here for math help anduseful tips for SAT, ACT, GMAT, and GRE. There are also resources for GCSE/IGCSE and A-Level. Worked solutions are available for the latest past year papers and practice test questions.Test Preparation If there are any other topics that you will like us to add, feel free to contact us via ourFacebook page or Feedback page.Common Core StandardsAre you looking for lessons, worksheets and games that are suitable for the Common Core Math Standards?We have lots of free resources to help parents, teachers and students. Engage NY Common Core StandardsAre your students or children learning the Engage NY Common Core Math? We have lesson plans, worksheets(from the NYSED) and videos to help you prepare to teach Common Core Math in the classroom or at home.Mid-module and End-Module Assessments are also included. Math In Video LessonsDo you need to systematically go through a series of math lessons? You can now have a private tutorfor free. These math videos are presented by experienced teachers who will guide you step-by-stepthrough the math concepts.We have also included videos for many topics. Some of the videos are hosted on YouTube and your networkmust allow access to YouTube in order to view the videos. Would you like to have some fun with Math? Have a look at our extensive collection of math fun stuff -math trivia, math games, math tricks, jokes, riddles, funny quotes, brain teasers, puzzles, mnemonicsand more.Go to the menu for Fun & Games.Math For Specific TestsAre you preparing for a particular standardized test or examination, but do not know what to study?Here, we have free math videos that will help to prepare you for the test (SAT, ACT, GMAT, GRE, Regents,California Standards, GCSE/IGCSE Maths or A-level Maths). The videos also include relevant Practice TestQuestions and Answers.Go to the menu for Math for Tests.ScienceIn addition to Math, we have also included topics like General Science, Biology, Chemistry and Physics.We have resources suitable for many different levels; from grades 1 to 12, High School, AP, College,Key Stage 3 and IGCSE. OthersWe also have English Grammar Lessons, resources for students who are learning English as a SecondLanguage and those who are preparing for the TOEFL or IELTS examinations. We have some video lessonsto teach the Java and Python Programming Language. For those who may need a private tutor, we can helpyou find a suitable tutor. Go to the menu for other topics Try out our new and fun Fraction Concoction Game.Add and subtract fractions to make exciting fraction concoctions following a recipe.There are four levels of difficulty: Easy, medium, hard and insane. Practice the basicsof fraction addition and subtraction or challenge yourself with the insane level. We welcome your feedback, comments and questions about this site or page. Please submit your feedback or enquiries via our Feedback page. A polygon is a closed geometric shape made of a finite number of straight line-segments joined end to end. In Greek, poly means many, and gon means angle. It should have a minimum of three sides but can have any maximum number of sides. A polygon is usually named based on the number of sides it contains. A polygon with n sides is called an n-gon. Given below is the list of common polygons: Polygon Shape As shown in the above image, the most basic types of polygons found in everyday life are: 1) triangle, 2) quadrilateral, 3) pentagon, 4) hexagon, 5) heptagon, 6) octagon, 7) nonagon, and 8) decagon. Given below is the list of the names of polygons with their basic properties: Types of Polygon a) Convex Polygon It is a polygon that has all its interior angles less than 180. All the diagonals of a convex polygon lie inside the closed figure. Triangles, all convex quadrilaterals, regular pentagon, and regular hexagon are common examples of a convex polygon. b) Concave Polygon Also known as a non-convex polygon, it is a polygon having at least one of its interior angles measuring more than 180. Some diagonals of a concave polygon lie outside the closed figure. A dart or an arrowhead in quadrilaterals, some irregular pentagon and hexagon are common examples of the concave polygon. a) Regular Polygon It is a polygon having all sides of equal length and all interior angles of equal measure. A regular polygon is thus both equilateral and equiangular. Triangle, quadrilateral, pentagon, and hexagon are common examples of the regular polygon. b) Irregular Polygon It is a polygon that has sides of unequal length and angles of unequal measure. Any polygon that is not regular is thus an irregular polygon. Scalene triangle, quadrilaterals such as a rectangle, trapezoid or a kite, irregular pentagon, and hexagons are common examples of the irregular polygon. Pentagon, the large five-sided building that serves as the headquarters of the U.S. Department of DefenseThe Pyramids of Egypt with five sidesThe Bermuda TriangleThe rectangle-shaped screen of our laptop, a television set, and mobile phonesThe tiles on which we walk in our homes and streetsThe wall of a building, the truss of a bridge Q1. Are all quadrilaterals polygons? Ans. Yes, all quadrilaterals are polygons. Since a quadrilateral has four sides, it is a four-sided polygon. Q2. Are all triangles polygons? Ans. Yes, all triangles, by definition, are polygons with three sides. Q3. Are circles polygons? Ans. No, circles are not polygons because they have no sides. Q4. Is a cube a polygon? Ans. No, a cube is not a polygon. Polygons are flat, two-dimensional, closed shapes with sides made of straight lines, whereas a cube is a three-dimensional solid figure. Q5. Is a star a polygon? Ans. Yes, a star is a polygon. In geometry, a star is a special type of non-convex polygon that is commonly also known as a star polygon. Q6. What are the names of polygons with right angles? Ans. Square, rectangle, and right trapezoid are three polygons that have right angles. Q7. Do all polygons have parallel sides? Ans. Every regular polygon with an even number of sides has pairs of parallel sides. Regular polygons have half as many parallel sides as the total number of sides. Q8. Is a heart a polygon? Ans. No, a heart is not a polygon because a heart is made of curved sides. A polygon, on the other hand, is made of straight-line segments. Q9. Can a polygon have curved sides? Ans. No, the sides of a polygon are made of straight-line segments. Thus any geometric shape that has curved sides is not a polygon. Q10. Is an oval a polygon? Ans. An oval is not a polygon because it has no straight sides. Q11. Can a polygon have more sides, or more angles? Ans. No, polygons have the same number of sides and angles because they are closed figures with non-intersecting lines. Last modified on June 8th, 2024 33%(3)33% found this document useful (3 votes)12K viewsThis document lists the names of polygons from 1 to infinite sides. It includes common names like triangle, quadrilateral, pentagon, and hexagon. It also includes less common names for polygSaveSave Sides Polygons For Later33%33% found this document useful, undefinedPlane figure bounded by line segmentsFor other uses, see Polygon (disambiguation).Some polygons of different kinds: open (excluding its boundary), boundary only (excluding interior), closed (including both boundary and interior), and self-intersecting.In geometry, a polygon (/pln/) is a plane figure made up of line segments connected to form a closed polygonal chain.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.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. 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.A polygon is a 2-dimensional example of the more general polytope in any number of dimensions. There are many more generalizations of polygons defined for different purposes.The word polygon derives from the Greek adjective (pols) 'much', 'many' and (gna) 'corner' or 'angle'. It has been suggested that (gnu) 'knee' may be the origin of gon.[1]Some different types of polygonPolygons are primarily classified by the number of sides.Polygons may be characterized by their convexity or type of non-convexity:Convex: any line drawn through the polygon (and not tangent to an edge or corner) meets its boundary exactly twice. As a consequence, all its interior angles are less than 180. Equivalently, any line segment with endpoints on the boundary passes through only interior points between its endpoints. This condition is true for polygons in any geometry, not just Euclidean.[2]Non-convex: a line may be found which meets its boundary more than twice. Equivalently, there exists a line segment between two boundary points that passes outside the polygon.Simple: the boundary of the polygon does not cross itself. All convex polygons are simple.Concave: Non-convex and simple. There is at least one interior angle greater than 180.Star-shaped: the whole interior is visible from at least one point, without crossing any edge. The polygon must be simple, and may be convex or concave. All convex polygons are star-shaped.Self-intersecting: the boundary of the polygon crosses itself. The term complex is sometimes used in contrast to simple, but this usage risks confusion with the idea of a complex polygon as one which exists in the complex Hilbert plane consisting of two complex dimensions.Star polygon: a polygon which self-intersects in a regular way. A polygon cannot be both a star and star-shaped.Equiangular: all corner angles are equal.Equilateral: all edges are of the same length.Regular: both equilateral and equiangular.Cyclic: all corners lie on a single circle, called the circumcircle.Tangential: all sides are tangent to an inscribed circle.Isogonal or vertex-transitive: all corners lie within the same symmetry orbit. The polygon is also cyclic and equiangular.Isotoxal or edge-transitive: all sides lie within the same symmetry orbit. The polygon is also equilateral and tangential.The property of regularity may be defined in other ways: a polygon is regular if and only if it is both isogonal and isotoxal, or equivalently it is both cyclic and equilateral. A non-convex regular polygon is called a regular star polygon.Rectilinear: the polygon's sides meet at right angles, i.e. all its interior angles are 90 or 270 degrees.Monotone with respect to a given line L: every line orthogonal to L intersects the polygon not more than twice.Partitioning an n-gon into n 2 trianglesEuclidean geometry is assumed throughout.Any polygon has as many corners as it has sides. Each corner has several angles. The two most important ones are:Interior angle The sum of the interior angles of a simple n-gon is (n 2) radians or (n 2) 180 degrees. This is because any simple n-gon (having n sides) can be considered to be made up of (n 2) triangles, each of which has an angle sum of radians or 180 degrees. The measure of any interior angle of a convex regular n-gon is (1 2 n) {\displaystyle \left(1-{\tfrac {2}{n}}\right)\pi } radians or 180 360 n {\displaystyle 180-{\tfrac {360}{n}}} degrees. The interior angles of regular star polygons were first studied by Poinsot, in the same paper in which he describes the four regular star polyhedra: for a regular p q {\displaystyle {\tfrac {p}{q}}} -gon (a p-gon with central density q), each interior angle is (p 2 q) p {\displaystyle {\tfrac {\pi (p-2q)}{p}}} radians or 180 (p 2 q) p {\displaystyle {\tfrac {180(p-2q)}{p}}} degrees.[3]Exterior angle The exterior angle is the supplementary angle to the interior angle. Tracing around a convex n-gon, the angle "turned" at a corner is the exterior or external angle. Tracing all the way around the polygon makes one full turn, so the sum of the exterior angles must be 360. This argument can be generalized to concave simple polygons, if external angles that turn in the opposite direction are subtracted from the total turned. Tracing around an n-gon in general, the sum of the exterior angles (the total amount one rotates at the vertices) can be any integer multiple d of 360, e.g. 720 for a pentagram and 0 for an angular "eight" or antiparallelogram, where d is the density or turning number of the polygon.Coordinates of a non-convex pentagonIn this section, the vertices of the polygon under consideration are taken to be (x 0 , y 0) , (x 1 , y 1) , , (x n 1 , y n 1) {\displaystyle (x_{0},y_{0}),(x_{1},y_{1}),\ldots ,(x_{n-1},y_{n-1})} in order. For convenience in some formulas, the notation (xn, yn) = (x0, y0) will also be used.Further information: Shoelace formulaIf the polygon is non-self-intersecting (that is, simple), the signed area is A = 1 2 i = 0 n 1 (x i y i + 1 x i + 1 y i) where x n = x 0 and y n = y 0 , {\displaystyle A={\frac {1}{2}}\sum _{i=0}^{n-1}(x_{i}y_{i+1}-x_{i+1}y_{i})\quad {\text{where }}x_{n}=x_{0}{\text{ and }}y_{n}=y_{0},} or, using determinants 16 A 2 = i = 0 n 1 | Q i , j Q i , j + 1 Q i + 1 , j Q i + 1 , j + 1 | , {\displaystyle 16A^{2}=\sum _{i=0}^{n-1}\sum _{j=0}^{n-1}{\begin{vmatrix}Q_{i,j}&Q_{i,j+1}\\Q_{i+1,j}&Q_{i+1,j+1}\end{vmatrix}},} where Q i , j {\displaystyle Q_{i,j}} is the squared distance between (x i , y i) {\displaystyle (x_{i},y_{i})} and (x j , y j) . {\displaystyle (x_{j},y_{j}).} [4][5]The signed area depends on the ordering of the vertices and of the orientation of the plane. Commonly, the positive orientation is defined by the (counterclockwise) rotation that maps the positive x-axis to the positive y-axis. If the vertices are ordered counterclockwise (that is, according to positive orientation), the signed area is positive; otherwise, it is negative. In either case, the area formula is correct in absolute value. This is commonly called the shoelace formula or surveyor's formula.[6]The area A of a simple polygon can also be computed if the lengths of the sides, a1, a2, ..., an and the exterior angles, 1, 2, ..., n are known, from: A = 1 2 (a 1 [a 2 sin (1) + a 3 sin (1 + 2) + + a n 1 sin (1 + 2 + + n 2)] + a 2 [a 3 sin (2) + a 4 sin (2 + 3) + + a n 1 sin (2 + + n 2)] + + a n 2 [a n 1 sin (n 2)]) . {\displaystyle {\begin{aligned}A={\frac {1}{2}}(a_{1}[a_{2}\sin(\theta _{1})+a_{3}\sin(\theta _{1}+\theta _{2})+\cdots +a_{n-1}\sin(\theta _{1}+\theta _{2}+\cdots +\theta _{n-2})]\\{}+a_{2}[a_{3}\sin(\theta _{2})+a_{4}\sin(\theta _{2}+\theta _{3})+\cdots +a_{n-1}\sin(\theta _{2}+\cdots +\theta _{n-2})]\\{}+\cdots +a_{n-2}[a_{n-1}\sin(\theta _{n-2})]).\end{aligned}}} The formula was described by Lopshits in 1963.[7]If the polygon can be drawn on an equally spaced grid such that all its vertices are grid points, Pick's theorem gives a simple formula for the polygon's area based on the numbers of interior and boundary grid points: the former number plus one-half the latter number, minus 1.In every polygon with perimeter p and area A , the isoperimetric inequality p 2 > 4 A {\displaystyle p^{2}>4\pi A} holds.[8]For any two simple polygons of equal area, the BolyaiGerwien theorem asserts that the first can be cut into polygonal pieces which can be reassembled to form the second polygon.The lengths of the sides of a polygon do not in general determine its area.[9] However, if the polygon is simple and cyclic then the sides do determine the area.[10] Of all n-gons with given side lengths, the one with the largest area is cyclic. Of all n-gons with a given perimeter, the one with the largest area is regular (and therefore cyclic).[11]Many specialized formulas apply to the areas of regular polygons.The area of a regular polygon is given in terms of the radius r of its inscribed circle and its perimeter p by A = 1 2 p r . {\displaystyle A={\frac {1}{2}}\cdot p\cdot r.} This radius is also termed its apothem and is often represented as a.The area of a regular n-gon can be expressed in terms of the radius R of its circumscribed circle (the unique circle passing through all vertices of the regular n-gon) as follows:[12][13] A = R 2 n 2 sin 2 n = R 2 n sin n cos n {\displaystyle A=R^{2}\cdot {\frac {n}{2}}\cdot \sin {\frac {2\pi }{n}}=R^{2}\cdot n\cdot \sin {\frac {\pi }{n}}\cdot \cos {\frac {\pi }{n}}} The area of a self-intersecting polygon can be defined in two different ways, giving different answers:Using the formulas for simple polygons, we allow that particular regions within the polygon may have their area multiplied by a factor which we call the density of the region. For example, the central convex pentagon in the center of a pentagram has density 2. The two triangular regions of a cross-quadrilateral (like a figure 8) have opposite-signed densities, and adding their areas together can give a total area of zero for the whole figure.[14]Considering the enclosed regions as point sets, we can find the area of the enclosed point set. This corresponds to the area of the plane covered by the polygon or to the area of one or more simple polygons having the same outline as the self-intersecting one. In the case of the cross-quadrilateral, it is treated as two simple triangles.[citation needed]Using the same convention for vertex coordinates as in the previous section, the coordinates of the centroid of a solid simple polygon are C x = 1 6 A i = 0 n 1 (x i + x i + 1) (x i y i + 1 x i + 1 y i) , {\displaystyle C_{x}={\frac {1}{6A}}\sum _{i=0}^{n-1}(x_{i}+x_{i+1})(x_{i}y_{i+1}-x_{i+1}y_{i}),} C y = 1 6 A i = 0 n 1 (y i + y i + 1) (x i y i + 1 x i + 1 y i) . {\displaystyle C_{y}={\frac {1}{6A}}\sum _{i=0}^{n-1}(y_{i}+y_{i+1})(x_{i}y_{i+1}-x_{i+1}y_{i}).} In these formulas, the signed value of area A {\displaystyle A} must be used.For triangles (n = 3), the centroids of the vertices and of the solid shape are the same, but, in general, this is not true for n > 3. The centroid of the vertex set of a polygon with n vertices has the coordinates c x = 1 n i = 0 n 1 x i , {\displaystyle c_{x}={\frac {1}{n}}\sum _{i=0}^{n-1}x_{i},} c y = 1 n i = 0 n 1 y i . {\displaystyle c_{y}={\frac {1}{n}}\sum _{i=0}^{n-1}y_{i}.} The idea of a polygon has been generalized in various ways. Some of the more important include:A spherical polygon is a circuit of arcs of great circles (sides) and vertices on the surface of a sphere. It allows the digon, a polygon having only two sides and two corners, which is impossible in a flat plane. Spherical polygons play an important role in cartography (map making) and in Wythoff's construction of the uniform polyhedra.A skew polygon does not lie in a flat plane, but zigzags in three (or more) dimensions. The Petrie polygons of the regular polytopes are well known examples.An apeirogon is an infinite sequence of sides and angles, which is not closed but has no ends because it extends indefinitely in both directions.A skew apeirogon is an infinite sequence of sides and angles that do not lie in a flat plane.A polygon with holes is an area-connected or multiply-connected planar polygon with one external boundary and one or more interior boundaries (holes).A complex polygon is a configuration analogous to an ordinary polygon, which exists in the complex plane of two real and two imaginary dimensions.An abstract polygon is an algebraic partially ordered set representing the various elements (sides, vertices, etc.) and their connectivity. A real geometric polygon is said to be a realization of the associated abstract polygon. Depending on the mapping, all the generalizations described here can be realized.A polyhedron is a three-dimensional solid bounded by flat polygonal faces, analogous to a polygon in two dimensions. The corresponding shapes in four or higher dimensions are called polytopes.[15] (In other conventions, the words polyhedron and polytope are used in any dimension, with the distinction between the two that a polytope is necessarily bounded.[16])The word polygon comes from Late Latin polygnum (a noun), from Greek (polygnon/polugnon), noun use of neuter of (polygnos/polugnos, the masculine adjective), meaning "many-angled". Individual polygons are named (and sometimes classified) according to the number of sides, combining a Greek-derived numerical prefix with the suffix -gon, e.g. pentagon, dodecagon. The triangle, quadrilateral and nonagon are exceptions.Beyond decagons (10-sided) and dodecagons (12-sided), mathematicians generally use numerical notation, for example 17-gon and 257-gon.[17]Exceptions exist for side counts that are easily expressed in verbal form (e.g. 20 and 30), or are used by non-mathematicians. Some special polygons also have their own names; for example the regular star pentagon is also known as the pentagram.Polygon names and miscellaneous propertiesNameSidesPropertiesmonogon1Not generally recognised as a polygon,[18] although some disciplines such as graph theory sometimes use the term.[19]digon2Not generally recognised as a polygon in the Euclidean plane, although it can exist as a spherical polygon.[20]triangle (or trigon)3The simplest polygon which can exist in the Euclidean plane. Can tile the plane.quadrilateral (or tetragon)4The simplest polygon which can cross itself; the simplest polygon which can be concave; the simplest polygon which can be non-cyclic. Can tile the plane.pentagon5[21] The simplest polygon which can exist as a regular star. A star pentagon is known as a pentagram or pentacle.hexagon6[21] Can tile the plane.heptagon (or septagon)7[21] The simplest polygon such that the regular form is not constructible with compass and straightedge. However, it can be constructed using a neusis construction.octagon8[21]nonagon (or enneagon)9[21]"Nonagon" mixes Latin [novem = 9] with Greek; "enneagon" is pure Greek.decagon10[21]hendecagon (or undecagon)11[21] The simplest polygon such that the regular form cannot be constructed with compass, straightedge, and angle trisector. However, it can be constructed with neusis.[22]dodecagon (or duodecagon)12[21]tridecagon (or triskaidecagon)13[21]tetradecagon (or tetrakaidecagon)14[21]pentadecagon (or pentakaidecagon)15[21]hexadecagon (or hexakaidecagon)16[21]heptadecagon (or heptakaidecagon)17Constructible polygon[17]octadecagon (or octakaidecagon)18[21]enneadecagon (or enneakaidecagon)19[21]icosagon20[21]icositrigon (or icosikaitrigon)23The simplest polygon such that the regular form cannot be constructed with neusis.[23][22]icositetragon (or icosikaitetragon)24[21]icosipentagon (or icosikaipentagon)25The simplest polygon such that it is not known if the regular form can be constructed with neusis or not.[23][22]triacontagon30[21]tetracontagon (or tessaracontagon)40[21][24]pentacontagon (or pentecontagon)50[21][24]hexacontagon (or hexecontagon)60[21][24]heptacontagon (or hebdomecontagon)70[21][24]octacontagon (or ogdocontagon)80[21][24]enneacontagon (or enenecontagon)90[21][24]hectogon (or hecatontagon)[25]100[21]257-gon257Constructible polygon[17]chiliagon1000Philosophers including Ren Descartes,[26] Immanuel Kant,[27] David Hume,[28] have used the chiliagon as an example in discussions.myriagon10,00065537-gon65,537Constructible polygon[17]megagon[29][30][31]1,000,000As with Ren Descartes's example of the chiliagon, the million-sided polygon has been used as an illustration of a well-defined concept that cannot be visualised.[32][33][34][35][36][37][38] The megagon is also used as an illustration of the convergence of regular polygons to a circle.[39]apeirogonA degenerate polygon of infinitely many sides.To construct the name of a polygon with more than 20 and fewer than 100 edges, combine the prefixes as follows.[21] The "kai" term applies to 13-gons and higher and was used by Kepler, and advocated by John H. Conway for clarity of concatenated prefix numbers in the naming of quasiregular polyhedra,[25] though not all sources use it.TensandOnesfinal suffix-kai-1-hena--gon20icosi- (icosa- when alone)2-di-30triaconta- (or triconta-)3-tri-40tetraconta- (or tessaraconta-)4-tetra-50pentaconta- (or pentecontа-)5-penta-60hexaconta- (or hexecontа-)6-hexa-70heptaconta- (or hebdomecontа-)7-hepta-80octaconta- (or ogdocontа-)8-octa-90enneaconta- (or enenecontа-)9-ennea-Historical image of polygons (1699)Polygons have been known since ancient times. The regular polygons were known to the ancient Greeks, with the pentagram, a non-convex regular polygon (star polygon), appearing as early as the 7th century B.C. on a krater by Aristophanes, found at Caere and now in the Capitoline Museum.[40][41]The first known systematic study of non-convex polygons in general was made by Thomas Bradwardine in the 14th century.[42]In 1952, Geoffrey Colin Shephard generalized the idea of polygons to the complex plane, where each real dimension is accompanied by an imaginary one, to create complex polygons.[43]The Giant's Causeway, in Northern IrelandPolygons appear in rock formations, most commonly as the flat facets of crystals, where the angles between the sides depend on the type of mineral from which the crystal is made.Regular hexagons can occur when the cooling of lava forms areas of tightly packed columns of basalt, which may be seen at the Giant's Causeway in Northern Ireland, or at the Devil's Postpile in California.In biology, the surface of the wax honeycomb made by bees is an array of hexagons, and the sides and base of each cell are also polygons.Main article: Polygon (computer graphics)This section needs additional citations for verification. Please help improve this article by adding citations to reliable sources in this section. Unsourced material may be challenged and removed. (October 2018) (Learn how and when to remove this message)In computer graphics, a polygon is a primitive used in modelling and rendering. They are defined in a database, containing arrays of vertices (the coordinates of the geometrical vertices, as well as other attributes of the polygon, such as color, shading and texture), connectivity information, and materials.[44][45]Any surface is modelled as a tessellation called polygon mesh. If a square mesh has n + 1 points (vertices) per side, there are n squared squares in the mesh, or 2n squared triangles since there are two triangles in a square. There are (n + 1)2 / 2(n2) vertices per triangle. Where n is large, this approaches one half. Or, each vertex inside the square mesh connects four edges (lines).The imaging system calls up the structure of polygons needed for the scene to be created from the database. This is transferred to active memory and finally, to the display system (screen, TV monitors etc.) so that the scene can be viewed. During this process, the imaging system renders polygons in correct perspective ready for transmission of the processed data to the display system. Although polygons are two-dimensional, through the system computer they are placed in a visual scene in the correct three-dimensional orientation.In computer graphics and computational geometry, it is often necessary to determine whether a given point P = (x 0 , y 0) {\displaystyle P= (x_{0},y_{0})} lies inside a simple polygon given by a sequence of line segments. This is called the point in polygon test.[46]Boolean operations on polygonsComplete graphConstructible polygonCyclic polygonGeometric shapeGolygonList of polygonsPolyformPolygon soupPolygon triangulationPrecision polygonSpirolateralSynthetic geometryTilingTiling puzzleCoxeter, H.S.M.; Regular Polytopes, Methuen and Co., 1948 (3rd Edition, Dover, 1973).Cromwell, P.; Polyhedra, CUP hbk (1997), pbk. (1999).Grnbaum, B.; Are your polyhedra the same as my polyhedra? Discrete and comput. geom: the Goodman-Pollack festschrift, ed. Aronov et al. Springer (2003) pp.461488. (pdf)^ Craig, John (1849). A new universal etymological technological, and pronouncing dictionary of the English language. Oxford University. p.404. Extract of p. 404^ Magnus, Wilhelm (1974). Noneuclidean tesselations and their groups. Pure and Applied Mathematics. Vol.61. Academic Press. p.37.^ Kappraff, Jay (2002). Beyond measure: a guided tour through nature, myth, and number. World Scientific. p.258. 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number, minus 1.In every polygon with perimeter p and area A , the isoperimetric inequality p 2 > 4 A {\displaystyle p^{2}>4\pi A} holds.[8]For any two simple polygons of equal area, the BolyaiGerwien theorem asserts that the first can be cut into polygonal pieces which can be reassembled to form the second polygon.The lengths of the sides of a polygon do not in general determine its area.[9] However, if the polygon is simple and cyclic then the sides do determine the area.[10] Of all n-gons with given side lengths, the one with the largest area is cyclic. Of all n-gons with a given perimeter, the one with the largest area is regular (and therefore cyclic).[11]Many specialized formulas apply to the areas of regular polygons.The area of a regular polygon is given in terms of the radius r of its inscribed circle and its perimeter p by A = 1 2 p r . {\displaystyle A={\tfrac {1}{2}}\cdot p\cdot r.} This radius is also termed its apothem and is often represented as a.The area of a regular n-gon can be expressed in terms of the radius R of its circumscribed circle (the unique circle passing through all vertices of the regular n-gon) as follows:[12][13] A = R 2 n 2 sin 2 n = R 2 n sin n cos n {\displaystyle A=R^{2}\cdot {\frac {n}{2}}\cdot \sin {\frac {2\pi }{n}}=R^{2}\cdot n\cdot \sin {\frac {\pi }{n}}\cdot \cos {\frac {\pi }{n}}} The area of a self-intersecting polygon can be defined in two different ways, giving different answers:Using the formulas for simple polygons, we allow that particular regions within the polygon may have their area multiplied by a factor which we call the density of the region. For example, the central convex pentagon in the center of a pentagram has density 2. The two triangular regions of a cross-quadrilateral (like a figure 8) have opposite-signed densities, and adding their areas together can give a total area of zero for the whole figure.[14]Considering the enclosed regions as point sets, we can find the area of the enclosed point set. This corresponds to the area of the plane covered by the polygon or to the area of one or more simple polygons having the same outline as the self-intersecting one. In the case of the cross-quadrilateral, it is treated as two simple triangles.[citation needed]Using the same convention for vertex coordinates as in the previous section, the coordinates of the centroid of a solid simple polygon are C x = 1 6 A i = 0 n 1 (x i + x i + 1) (x i y i + 1 x i + 1 y i) , {\displaystyle C_{x}={\frac {1}{6A}}\sum _{i=0}^{n-1}(x_{i}+x_{i+1})(x_{i}y_{i+1}-x_{i+1}y_{i}),} C y = 1 6 A i = 0 n 1 (y i + y i + 1) (x i y i + 1 x i + 1 y i) . {\displaystyle C_{y}={\frac {1}{6A}}\sum _{i=0}^{n-1}(y_{i}+y_{i+1})(x_{i}y_{i+1}-x_{i+1}y_{i}).} In these formulas, the signed value of area A {\displaystyle A} must be used.For triangles (n = 3), the centroids of the vertices and of the solid shape are the same, but, in general, this is not true for n > 3. The centroid of the vertex set of a polygon with n vertices has the coordinates c x = 1 n i = 0 n 1 x i , {\displaystyle c_{x}={\frac {1}{n}}\sum _{i=0}^{n-1}x_{i},} c y = 1 n i = 0 n 1 y i . {\displaystyle c_{y}={\frac {1}{n}}\sum _{i=0}^{n-1}y_{i}.} The idea of a polygon has been generalized in various ways. Some of the more important include:A spherical polygon is a circuit of arcs of great circles (sides) and vertices on the surface of a sphere. It allows the digon, a polygon having only two sides and two corners, which is impossible in a flat plane. Spherical polygons play an important role in cartography (map making) and in Wythoff's construction of the uniform polyhedra.A skew polygon does not lie in a flat plane, but zigzags in three (or more) dimensions. The Petrie polygons of the regular polytopes are well known examples.An apeirogon is an infinite sequence of sides and angles, which is not closed but has no ends because it extends indefinitely in both directions.A skew apeirogon is an infinite sequence of sides and angles that do not lie in a flat plane.A polygon with holes is an area-connected or multiply-connected planar polygon with one external boundary and one or more interior boundaries (holes).A complex polygon is a configuration analogous to an ordinary polygon, which exists in the complex plane of two real and two imaginary dimensions.An abstract polygon is an algebraic partially ordered set representing the various elements (sides, vertices, etc.) and their connectivity. A real geometric polygon is said to be a realization of the associated abstract polygon. Depending on the mapping, all the generalizations described here can be realized.A polyhedron is a three-dimensional solid bounded by flat polygonal faces, analogous to a polygon in two dimensions. The corresponding shapes in four or higher dimensions are called polytopes.[15] (In other conventions, the words polyhedron and polytope are used in any dimension, with the distinction between the two that a polytope is necessarily bounded.[16])The word polygon comes from Late Latin polygnum (a noun), from Greek (polygnon/polugnon), noun use of neuter of (polygnos/polugnos, the masculine adjective), meaning "many-angled". Individual polygons are named (and sometimes classified) according to the number of sides, combining a Greek-derived numerical prefix with the suffix -gon, e.g. pentagon, dodecagon. The triangle, quadrilateral and nonagon are exceptions.Beyond decagons (10-sided) and dodecagons (12-sided), mathematicians generally use numerical notation, for example 17-gon and 257-gon.[17]Exceptions exist for side counts that are easily expressed in verbal form (e.g. 20 and 30), or are used by non-mathematicians. Some special polygons also have their own names; for example the regular star pentagon is also known as the pentagram.Polygon names and miscellaneous propertiesNameSidesPropertiesmonogon1Not generally recognised as a polygon,[18] although some disciplines such as graph theory sometimes use the term.[19]digon2Not generally recognised as a polygon in the Euclidean plane, although it can exist as a spherical polygon.[20]triangle (or trigon)3The simplest polygon which can exist in the Euclidean plane. Can tile the plane.quadrilateral (or tetragon)4The simplest polygon which can cross itself; the simplest polygon which can be concave; the simplest polygon which can be non-cyclic. Can tile the plane.pentagon5[21] The simplest polygon which can exist as a regular star. A star pentagon is known as a pentagram or pentacle.hexagon6[21] Can tile the plane.heptagon (or septagon)7[21] The simplest polygon such that the regular form is not constructible with compass and straightedge. However, it can be constructed using a neusis construction.octagon8[21]nonagon (or enneagon)9[21]"Nonagon" mixes Latin [novem = 9] with Greek; "enneagon" is pure Greek.decagon10[21]hendecagon (or undecagon)11[21] The simplest polygon such that the regular form cannot be constructed with compass, straightedge, and angle trisector. However, it can be constructed with neusis.[22]dodecagon (or duodecagon)12[21]tridecagon (or triskaidecagon)13[21]tetradecagon (or tetrakaidecagon)14[21]pentadecagon (or pentakaidecagon)15[21]hexadecagon (or hexakaidecagon)16[21]heptadecagon (or heptakaidecagon)17Constructible polygon[17]octadecagon (or octakaidecagon)18[21]enneadecagon (or enneakaidecagon)19[21]icosagon20[21]icositrigon (or icosikaitrigon)23The simplest polygon such that the regular form cannot be constructed with neusis.[23][22]icositetragon (or icosikaitetragon)24[21]icosipentagon (or icosikaipentagon)25The simplest polygon such that it is not known if the regular form can be constructed with neusis or not.[23][22]triacontagon30[21]tetracontagon (or tessaracontagon)40[21][24]pentacontagon (or pentecontagon)50[21][24]hexacontagon (or hexecontagon)60[21][24]heptacontagon (or hebdomecontagon)70[21][24]octacontagon (or ogdocontagon)80[21][24]enneacontagon (or enenecontagon)90[21][24]hectogon (or hecatontagon)[25]100[21]257-gon257Constructible polygon[17]chiliagon1000Philosophers including Ren Descartes,[26] Immanuel Kant,[27] David Hume,[28] have used the chiliagon as an example in discussions.myriagon10,00065537-gon65,537Constructible polygon[17]megagon[29][30][31]1,000,000As with Ren Descartes's example of the chiliagon, the million-sided polygon has been used as an illustration of a well-defined concept that cannot be visualised.[32][33][34][35][36][37][38] The megagon is also used as an illustration of the convergence of regular polygons to a circle.[39]apeirogonA degenerate polygon of infinitely many sides.To construct the name of a polygon with more than 20 and fewer than 100 edges, combine the prefixes as follows.[21] The "kai" term applies to 13-gons and higher and was used by Kepler, and advocated by John H. Conway for clarity of concatenated prefix numbers in the naming of quasiregular polyhedra,[25] though not all sources use it.TensandOnesfinal suffix-kai-1-hena--gon20icosi- (icosa- when alone)2-di-30triaconta- (or triconta-)3-tri-40tetraconta- (or tessaraconta-)4-tetra-50pentaconta- (or penteconta-)5-penta-60hexaconta- (or hexeconta-)6-hexa-70heptaconta- (or hebdomeconta-)7-hepta-80octaconta- (or ogdoconta-)8-octa-90enneaconta- (or eneneconta-)9-ennea-Historical image of polygons (1699)Polygons have been known since ancient times. The regular polygons were known to the ancient Greeks, with the pentagram, a non-convex regular polygon (star polygon), appearing as early as the 7th century B.C. on a krater by Aristophanes, found at Caere and now in the Capitoline Museum.[40][41]The first known systematic study of non-convex polygons in general was made by Thomas Bradwardine in the 14th century.[42]In 1952, Geoffrey Colin Shephard generalized the idea of polygons to the complex plane, where each real dimension is accompanied by an imaginary one, to create complex polygons.[43]The Giant's Causeway, in Northern IrelandPolygons appear in rock formations, most commonly as the flat facets of crystals, where the angles between the sides depend on the type of mineral from which the crystal is made.Regular hexagons can occur when the cooling of lava forms areas of tightly packed columns of basalt, which may be seen at the Giant's Causeway in Northern Ireland, or at the Devil's Postpile in California.In biology, the surface of the wax honeycomb made by bees is an array of hexagons, and the sides and base of each cell are also polygons.Main article: Polygon (computer graphics)This section needs additional citations for verification. Please help improve this article by adding citations to reliable sources in this section. Unsourced material may be challenged and removed. (October 2018) (Learn how and when to remove this message)In computer graphics, a polygon is a primitive used in modelling and rendering. They are defined in a database, containing arrays of vertices (the coordinates of the geometrical vertices, as well as other attributes of the polygon, such as color, shading and texture), connectivity information, and materials.[44][45]Any surface is modelled as a tessellation called polygon mesh. If a square mesh has n + 1 points (vertices) per side, there are n squared squares in the mesh, or 2n squared triangles since there are two triangles in a square. There are (n + 1)2 / 2(n2) vertices per triangle. Where n is large, this approaches one half. Or, each vertex inside the square mesh connects four edges (lines).The imaging system calls up the structure of polygons needed for the scene to be created from the database. This is transferred to active memory and finally, to the display system (screen, TV monitors etc.) so that the scene can be viewed. During this process, the imaging system renders polygons in correct perspective ready for transmission of the processed data to the display system. Although polygons are two-dimensional, through the system computer they are placed in a visual scene in the correct three-dimensional orientation.In computer graphics and computational geometry, it is often necessary to determine whether a given point P = (x 0 , y 0) {\displaystyle P=(x_{0},y_{0})} lies inside a simple polygon given by a sequence of line segments. This is called the point in polygon test.[46]Boolean operations on polygonsComplete graphConstructible polygonCyclic polygonGeometric shapeGolygonList of polygonsPolyformPolygon soupPolygon triangulationPrecision polygonSpirolateralSynthetic geometryTilingTiling puzzleCoxeter, H.S.M.; Regular Polytopes, Methuen and Co., 1948 (3rd Edition, Dover, 1973).Cromwell, P.; Polyhedra, CUP hbk (1997), pbk. (1999).Grnbaum, B.; Are your polyhedra the same as my polyhedra? Discrete and comput. geom: the Goodman-Pollack festschrift, ed. Aronov et al. Springer (2003) pp.461488. (pdf)^ Craig, John (1849). A new universal etymological technological, and pronouncing dictionary of the English language. Oxford University. p.404. Extract of p. 404^ Magnus, Wilhelm (1974). Noneuclidean tesselations and their groups. Pure and Applied Mathematics. Vol.61. Academic Press. p.37.^ Kappraff, Jay (2002). Beyond measure: a guided tour through nature, myth, and number. World Scientific. p.258. 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Heath uses the Latinized spelling "Aristophonus" for the vase painter's name.^ Cratere with the blinding of Polyphemus and a naval battle Archived 2013-11-12 at the Wayback Machine, Castellani Halls, Capitoline Museum, accessed 2013-11-11. Two pentagrams are visible near the center of the image,^ Coxeter, H.S.M.; Regular Polytopes, 3rd Edn, Dover (pbk), 1973, p. 114^ Shephard, G.C.; "Regular complex polytopes", Proc. London Math. Soc. Series 3 Volume 2, 1952, pp 8297^ "opengl vertex specification".^ "direct3d rendering, based on vertices & triangles". 6 January 2021.^ Schirra, Stefan (2008). "How Reliable Are Practical Point-in-Polygon Strategies?". In Halperin, Dan; Mehlhorn, Kurt (eds.). Algorithms - ESA 2008: 16th Annual European Symposium, Karlsruhe, Germany, September 15-17, 2008, Proceedings. Lecture Notes in Computer Science. Vol.5193. Springer. pp.744755. doi:10.1007/978-3-540-87744-8_62. ISBN978-3-540-87743-1.Look up polygon in Wiktionary, the free dictionary.Wikimedia Commons has media related to Polygons.Weisstein, Eric W. "Polygon". MathWorld.What Are Polyhedra?, with Greek Numerical PrefixesPolygons, types of polygons, and polygon properties, with interactive animationHow to draw monochrome orthogonal polygons on screens, by Herbert Glarnercomp.graphics.algorithms Frequently Asked Questions, solutions to mathematical problems computing 2D and 3D polygonsComparison of the different algorithms for Polygon Boolean operations, compares capabilities, speed and numerical robustnessInterior angle sum of polygons: a general formula, Provides an interactive Java investigation that extends the interior angle sum formula for simple closed polygons to include crossed (complex) polygonsvteFundamental convex regular and uniform polytopes in dimensions 210FamilyAnBnI2(p) / DnE6 / E7 / E8 / F4 / G2HnRegular polygonTriangleSquarep-gonHexagonPentagonUniform polyhedronTetrahedronOctahedron CubeDemicubeDodecahedron IcosahedronUniform polychoronPentachoron16-cell TesseractDemitesseract24-cell120-cell 600-cellUniform 5-polytope5-simplex5-orthoplex 5-cube5-demicubeUniform 6-polytope6-simplex6-orthoplex 6-cube6-demicube122 221Uniform 7-polytope7-simplex7-orthoplex 7-cube7-demicube132 231 321Uniform 8-polytope8-simplex8-orthoplex 8-cube8-demicube142 241 421Uniform 9-polytope9-simplex9-orthoplex 9-cube9-demicubeUniform 10-polytope10-simplex10-orthoplex 10-cube10-demicubeUniform n-polytopen-simplexn-orthoplex n-cuben-demicube1k2 2k1 k21n-pentagonal polytopeTopics: Polytope families Regular polytope List of regular polytopes and compoundsRetrieved from " 2Uniform 6-polytope122Rectified 122Birectified 122[clarification needed]Trirectified 122Truncated 122221Rectified 221orthogonal projections in E6 Coxeter planeIn 6-dimensional geometry, the 122 polytope is a uniform polytope, constructed from the E6 group. It was first published in E. L. Elte's 1912 listing of semiregular polytopes, named as V72 (for its 72 vertices).[1]Its Coxeter symbol is 122, describing its bifurcating Coxeter-Dynkin diagram, with a single ring on the end of the 1-node sequence. There are two rectifications of the 122, constructed by positions points on the elements of 122. The rectified 122 is constructed by points at the mid-edges of the 122. The birectified 122 is constructed by points at the triangle face centers of the 122.These polytopes are from a family of 39 convex uniform polytopes in 6-dimensions, made of uniform polytope facets and vertex figures, defined by all permutations of rings in this Coxeter-Dynkin diagram: .122 polytopeTypeUniform 6-polytopeFamily1k2 polytopeSchlfli symbol{3,32,2}Coxeter symbol122Coxeter-Dynkin diagram or 5-faces54:27 121 27 121 4-faces702:270 111 432 120 Cells2160:1080 110 1080 {3,3} Faces2160 {3} Edges720Vertices72Vertex figureBirectified 5-simplex:022 Petrie polygonDodecagonCoxeter groupE6, [[3,32,2]], order 103680PropertiesconvexIsotopicThe 122 polytope contains 72 vertices, and 54 5-demicubic facets. It has a birectified 5-simplex vertex figure. Its 72 vertices represent the root vectors of the simple Lie group E6.Pentacontatetrapeton (Acronym: mo) - 54-facetted polypeton (Jonathan Bowers)[2]Coxeter plane orthographic projectionsE6[12]D5[8]D4 / A2[6](1,2)(1,3)(1,9,12)B6[12/2]A5[6]A4[[5]] = [10]A3 / D3[4](1,2)(2,3,6)(1,2)(1,6,8,12)It is created by a Wythoff construction upon a set of 6 hyperplane mirrors in 6-dimensional space.The facet information can be extracted from its Coxeter-Dynkin diagram, .Removing the node on either of 2-length branches leaves the 5-demicube, 131, .The vertex figure is determined by removing the ringed node and ringing the neighboring node. This makes the birectified 5-simplex, 022, .Seen in a configuration matrix, the element counts can be derived by mirror removal and ratios of Coxeter group orders.[3]E6k-facefkf0f1f2f3f4f5k-figurenotesA5( )f0722090606015153066r{3,3,3}E6/A5 = 72*6!/6! = 72A2A2A1{ }f1272099933933{3}{3}E6/A2A2A1 = 72*6!/3!/3!/2 = 720A2A1A1{3}f23321602211422s{2,4}E6/A2A1A1 = 72*6!/3!/2/2 = 2160A3A1{3,3}f34641080*10221{ }( )E6/A3A1 = 72*6!/4!/2 = 1080464*108001212A4A1{3,3,3}f45101050216**20{ }E6/A4A1 = 72*6!/5!/2 = 2165101005*216*02D4h{4,3,3}8243288**27011E6/D4 = 72*6!/8/4! = 270D5h{4,3,3,3}f516801608401601027*( )E6/D5 = 72*6!/16/5! = 27168016408001610*27Orthographic projection in Aut(E6) Coxeter plane with 18-gonal symmetry for complex polyhedron, 3{3}3{4}2. It has 72 vertices, 216 3-edges, and 54 3{3}3 faces.The regular complex polyhedron 3{3}3{4}2, , in C 2 {\displaystyle \mathbb {C} ^{2}} has a real representation as the 122 polytope in 4-dimensional space. It has 72 vertices, 216 3-edges, and 54 3{3}3 faces. Its complex reflection group is 3[3]3[4]2, order 1296. It has a half-symmetry quasiregular construction as , as a rectification of the Hessian polyhedron, .[4]Along with the semiregular polytope, 221, it is also one of a family of 39 convex uniform polytopes in 6-dimensions, made of uniform polytope facets and vertex figures, defined by all permutations of rings in this Coxeter-Dynkin diagram: .1k2 figures in n dimensionsSpaceFiniteEuclideanHyperbolicn345678910CoxetergroupE3=A2A1E4=A4E5=D5E6E7E8E9 = E ~ 8 {\displaystyle {\tilde {E}}_{8}} = E8++E10 = T 8 {\displaystyle {\bar {T}}_{8}} = E8++CoxeterdiagramSymmetry(order)[31,2,1][30,2,1][31,2,1][[32,2,1]][33,2,1][34,2,1][35,2,1] [36,2,1]Order121201,920103,6802,903,040696,729,600Graph--Name11,210211212213214215216The 122 is related to the 24-cell by a geometric folding E6 F4 of Coxeter-Dynkin diagrams, E6 corresponding to 122 in 6 dimensions, F4 to the 24-cell in 4 dimensions. This can be seen in the Coxeter plane projections. The 24 vertices of the 24-cell are projected in the same two rings as seen in the 122.E6/F4 Coxeter planes12224-cellD4/B4 Coxeter planes12224-cellThis polytope is the vertex figure for a uniform tessellation of 6-dimensional space, 222, .Rectified 122TypeUniform 6-polytopeSchlfli symbol2r{3,3,32,1}r{3,32,2}Coxeter symbol0221Coxeter-Dynkin diagramor 5-faces1264-faces1566Cells6480Faces6480Edges6480Vertices720Vertex figure3-3 duoprism prismPetrie polygonDodecagonCoxeter groupE6, [[3,32,2]], order 103680PropertiesconvexThe rectified 122 polytope (also called 0221) can tessellate 6-dimensional space as the Voronoi cell of the E6* honeycomb lattice (dual of E6 lattice).[5]Birectified 221 polytopeRectified pentacontatetrapeton (Acronym: ram) - rectified 54-facetted polypeton (Jonathan Bowers)[6]Vertices are colored by their multiplicity in this projection, in progressive order: red, orange, yellow.Coxeter plane orthographic projectionsE6[12]D5[8]D4 / A2[6]B6[12/2]A5[6]A4[5]A3 / D3[4]Its construction is based on the E6 group and information can be extracted from the ringed Coxeter-Dynkin diagram representing this polytope: .Removing the ring on the short branch leaves the birectified 5-simplex, .Removing the ring on either of 2-length branches leaves the birectified 5-orthoplex in its alternated form: t2(211), .The vertex figure is determined by removing the ringed node and ringing the neighboring ring. This makes 3-3 duoprism prism, {3}{3}{}, .Seen in a configuration matrix, the element counts can be derived by mirror removal and ratios of Coxeter group orders.[3][6]E6k-facefkf0f1f2f3f4f5k-figurenotesA2A2A1( )f07201818189618969636932333{3}{3}{ }E6/A2A2A1 = 72*6!/3!/3!/2 = 720A1A1A1{ }f1264802211421221241122{ }{ }( )E6/A1A1A1 = 72*6!/2/2/2 = 6480A2A1{3}f2334320**1210011201211SphenoidE6/A2A1 = 72*6!/3!/2 = 432033*4320*0201110221112A2A1A133**2160002020104102 2{ }{ }E6/A2A1A1 = 72*6!/3!/2/2 = 2160A2A1{3,3}f3464001080****21000120{ }( )E6/A2A1 = 72*6!/3!/2 = 1080A3r{3,3}612440*2160***10110111{3}E6/A3 = 72*6!/4! = 2160A3A1612404**1080**01020021{ }( )E6/A3A1 = 72*6!/4!/2 = 1080{3,3}46040***1080*00201102r{3,3}612044****108000021012A4r{3,3,3}f4103020100550004 32****110{ }E6/A4 = 72*6!/5! = 432A4A1103020010505 00*216***020E6/A4A1 = 72*6!/5!/2 = 216A4103010200050 50**432**101E6/A4 = 72*6!/5! = 432D4{3,4,3}249632323208808***270*011E6/D4 = 72*6!/8/4! = 270A4A1r{3,3,3}10300201000055****216002E6/A4A1 = 72*6!/5!/2 = 216A52r{3,3,3,3}f5209060601530015060600 72**( )E6/A5 = 72*6!/6! = 72D52r{4,3,3,3}8048032016016080808004016160100*27*E6/D5 = 72*6!/16/5! = 27804801603201600804080800016101 6**27Truncated 122TypeUniform 6-polytopeSchlfli symbolt{3,32,2}Coxeter symbolt(122)Coxeter-Dynkin diagramor 5-faces72+27+274-faces32+216+432+270+216Cells1080+2160+1080+1080+1080Faces4320+4320+2160Edges6480+720Vertices1440Vertex figure( )v{3}x{3}Petrie polygonDodecagonCoxeter groupE6, [[3,32,2]], order 103680PropertiesconvexTruncated 122 polytope (Acronym: tim)[7]Its construction is based on the E6 group and information can be extracted from the ringed Coxeter-Dynkin diagram representing this polytope: .Vertices are colored by their multiplicity in this projection, in progressive order: red, orange, yellow.Coxeter plane orthographic projectionsE6[12]D5[8]D4 / A2[6]B6[12/2]A5[6]A4[5]A3 / D3[4]Birectified 122 polytopeTypeUniform 6-polytopeSchlfli symbol2r{3,32,2}Coxeter symbol2r(122)Coxeter-Dynkin diagramor 5-faces1264-faces2286Cells10800Faces19440Edges12960Vertices2160Vertex figureCoxeter groupE6, [[3,32,2]], order 103680PropertiesconvexBicantellated 221Birectified pentacontatetrapeton (barm) (Jonathan Bowers)[8]Vertices are colored by their multiplicity in this projection, in progressive order: red, orange, yellow.Coxeter plane orthographic projectionsE6[12]D5[8]D4 / A2[6]B6[12/2]A5[6]A4[5]A3 / D3[4]Trirectified 122 polytopeTypeUniform 6-polytopeSchlfli symbol3r{3,32,2}Coxeter symbol3r(122)Coxeter-Dynkin diagramor 5-faces5584-faces4608Cells8640Faces6480Edges2160Vertices270Vertex figureCoxeter groupE6, [[3,32,2]], order 103680PropertiesconvexTricantellated 221Trirectified pentacontatetrapeton (Acronym: trim, old: cacam, tram, mak) (Jonathan Bowers)[9]List of E6 polytopes^ Elte, 1912^ Klitzing, (o3o3o3o3o *c3x - mo)^ a b Coxeter, Regular Polytopes, 11.8 Gosset figures in six, seven, and eight dimensions, pp. 202203^ Coxeter, H. S. M., Regular Complex Polytopes, second edition, Cambridge University Press, (1991). p.30 and p.47^ The Voronoi Cells of the E6* and E7* Lattices Archived 2016-01-30 at the Wayback Machine, Edward Pervin^ a b Klitzing, (o3o3x3o3o *c3o - ram)^ Klitzing, (o3o3x3o3o *c3x - tim)^ Klitzing, (o3x3o3x3o *c3o - barm)^ Klitzing, (x3o3o3o3x *c3o - trim)Elte, E. L. (1912), The Semiregular Polytopes of the Hyperspaces, Groningen: University of GroningenH. S. M. Coxeter, Regular Polytopes, 3rd Edition, Dover New York, 1973Kaleidoscopes: Selected Writings of H.S.M. Coxeter, edited by F. Arthur Sherk, Peter McMullen, Anthony C. Thompson, Asia Ivic Weiss, Wiley-Interscience Publication, 1995, wiley.com, ISBN978-0-471-01003-6(Paper 24) H.S.M. Coxeter, Regular and Semi-Regular Polytopes III, [Math. Zeit. 200 (1988) 3-45] See p334 (figure 3.6a) by Peter mcMullen: (12-gonal node-edge graph of 122)Klitzing, Richard. "6D uniform polytopes (polypeta) with acronyms". o3o3o3o3o *c3x - mo, o3o3x3o3o *c3o - ram, o3o3x3o3o *c3x - tim, o3x3o3x3o *c3o - barm, x3o3o3o3x *c3o - trimvteFundamental convex regular and uniform polytopes in dimensions 210FamilyAnBnI2(p) / DnE6 / E7 / E8 / F4 / G2HnRegular polygonTriangleSquarep-gonHexagonPentagonUniform polyhedronTetrahedronOctahedron CubeDemicubeDodecahedron IcosahedronUniform polychoronPentachoron16-cell TesseractDemitesseract24-cell120-cell 600-cellUniform 5-polytope5-simplex5-orthoplex 5-cube5-demicubeUniform 6-polytope6-simplex6-orthoplex 6-cube6-demicube122 221Uniform 7-polytope7-simplex7-orthoplex 7-cube7-demicube132 231 321Uniform 8-polytope8-simplex8-orthoplex 8-cube8-demicube142 241 421Uniform 9-polytope9-simplex9-orthoplex 9-cube9-demicubeUniform 10-polytope10-simplex10-orthoplex 10-cube10-demicubeUniform n-polytopen-simplexn-orthoplex n-cuben-demicube1k2 2k1 k21n-pentagonal polytopeTopics: Polytope families Regular polytope List of regular polytopes and compoundsRetrieved from " 3The following pages link to 1 22 polytope External tools(link counttransclusion countsorted list) See help page for transcluding these entriesShowing 50 items.View (previous 50 | next 50) (20 | 50 | 100 | 250 | 500)Dodecahedron (links | edit)Regular icosahedron (links | edit)Regular octahedron (links | edit)Polytope (links | edit)Polygon (links | edit)4-polytope (links | edit)Tetrahedron (links | edit)Tesseract (links | edit)Simplex (links | edit)Hypercube (links | edit)Hexagon (links | edit)Equilateral triangle (links | edit)List of mathematical shapes (links | edit)Root system (links | edit)24-cell (links | edit)E6 (mathematics) (links | edit)Coxeter group (links | edit)Regular polygon (links | edit)72 (number) (links | edit)600-cell (links | edit)List of regular polytopes (links | edit)Dodecagon (links | edit)5-cell (links | edit)List of polygons, polyhedra and polytopes (links | edit)Regular polytope (links | edit)Square (links | edit)Cross-polytope (links | edit)16-cell (links | edit)120-cell (links | edit)Point group (links | edit)Uniform 4-polytope (links | edit)Duoprism (links | edit)Coxeter element (links | edit)Runcinated 5-cell (links | edit)Runcinated tesseracts (links | edit)Uniform polyhedron (links | edit)Rectified 600-cell (links | edit)Rectified 5-cell (links | edit)Snub 24-cell (links | edit)Cantellated tesseract (links | edit)Truncated tesseract (links | edit)Rectified tesseract (links | edit)Truncated 5-cell (links | edit)Grand antiprism (links | edit)Rectified 120-cell (links | edit)Rectified 24-cell (links | edit)Cantellated 5-cell (links | edit)Cantellated 24-cells (links | edit)Runcinated 24-cells (links | edit)Truncated 120-cells (links | edit)View (previous 50 | next 50) (20 | 50 | 100 | 250 | 500)Retrieved from " WhatLinksHere/1_22_polytope"

Types of polygons 1 100. What is a polygon with 100 sides called. 100 polygons. List of polygons 1-100. All polygons. How many types of polygons are there. What are the 10 types of polygons. 100 sides of polygon.