I'm not a robot

Property of a mathematical space This article is about the dimension of a space. For the dimension of an object, see size. For the dimension of a quantity, see Dimensional analysis. For other uses, see Dimension (disambiguation). From left to right: a square, a cube and a tesseract. The square is two-dimensional (2D) and bounded by one-dimensional line segments; the cube is three-dimensional (3D) and bounded by two-dimensional squares; the tesseract is four-dimensional (4D) and bounded by three-dimensional cubes. The first four spatial dimensions, represented in a two-dimensional picture. Two points can be connected to create a line segment.Two parallel line segments can be connected to form a square.Two parallel squares can be connected to form a cube.Two parallel cubes can be connected to form a tesseract. GeometryProjecting a sphere to a plane Branches Euclidean Non-Euclidean Elliptic Spherical Hyperbolic Non-Archimedean geometry Projective Affine Synthetic Analytic Algebraic Arithmetic Diophantine Differential Riemannian Symplectic Discrete differential Complex Finite Discrete/Combinatorial Digital Convex Computational Fractal Incidence Noncommutative geometry Noncommutative algebraic geometry ConceptsFeaturesDimension Straightedge and compass constructions Angle Curve Diagonal Orthogonality (Perpendicular) Parallel Vertex Congruence Similarity Symmetry Zero-dimensional Point One-dimensional Line segment ray Length Two-dimensional Plane Area Polygon Triangle Altitude Hypotenuse Pythagorean theorem Parallelogram Square Rectangle Rhombus Rhomboid Quadrilateral Trapezoid Kite Circle Diameter Circumference Area Three-dimensional Volume Cube cuboid Cylinder Dodecahedron Icosahedron Octahedron Pyramid Platonic Solid Sphere Tetrahedron Four-/other-dimensional Tesseract Hypersphere Geometers by name Aida Aryabhata Ahmes Alhazen Apollonius Archimedes Atiyah Baudhayana Bolyai Brahmagupta Cartan Chern Coxeter Descartes Euclid Euler Gauss Gromov Hilbert Huygens Jyeṣṭhadeva Kātyāyana Khayyám Klein Lobachevsky Manava Minkowski Minggatu Pascal Pythagoras Parameshvara Poincaré Riemann Sakabe Sijzi al-Tusi Veblen Virasena Yang Hui al-Yasamin Zhang List of geometers by period BCE Ahmes Baudhayana Manava Pythagoras Euclid Archimedes Apollonius 1–1400s Zhang Kātyāyana Aryabhata Brahmagupta Virasena Alhazen Sijzi Khayyám al-Yasamin al-Tusi Yang Hui Parameshvara 1400s–1700s Jyeṣṭhadeva Descartes Pascal Huygens Minggatu Euler Sakabe Aida 1700s–1900s Gauss Lobachevsky Bolyai Riemann Klein Poincaré Hilbert Minkowski Cartan Veblen Coxeter Chern Present day Atiyah Gromov vte In physics and mathematics, the dimension of a mathematical space (or object) is informally defined as the minimum number of coordinates needed to specify any point within it.[1][2] Thus, a line has a dimension of one (1D) because only one coordinate is needed to specify a point on it – for example, the point at 5 on a number line. A surface, such as the boundary of a cylinder or sphere, has a dimension of two (2D) because two coordinates are needed to specify a point on it – for example, both a latitude and longitude are required to locate a point on the surface of a sphere. A two-dimensional Euclidean space is a two-dimensional space on the plane. The inside of a cube, a cylinder or a sphere is three-dimensional (3D) because three coordinates are needed to locate a point within these spaces. In classical mechanics, space and time are different categories and refer to absolute space and time. That conception of the world is a four-dimensional space but not the one that was found necessary to describe electromagnetism. The four dimensions (4D) of spacetime consist of events that are not absolutely defined spatially and temporally, but rather are known relative to the motion of an observer. Minkowski space first approximates the universe without gravity; the pseudo-Riemannian manifolds of general relativity describe spacetime with matter and gravity. 10 dimensions are used to describe superstring theory (6D hyperspace + 4D), 11 dimensions can describe supergravity and M-theory (7D hyperspace + 4D), and the state-space of quantum mechanics is an infinite-dimensional function space. The concept of dimension is not restricted to physical objects. High-dimensional spaces frequently occur in mathematics and the sciences. They may be Euclidean spaces or more general parameter spaces or configuration spaces such as in Lagrangian or Hamiltonian mechanics; these are abstract spaces, independent of the physical space. In mathematics, the dimension of an object is, roughly speaking, the number of degrees of freedom of a point that moves on this object. In other words, the dimension is the number of independent parameters or coordinates that are needed for defining the position of a point that is constrained to be on the object. For example, the dimension of a point is zero; the dimension of a line is one, as a point can move on a line in only one direction (or its opposite); the dimension of a plane is two, etc. The dimension is an intrinsic property of an object, in the sense that it is independent of the dimension of the space in which the object is or can be embedded. For example, a curve, such as a circle, is of dimension one, because the position of a point on a curve is determined by its signed distance along the curve to a fixed point on the curve. This is independent from the fact that a curve cannot be embedded in a Euclidean space of dimension lower than two, unless it is a line. Similarly, a surface is of dimension two, even if embedded in three-dimensional space. The dimension of Euclidean n-space En is n. When trying to generalize to other types of spaces, one is faced with the question "what makes En n-dimensional?" One answer is that to cover a fixed ball in En by small balls of radius ε, one needs on the order of ε−n such small balls. This observation leads to the definition of the Minkowski dimension and its more sophisticated variant, the Hausdorff dimension, but there are also other answers to that question. For example, the boundary of a ball in En looks locally like En-1 and this leads to the notion of the inductive dimension. While these notions agree on En, they turn out to be different when one looks at more general spaces. A tesseract is an example of a four-dimensional object. Whereas outside mathematics the use of the term "dimension" is as in: "A tesseract has four dimensions", mathematicians usually express this as: "The tesseract has dimension 4", or: "The dimension of the tesseract is 4". Although the notion of higher dimensions goes back to René Descartes, substantial development of a higher-dimensional geometry only began in the 19th century, via the work of Arthur Cayley, William Rowan Hamilton, Ludwig Schläfli and Bernhard Riemann. Riemann's 1854 Habilitationsschrift, Schläfli's 1852 Theorie der vielfachen Kontinuität, and Hamilton's discovery of the quaternions and John T. Graves' discovery of the octonions in 1843 marked the beginning of higher-dimensional geometry. The rest of this section examines some of the more important mathematical definitions of dimension. Main article: Dimension (vector space) The dimension of a vector space is the number of vectors in any basis for the space, i.e. the number of coordinates necessary to specify any vector. This notion of dimension (the cardinality of a basis) is often referred to as the Hamel dimension or algebraic dimension to distinguish it from other notions of dimension. For the non-free case, this generalizes to the notion of the length of a module. The uniquely defined dimension of every connected topological manifold can be calculated. A connected topological manifold is locally homeomorphic to Euclidean n-space, in which the number n is the manifold's dimension. For connected differentiable manifolds, the dimension is also the dimension of the tangent vector space at any point. In geometric topology, the theory of manifolds is characterized by the way dimensions 1 and 2 are relatively elementary, the high-dimensional cases n > 4 are simplified by having extra space in which to "work"; and the cases n = 3 and 4 are in some senses the most difficult. This state of affairs was highly marked in the various cases of the Poincaré conjecture, in which four different proof methods are applied. Main article: Complex dimension The complex plane can be mapped to the surface of a sphere, called the Riemann sphere, with the complex number 0 mapped to one pole, the unit circle mapped to the equator, and a point at infinity mapped to the other pole. The dimension of a manifold depends on the base field with respect to which Euclidean space is defined. While analysis usually assumes a manifold to be over the real numbers, it is sometimes useful in the study of complex manifolds and algebraic varieties to work over the complex numbers instead. A complex number (x + iy) has a real part x and an imaginary part y, in which x and y are both real numbers; hence, the complex dimension is half the real dimension. Conversely, in algebraically unconstrained contexts, a single complex coordinate system may be applied to an object having two real dimensions. For example, an ordinary two-dimensional spherical surface, when given a complex metric, becomes a Riemann sphere of one complex dimension.[3] Main article: Dimension of an algebraic variety The dimension of an algebraic variety may be defined in various equivalent ways. The most intuitive way is probably the dimension of the tangent space at any Regular point of an algebraic variety. Another intuitive way is to define the dimension as the number of hyperplanes that are needed in order to have an intersection with the variety that is reduced to a finite number of points (dimension zero). This definition is based on the fact that the intersection of a variety with a hyperplane reduces the dimension by one unless if the hyperplane contains the variety. An algebraic set being a finite union of algebraic varieties, its dimension is the maximum of the dimensions of its components. It is equal to the maximal length of the chains V 0 ⊊ V 1 ⊊ ··· ⊊ V d {\displaystyle V_{0}\subseteq V_{1}\subseteq \cdots \subseteq V_{d}} of sub-varieties of the given algebraic set (the length of such a chain is the number of " ⊆ {\displaystyle \subseteq } "). Each variety can be considered as an algebraic stack, and its dimension as variety agrees with its dimension as stack. There are however many stacks which do not correspond to varieties, and some of these have negative dimension. Specifically, if V is a variety of dimension m and G is an algebraic group of dimension n acting on V, then the quotient stack [V/G] has dimension m − n.[4] The Krull dimension of a commutative ring is the maximal length of chains of prime ideals in it, a chain of length n being a sequence P 0 ⊊ P 1 ⊊ ··· ⊊ P n {\displaystyle {\mathcal {P}}_{0}\subseteq {\mathcal {P}}_{1}\subseteq \cdots \subseteq {\mathcal {P}}_{n}} of prime ideals related by inclusion. It is strongly related to the dimension of an algebraic variety, because of the natural correspondence between sub-varieties and prime ideals of the ring of the polynomials on the variety. For an algebra over a field, the dimension as vector space is finite if and only if its Krull dimension is 0. For any normal topological space X, the Lebesgue covering dimension of X is defined to be the smallest integer n for which the following holds: any open cover has an open refinement (a second open cover in which each element is a subset of an element in the first cover) such that no point is included in more than n + 1 elements. In this case dim X = n. For X a manifold, this coincides with the dimension mentioned above. If no such integer n exists, then the dimension of X is said to be infinite, and one writes dim X = ∞. Moreover, X has dimension −1, i.e. dim X = −1 if and only if X is empty. This definition of covering dimension can be extended from the class of normal spaces to all Tychonoff spaces merely by replacing the term "open" in the definition by the term "functionally open". An inductive dimension may be defined inductively as follows. Consider a discrete set of points (such as a finite collection of points) to be 0-dimensional. By dragging a 0-dimensional object in some direction, one obtains a 1-dimensional object. By dragging a 1-dimensional object in a new direction, one obtains a 2-dimensional object. In general, one obtains an (n + 1)-dimensional object by dragging an n-dimensional object in a new direction. The inductive dimension of a topological space may refer to the small inductive dimension or the large inductive dimension, and is based on the analogy that, in the case of metric spaces, (n + 1)-dimensional balls have n-dimensional boundaries, permitting an inductive definition based on the dimension of the boundaries of open sets. Moreover, the boundary of a discrete set of points is the empty set, and therefore the empty set can be taken to have dimension −1.[5] Similarly, for the class of CW complexes, the dimension of an object is the largest n for which the n-skeleton is nontrivial. Intuitively, this can be described as follows: if the original space can be continuously deformed into a collection of higher-dimensional triangles joined at their faces with a complicated surface, then the dimension of the object is the dimension of those triangles.[citation needed] See also: dimension of a scheme The Hausdorff dimension is useful for studying structurally complicated sets, especially fractals. The Hausdorff dimension is defined for all metric spaces and, unlike the dimensions considered above, can also have non-integer real values.[6] The box dimension or Minkowski dimension is a variant of the same idea. In general, there exist more definitions of fractal dimensions that work for highly irregular sets and attain non-integer positive real values. Every Hilbert space admits an orthonormal basis, and any two such bases for a particular space have the same cardinality. This cardinality is called the dimension of the Hilbert space. This dimension is finite if and only if the space's Hamel dimension is finite, and in this case the two dimensions coincide. Classical physics theories describe three physical dimensions: from a particular point in space, the basic directions in which we can move are up/down, left/right, and forward/backward. Movement in any other direction can be expressed in terms of just these three. Moving down is the same as moving up a negative distance. Moving diagonally upward and forward is just as the name of the direction implies i.e., moving in a linear combination of up and forward. In its simplest form: a line describes one dimension, a plane describes two dimensions, and a cube describes three dimensions. (See Space and Cartesian coordinate system.) Number of dimensions Example co-ordinate systems 1 Number line Angle 2 Cartesian (two-dimensional) Polar Latitude and longitude 3 Cartesian (three-dimensional) Cylindrical Spherical A temporal dimension, or time dimension, is a dimension of time. Time is often referred to as the "fourth dimension" for this reason, but that is not to imply that it is a spatial dimension[citation needed]. A temporal dimension is one way to measure physical change. It is perceived differently from the three spatial dimensions in that there is only one of it, and that we cannot move freely in time but subjectively move in one direction. The equations used in physics to model reality do not treat time in the same way that humans commonly perceive it. The equations of classical mechanics are symmetric with respect to time, and equations of quantum mechanics are typically symmetric if both time and other quantities (such as charge and parity) are reversed. In these models, the perception of time flowing in one direction is an artifact of the laws of thermodynamics (we perceive time as flowing in the direction of increasing entropy). The best-known treatment of time as a dimension is Poincaré and Einstein's special relativity (and extended to general relativity), which treats perceived space and time as components of a four-dimensional manifold, known as spacetime, and in the special, flat case as Minkowski space. Time is different from other spatial dimensions as time operates in all spatial dimensions. Time operates in the first, second and third as well as theoretical spatial dimensions such as a fourth spatial dimension. Time is not however present in a single point of absolute infinite singularity as defined as a geometric point, as an infinitely small point can have no change and therefore no time. Just as when an object moves through positions in space, it also moves through positions in time. In this sense the force moving any object to change is time.[7][8][9] In physics, three dimensions of space and one of time is the accepted norm. However, there are theories that attempt to unify the four fundamental forces by introducing extra dimensions/hyperspace. Most notably, superstring theory requires 10 spacetime dimensions, and originates from a more fundamental 11-dimensional theory tentatively called M-theory which subsumes five previously distinct superstring theories. Supergravity theory also promotes 11D spacetime = 7D hyperspace + 4 common dimensions. To date, no direct experimental or observational evidence is available to support the existence of these extra dimensions. If hyperspace exists, it must be hidden from us by some physical mechanism. One well-studied possibility is that the extra dimensions may be "curled up" (compactified) at such tiny scales as to be effectively invisible to current experiments. Illustration of a Calabi–Yau manifold In 1921, Kaluza–Klein theory presented 5D including an extra dimension of space. At the level of quantum field theory, Kaluza–Klein theory unifies gravity with gauge interactions, based on the realization that gravity propagating in small, compact extra dimensions is equivalent to gauge interactions at long distances. In particular when the geometry of the extra dimensions is trivial, it reproduces electromagnetism. However, at sufficiently high energies or short distances, this setup still suffers from the same pathologies that famously obstruct direct attempts to describe quantum gravity. Therefore, these models still require a UV completion, of the kind that string theory is intended to provide. In particular, superstring theory requires six compact dimensions (6D hyperspace) forming a Calabi–Yau manifold. Thus Kaluza-Klein theory may be considered either as an incomplete description on its own, or as a subset of string theory model building. In addition to small and curled up extra dimensions, there may be extra dimensions that instead are not apparent because the matter associated with our visible universe is localized on a (3 + 1)-dimensional subspace. Thus, the extra dimensions need not be small and compact but may be large extra dimensions. D-branes are dynamical extended objects of various dimensionalities predicted by string theory that could play this role. They have the property that open string excitations, which are associated with gauge interactions, are confined to the brane by their endpoints, whereas the closed strings that mediate the gravitational interaction are free to propagate into the whole spacetime, or "the bulk". This could be related to why gravity is exponentially weaker than the other forces, as it effectively dilutes itself as it propagates into a higher-dimensional volume. Some aspects of brane physics have been applied to cosmology. For example, brane gas cosmology[10][11] attempts to explain why there are three dimensions of space using topological and thermodynamic considerations. According to this idea it would be since three is the largest number of spatial dimensions in which strings can generically intersect. If initially there are many windings of strings around compact dimensions, space could only expand to macroscopic sizes once these windings are eliminated, which requires oppositely wound strings to find each other and annihilate. But strings can only find each other to annihilate at a meaningful rate in three dimensions, so it follows that only three dimensions of space are allowed to grow large given this kind of initial configuration. Extra dimensions are said to be universal if all fields are equally free to propagate within them. Main article: Geometric primitive Several types of digital systems are based on the storage, analysis, and visualization of geometric shapes, including illustration software, Computer-aided design, and Geographic information systems. Different vector systems use a wide variety of data structures to represent shapes, but almost all are fundamentally based on a set of geometric primitives corresponding to the spatial dimensions:[12] Point (0-dimensional), a single coordinate in a Cartesian coordinate system. Line or Polyline (1-dimensional) usually represented as an ordered list of points sampled from a continuous line, whereupon the software is expected to interpolate the intervening shape of the line as straight- or curved-line segments. Polygon (2-dimensional) usually represented as a line that closes at its endpoints, representing the boundary of a two-dimensional region. The software is expected to use this boundary to partition 2-dimensional space into an interior and exterior. Surface (3-dimensional) represented using a variety of strategies, such as a polyhedron consisting of connected polygon faces. The software is expected to use this surface to partition 3-dimensional space into an interior and exterior. Frequently in these systems, especially GIS and Cartography, a representation of a real-world phenomenon may have a different (usually lower) dimension than the phenomenon being represented. For example, a city (a two-dimensional region) may be represented as a point, or a road (a three-dimensional volume of material) may be represented as a line. This dimensional generalization correlates with tendencies in spatial cognition. For example, asking the distance between two cities presumes a conceptual model of the cities as points, while giving directions involving travel "up," "down," or "along" a road imply a one-dimensional conceptual model. This is frequently done for purposes of data efficiency, visual simplicity, or cognitive efficiency, and is acceptable if the distinction between the representation and the represented is understood but can cause confusion if information users assume that the digital shape is a perfect representation of reality (i.e., believing that roads really are lines). Degrees of freedom in mechanics in physics and chemistry in statistics Exterior dimension Hurst exponent Isoperimetric dimension Metric dimension Order dimension q-dimension Fractal (q = 1) Correlation (q = 2) 0 dimension Point Zero-dimensional space Integer 1 dimension Line Curve Graph (combinatorics) Real number Length 2 dimensions Plane Surface Polygon Net Complex number Cartesian coordinate system List of uniform tilings Area 3 dimensions Platonic solid Polyhedron Stereoscopy (3-D imaging) 3-manifold Axis of rotation Knots Skew lines Skew polygon Volume 4 dimensions Spacetime Fourth spatial dimension Convex regular 4-polytope Quaternion 4-manifold Polychoron Rotations in 4-dimensional Euclidean space Fourth dimension in art Fourth dimension in literature 5 dimensions Kaluza–Klein theory 8 dimensions Octonion 10 dimensions Superstring theory 11 dimensions M-theory 12 dimensions F-theory 16 dimensions Sedenion 26 dimensions Bosonic string theory 32 dimensions Trigintaduonion Higher dimensions Vector space Plane of rotation Curse of dimensionality String theory Infinite Hilbert space Function space Dimension (data warehouse) Dimension tables Dimensional analysis Hyperspace (disambiguation) Intrinsic dimension Multidimensional analysis Space-filling curve Mean dimension Flatland ^ "Curious About Astronomy". 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Aspect; element: "He's a good newsman, and he has that extra dimension" (William S. Paley).4. Mathematics a. The least number of independent coordinates required to specify uniquely the points in a space.b. The range of such a coordinate.5. Physics A physical property, such as mass, distance, time, or a combination thereof, regarded as a fundamental measure of a physical quantity: Velocity has the dimension of distance divided by time.6. A realm of existence, as in a work of fiction, that is physically separate from another such realm: "Although it tells a grounded, political story free from aliens and alternate dimensions, the film remains packed to the brim with iconic ... characters." (Conner Schwerdtfeger).tr.v. di·men·sioned, di·men·sion·ing, di·men·sions 1. To cut or shape to specified dimensions.2. To mark with specified dimensions. [Middle English dimensioun, from Latin dīmēnsiō, dīmēnsiōn-, extent, from dīmēnsus, past participle of dīmētīrī, to measure out : dī-, dis-, dis- + mētīrī, to measure; see mē- in Indo-European roots.]di·men′sion·al′i·ty (-shə-nāl′ĭ-tē) n.American Heritage® Dictionary of the English Language, Fifth Edition. Copyright © 2016 by Houghton Mifflin Harcourt Publishing Company. Published by Houghton Mifflin Harcourt Publishing Company. All rights reserved. (dɪˈmɛnʃən) n1. (often plural) a measurement of the size of something in a particular direction, such as the length, width, height, or diameter2. (often plural) scope; size; extent: a problem of enormous dimensions. 3. aspect: a new dimension to politics. 4. (Mathematics) maths the number of coordinates required to locate a point in space5. (General Physics) physics a. the product or the quotient of the fundamental physical quantities (such as mass, length, or time) raised to the appropriate power in a derived physical quantity: the dimensions of velocity are length divided by time. b. the power to which such a fundamental quantity has to be raised in a derived quantityvb (tr) chiefly a. to shape or cut to specified dimensionsb. to mark with specified dimensions[C14: from Old French, from Latin dīmensiō an extent, from dīmētīrī to measure out, from mētīrī]Collins English Dictionary – Complete and Unabridged, 12th Edition 2014 © HarperCollins Publishers 1991, 1994, 1998, 2000, 2003, 2006, 2007, 2009, 2011, 2014 (dɪˈmɛn ʃən, daɪ-) n. 1. a. a property of space; extension in a given direction: A straight line has one dimension, a parallelogram has two dimensions, and a parallelepiped has three dimensions. b. the generalization of this property to spaces with curvilinear extension, as the surface of a sphere. c. a magnitude that serves to define the location of an element within a given set, as of a point on a line or an event in space-time. 2. Usu., dimensions. a. measurement in length, width, and thickness. b. scope: the dimensions of a problem. 3. magnitude; size: Matter has dimension. 4. an aspect or factor; side. 5. dimensions, bodily measurements. v.t. 6. to shape or fashion to the desired dimensions. 7. to indicate the dimensions on (a diagram or drawing). [1375–1425; < Latin dīmensiō a measuring, derivative of dīmētīrī to measure out =dī- di-2 + mētīrī to measure] Random House Kernerman Webster's College Dictionary, © 2010 K Dictionaries Ltd. Copyright 2005, 1997, 1991 by Random House, Inc. All rights reserved. (dī-mĕn′shən)1. Mathematics a. Any one of the three physical or spatial properties of length, area, and volume. In geometry, a point is said to have zero dimension; a figure having only length, such as a line, has one dimension; a plane or surface, two dimensions; and a figure having volume, three dimensions. The fourth dimension is often said to be time, as in the theory of general relativity. Higher dimensions can be dealt with mathematically but cannot be represented visually.b. The measurement of a length, width, or thickness: The dimensions of the window are 2 feet by 4 feet.2. A unit, such as mass, time, or charge, associated with a physical quantity and used as the basis for other measurements, such as acceleration.The American Heritage® Student Science Dictionary, Second Edition. Copyright © 2014 by Houghton Mifflin Harcourt Publishing Company. Published by Houghton Mifflin Harcourt Publishing Company. All rights reserved.Past participle: dimensionedGerund: dimensioningImperativePresentPreteritePresent ContinuousPresent PerfectPast ContinuousPast PerfectFutureFuture PerfectFuture ContinuousPresent Perfect ContinuousFuture Perfect ContinuousPast Perfect ContinuousConditionalPast ConditionalImperativedimensiondimensionCollins English Verb Tables © HarperCollins Publishers 2011 Noun1.dimension - the magnitude of something in a particular direction (especially length or width or height)magnitude - the property of relative size or extent (whether large or small); "they tried to predict the magnitude of the explosion"; "about the magnitude of a small pea"thickness - the dimension through an object as opposed to its length or widthtenuity, thinness, slenderness - relatively small dimension through an object as opposed to its length or width; "the tenuity of a hair"; "the thinness of a rope"length - the linear extent in space from one end to the other; the longest dimension of something that is fixed in place; "the length of the table was 5 feet"width, breadth - the extent of something from side to sideheight, tallness - the vertical dimension of extension; distance from the base of something to the topthird dimension - the dimension whereby a solid object differs from a two-dimensional drawing of itfourth dimension, time - the fourth coordinate that is required (along with three spatial dimensions) to specify a physical event2.dimension - a construct whereby objects or individuals can be distinguished; "self-confidence is not an endearing property"lineament, character, quality - a characteristic property that defines the apparent individual nature of something; "each town has a quality all its own"; "the radical character of our demands"characteristic, feature - a prominent attribute or aspect of something; "the map showed roads and other features"; "generosity is one of his best characteristics"feature of speech, feature - (linguistics) a distinctive characteristic of a linguistic unit that serves to distinguish it from other units of the same kind3.dimension - one of three Cartesian coordinates that determine a position in spaceCartesian coordinate - one of the coordinates in a system of coordinates that locates a point on a plane or in space by its distance from two lines or three planes respectively; the two lines or the intersections of the three planes are the coordinate axes4.dimension - magnitude or extent; "a building of vast proportions"magnitude - the property of relative size or extent (whether large or small); "they tried to predict the magnitude of the explosion"; "about the magnitude of a small pea"Verb1.dimension - indicate the dimensions on; "These techniques permit us to dimension the human heart"mark - designate as if by a mark; "This sign marks the border"2.dimension - shape or form to required dimensionsshape, form - give shape or form to; "shape the dough"; "form the young child's character"Based on WordNet 3.0, Farlex clipart collection. © 2003-2012 Princeton University, Farlex Inc.nounplural noun1. proportions, range, size, scale, measure, volume, capacity, bulk, measurement, amplitude, bigness the grandiose dimensions of the roomCollins Thesaurus of the English Language – Complete and Unabridged 2nd Edition. 2002 © HarperCollins Publishers 1995, 2002noun The American Heritage® Roget's Thesaurus. Copyright © 2013, 2014 by Houghton Mifflin Harcourt Publishing Company. Published by Houghton Mifflin Harcourt Publishing Company. All rights reserved. dimensiondimensionnertailleampleurdimensionetridimensionalebidimensionaleCollins Spanish Dictionary - Complete and Unabridged 8th Edition 2005 © William Collins Sons & Co. Ltd. 1971, 1988 © HarperCollins Publishers 1992, 1993, 1996, 1997, 2000, 2003, 2005 [dɪˈmɛnʃən daɪˈmɛnʃən] n (= size, scale) the dimensions of sth (= size) → les dimensions de qch (= scale) → l'ampleur de qch (= length and breadth) → les dimensions de qch in three dimensions → en trois dimensionsCollins English/French Electronic Resource. © HarperCollins Publishers 2005Collins German Dictionary – Complete and Unabridged 7th Edition 2005. © William Collins Sons & Co. Ltd. 1980 © HarperCollins Publishers 1991, 1997, 1999, 2004, 2005, 2007Collins Italian Dictionary 1st Edition © HarperCollins Publishers 1995 (diˈmenʃən) , (daiˈmenʃən) noun a measurement in length, breadth, or thickness. The dimensions of the box are 20 cm by 10 cm by 4 cm. dimensie, omvang بُعْد измерение dimensão rozměr das Maß omfang; størrelse διάστασηdimensión mõõde بعد؛ فراموش mitta dimensionמידה ▯▯▯▯ dimenzija dimenzió matra, dimensi ummál dimensione 寸法 matmuo dimensija; izmērs luas afmetingdimensjon, målwymiar اندازه, اهمیت: قد, لوی والی: حجم, پریروالی, سوروالی: dimensão dimensiune размеры rozmer mera dimenzija mått, dimension ▯▯▯▯▯▯▯▯▯ boyut 尺寸 вимір; розміри کی پیمائش kích thước 尺寸-dimensional of (a certain number of) dimensions. a three-dimensional figure. dimensionaal ذو (ثلاثة) أبعاد който има измерения dimensional -rozměrný dimensional -dimensional ميوتميلين بعدى -ulotteinen à (...) dimension(s) מימדי ▯▯▯▯▯▯ ▯▯▯▯ dimenzionalan dimenzióés dimensi með svo og svo margar víddir dimensionale - 次元の - matmenų -dimensiju dimensi -dimensional -dimensjonal -wymiarowy بعدى dimensional dimensiune -мерный -rozmerný -dimenzionalen dimenzionalan dimensionell ▯▯▯▯▯▯▯▯▯▯▯▯▯ ...boyutlu 維數 , 維度 такий, що має стільки-то вимірів متعلق ابعاد سں (tùr ghép) số chiều ...維的 , 维数 Kernerman English Multilingual Dictionary © 2006-2013 K Dictionaries Ltd. → بُعْد rozměr dimension Dimension διάσταση dimensión ulottuvuus dimension dimenzija dimensione 寸法 ▯▯ dimensie dimensjon wymiar dimensão измерение dimension ▯▯▯▯ boyut kích thước 尺寸Multilingual Translator © HarperCollins Publishers 2009n. dimensión, medida de un cuerpo. English-Spanish Medical Dictionary © Farlex 2012English-Spanish/Spanish-English Medical Dictionary Copyright © 2006 by The McGraw-Hill Companies, Inc. All rights reserved. Want to thank TFD for its existence? Tell a friend about us, add a link to this page, or visit the webmaster's page for free fun content. Link to this page: `Really this is what is meant by the Fourth Dimension, though some people who talk about the Fourth Dimension do not know they mean it.`But,' said the Medical Man, staring hard at a coal in the fire, `if Time is really only a fourth dimension of Space, why is it, and why has it always been, regarded as something different?IN PARTICULAR This Work Is Dedicated By A Humble Native Of Flatland In the Hope that Even as he was Initiated into the Mysteries OF THREE DIMENSIONS Having been previously conversant With ONLY TWO So the Citizens of that Celestial Region May aspire yet higher and higher To the Secrets of FOUR FIVE or EVEN SIX Dimensions Thereby contributing To the Enlargement of THE IMAGINATION And the possible Development Of that most and excellent GIFT of MODESTY Among the Superior Races Of SOLID HUMANITYAt the outset, in order not to give the balloon too ponderous dimensions, he had decided to fill it with hydrogen gas, which is fourteen and a half times lighter than common air.Begin again!" "As I was remarking," chanted the obedient Lord Chancellor, "this portentous movement has already assumed the dimensions of a Revolution!"Nevertheless, after mature consideration, it has appeared to me that the question of the projectile must take precedence of that of the cannon, and that the dimensions of the latter must necessarily depend on those of the former."To this catalogue of circumstances that tend to the amelioration of popular systems of civil government, I shall venture, however novel it may appear to some, to add one more, on a principle which has been made the foundation of an objection to the new Constitution; I mean the ENLARGEMENT of the ORBIT within which such systems are to revolve, either in respect to the dimensions of a single State or to the consolidation of several smaller States into one great Confederacy.Taking into consideration the mean of observations made at divers times-- rejecting the timid estimate of those who assigned to this object a length of two hundred feet, equally with the exaggerated opinions which set it down as a mile in width and three in length--we might fairly conclude that this mysterious being surpassed greatly all dimensions admitted by the learned ones of the day, if it existed at all.All the distances and all the dimensions about Versailles are vast.And beginning with the French Revolution the old inadequately large group was destroyed, as well as the old habits and traditions, and step by step a group was formed of larger dimensions with new customs and traditions, and a man was produced who would stand at the head of the coming movement and bear the responsibility for all that had to be done.In contour and markings it was not unlike the noblest of the Bengals of our own world, but as its dimensions were exaggerated to colossal proportions so too were its colorings exaggerated.This distinguished scientist has expounded his views in a book entitled "Verschwinden und Seine Theorie," which has attracted some attention, "particularly," says one writer, "among the followers of Hegel, and mathematicians who hold to the actual existence of a so- called non-Euclidean space--that is to say, of space which has more dimensions than length, breadth, and thickness--space in which it would be possible to tie a knot in an endless cord and to turn a rubber ball inside out without 'a solution of its continuity,' or in other words, without breaking or cracking it." enlarge imagea measurement in space, for example how high, wide or long something isWe measured the dimensions of the kitchen.computer design tools that work in three dimensions see also fourth dimensionExtra ExamplesDespite the unit's compact dimensions, there's still plenty of room for expansion.It is important to measure the exact dimensions of the room.The fourth dimension, time, is also finite in extent.a model in three dimensionsa structure of considerable dimensionsThe images can be viewed in three dimensions using these special glasses.The rectangles are arranged with their longer dimension running from top to bottom.Topics Colours and Shapesc1, Maths and measurementc1Oxford Collocations Dictionaryadjectiveverb + dimensionphrasesin two dimensionsin three dimensionsSee full entry [usually plural] the size and extent of a situationa problem of considerable dimensions an aspect, or way of looking at or thinking about somethingHer job added a new dimension to her life.We should also consider the social dimension of unemployment.Extra ExamplesCommunication via the internet gives an important international dimension to the project.Her illness adds an extra dimension to the problem.In looking at population ageing we will consider two distinct dimensions.The affair had a different dimension now.The crisis acquired a new dimension.There is a wider dimension to the question.the spiritual dimension to our livesOxford Collocations Dictionaryadjectiveaddedadditionaldifferent...verb + dimensionaddbringgive (something)...prepositionSee full entry Word Originlate Middle English (in sense (1)): via Old French from Latin dimensio(n-), from dimetiri ‘measure out’. Sense (2) dates from the 1920s.See dimension in the Oxford Advanced American DictionarySee dimension in the Oxford Learner's Dictionary of Academic English 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 ter