[hide]



Main page Featured content Current events
Random article
Donate to Wikipe
Wikipedia store

Help About Wikipedia Community porta Recent changes Contact page

What links here Related changes Upload file Special pages Permanent link Page information Wikidata item

Cite this page

In other projects Wikimedia Commons

Create a book Download as PDF Printable version

EANTYIKÓ Español ८шյերեն हिन्दी עברית

Article Talk Read Edit View history Search Wikipedia Q

## 12 (number)

From Wikipedia, the free encyclopedia

This article is about the number. For the year, see AD 12. For other uses of "twelve", see 12 (disambiguation).



12 (twelve) is the natural number following 11 and preceding 13. The product of the first 3 factorials, twelve is a superior highly composite number, divisible by 2, 3, 4, and 6.

It is approximately the number of full lunations of the moon in a year, and the number of years for a full cycle of Jupiter, which was historically considered the brightest "wandering star", it is central to many systems of timekeeping, including the Western calendar and units of time of day, and frequently appears in the world's major religions.

#### 1.1 Written representation 2 Mathematical properties 2.1 List of basic calculations 3 In nature 4 Religion 4.1 Ancient Greek religion 4.2 Christianity 4.3 Hinduism 4.4 Others 5 Timekeeping 6 In numeral systems 7 In science 8 In sports 9 In technology 10 In the arts 10.1 Film 10.2 Television 10.3 Theatre 10.4 Literature 10.5 Music 10.5.1 Music theory 10.5.2 Pop music 10.6 Art theory 10.7 Games 11 In other fields 12 See also

← 11	12	13 →
← 10 11 12 1	3 14 15 16 17 18	19 →
	umbers — Intege 0 40 50 60 70 80	
Cardinal	twelve	BU
Ordinal	12th	
	(twelfth)	
Numeral system	duodecir	nal
Factorization	$2^2 \times 3$	
Divisors	1, 2, 3, 4	, 6, 12
Greek numeral	IB"	
Roman numeral	XII	
Greek prefix	dodeca-	
Latin prefix	duodeca	
Binary	11002	
Ternary	1103	
Quaternary	304	
Quinary	225	
Senary	206	
Octal	148	
Duodecimal	1012	
Hexadecimal	C <sub>16</sub>	
Vigesimal	C <sub>20</sub>	
Base 36	C <sub>36</sub>	

Mathematical pr	operties
φ(12) = 4	τ(12) = 6
$\sigma(12) = 28$	π(12) = 5
$\mu(12) = 0$	M(12) = -2

# 15 External links Name [edit]

13 Notes 14 References 14.2 Sources

Twelve is the largest number with a single-syllable name in English. Early Germanic numbers have been theorized to have been non-decimal; evidence includes the unusual phrasing of eleven and twelve, the former use of "hundred" to refer to groups of 120, and the presence of glosses such as "tentywise" or "ten-count" in medieval texts showing that writers could not presume their readers would normally understand them that way.[112(3]] Such uses gradually disappeared with the introduction of Arabic num

It derives from the Old English fivelf and fuelf, first attested in the 10th-century Lindisfarne Gospels' Book of John [Inde 1][5] It has cognates in every Germanic language (e.g. German zwölf), whose Proto-Germanic ancestor has been reconstructed as "twalibli...., from "twa ("two") and suffix "-W- or "-lib- of uncertain meaning, [5] it is sometimes compared with the Lithuanian dvylika, although -lika is used as the suffix for all numbers from 11 to 19 (analogous to "-teen"), [5] Every other Indo-European language instead uses a form of "1 such as the Latin duodecim. [5] The usual ordinal form is "twelfth" but "dozenth" or "duodecimal" (from the Latin word) is also used in some contexts, particularly base-12 numeration. Similarly, a group of twelve things is usually a "dozen" but may also be referred to as a "dodecad" or "duodecad". The adjective referring to a group of twelve is "duodecuple".

As with eleven, [6] the earliest forms of twelve are often considered to be connected with Proto-Germanic "liban or development. [5] The suffix \*-lif- has also been connected with reconstructions of the Proto-Germanic for ten. [6][7]

While, as mentioned above, 12 has its own name in Germanic languages such as English, German, and Swedish. It is a compound number in many other languages, e.g. Italian dodici (but in Spanish and Portuguese, 16, and in French, 17 is the first compound number), <sup>[SS]</sup> Japanese += *jūni*.[

In prose writing, twelve, being the last single-syllable numeral, is sometimes taken as the last number to be written as a word, and 13 the first to be written using digits. This is not a binding rule, and in English language tradition, it is sometimes recommended to spell out numbers up to and including either rine, (en or twelve, or even inhely-rine or one hundred. Another system spells out all numbers written in one or two words (sixteen, twenty-seven, lifteen thousand, but 372 or 15,007). Edition the widely followed (but unofficial) rule of spelling out numbers up to twelve (zwólf). The Duden (the German standard dictionary) mentions this rule as outdated.

## Mathematical properties [edit]

Twelve is a composite number, the smallest number with exactly six divisors, its divisors being 1, 2, 3, 4, 6 and 12. Twelve is also a highly composite number, the next one being twenty-four. [8]

Twelve is the smallest abundant number, since it is the smallest integer for which the sum of its proper divisors (1 + 2 + 3 + 4 + 6 = 16) is greater than itself. Twelve is a sublime number, a number that has a perfect number of divisors, and the sum of its divisors is also a perfect number. [9] Since there is a subset of 12's proper divisors that add up to 12 (all of them but with 4 excluded), 12 is a semiperfect number.

If an odd perfect number is of the form 12k + 1, it has at least twelve distinct prime factors.

A twelve-sided polygon is a dodecagon. A twelve-faced polyhedron is a dodecadedron, Regular cubes and octahedrons both have 12 edges, while regular icosahedrons have 12 vertices. Twelve is a pentagonal number. The densest three-dimensional lattice sphere packing has each sphere touching 12 others, and this is almost certainly true for any arrangement of spheres (the Kepler conjecture). Twelve is also the kissing number in three dimensions.

Twelve is the smallest weight for which a cusp form exists. This cusp form is the discriminant \( \( \) (q) whose Fourier coefficients are given by the Ramanujan r-function and which is (up to a constant multiplier) the 24th power of the Dedekind eta function. This fact is related to a constellation of interesting appearances of the number twelve in mathematics ranging from the value of the Riemann zeta function at -1 i.e.  $\zeta(-1) = -\frac{1}{12}$ , the fact that the abelianization of SL(2,Z) has twelve elements, and even the properties of lattice polygons

There are twelve Jacobian elliptic functions and twelve cubic distance-transitive graphs.

There are 12 Latin squares of size 3 x 3.

The duodecimal system (1210 [twelve] = 1012), which is the use of 12 as a division factor for many ancient and medieval weights and measures, including hours, probably originates from Mesopotamia.

In base thirteen and higher bases (such as hexadecimal), twelve is represented as C. In base 10, the number 12 is a Harshad number.

## List of basic calculations [edit]

Multiplication	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		21	22	23	24	25	50	100	1000
12 × x	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	19	2 204	216	228	240		252	264	276	288	300	600	1200	12000
Division	1		2	3		4	5	6	3	7	8	9	10		11	12	13		14		15	16	3						
12 ÷ x	12	2	6	4	Т	3	2.4	2	1.	714285	1.5	1.3	1.2		1.09	1	0.9230	76 (	0.8571	42	0.8	0.7	5						

x ÷ 12	0.0	83 0.1	6 0.25	0.3 0.416	0.5 0.58	3 0.6 0.75	0.83 0.916	5 1 1.083	1.16 1.2	25 1.3			
Exponentiation	1	2	3	4	5	6	7	8	9	10	11	12	13
12 <sup>x</sup>	12	144	1728	20736	248832	2985984	35831808	429981696	5159780352	61917364224	743008370688	8916100448256	106993205379072
x <sup>12</sup>	1	4096	531441	16777216	244140625	2176782336	13841287201	68719476736	282429536481	1000000000000	3138428376721	8916100448256	23298085122481

## In nature [edit]

Notably, twelve is the number of full lunations in a solar year, and the number of years for a full cycle of Jupiter (the brightest of the ancient "wandering stars"), hence the number of months in a solar calendar, as well as the number of signs in the Western and the Chinese zodiac

# Religion [edit]

The number twelve carries religious, mythological and magical symbolism, generally representing perfection, entirety, or cosmic order in traditions since antiquity.[11]

## Ancient Greek religion [edit]

- The Twelve Olympians are the principal gods of the pantheon, they were preceded by twelve Titans, and Hercules carries out twelve labours.[12]
- . Several sets of twelve cities are identified in history as a dodecapolis, the most familiar being the Etruscan League. In ancient Rome, the twelve lictors carried fasces of twelve rods.

### Christianity [edit]

• The significance is especially pronounced in the Hebrew Bible.

Ishmael - the first-born son of Abraham - has 12 sons/princes (Genesis 25:16), and Jacob also has 12 sons, who are the progenitors of the Twelve Tribes of Israel. [13] This is reflected in Christian tradition, notably in the twelve Apostles. When Judas Iscariot is disgraced, a meeting is held (Acts) to add Saint Matthias to complete the number twelve once more. The Book of Revelation contains much numerical symbolism, and many of the numbers mentioned have 12 as a divisor, 12:16 mentions a woman—interpreted as the people of Israel the Church and the Virgin Mary—wearing a crown of twelve stars (representing each of the twelve tribes of Israel, making a total of 144,000 (which is the square of 12 multiplied by a

- The "Twelve Days of Christmas" count the interval between Christmas and Epiphany. Eastern Orthodoxy observes twelve Great Feasts.
- The number of twelve jurors in jury trials is depicted by Aeschylus in the Eumenides. In the play, the innovation is brought about by the goddess Athena, who summons twelve citizens to sit as jury.

In English Common Law, the tradition of twelve jurors harks back to the 10th-century law code introduced by Aetheired the Unready.

#### Hinduism [edit]

- . There are twelve Jvotirlinga(Self-formed Lingas) of Lord Shiva in Hindu temples across India according to the Shaiva tradition.
- The Sun god Surya has 12 names.
- There are 12 Petals in Anahata or "heart chakra".
- . There are frequently said to be 12 Adityas.

### Others [edit]

• The chief Norse god, Odin, has twelve sons

In the King Arthur Legend, Arthur is said to subdue 12 rebel princes and to win 12 great battles against Saxon invaders.<sup>[14]</sup>

In Twelver Shi'a Islam, there are twelve Imams, legitimate successors of the Islamic prophet, Muhammad, These twelve early leaders of Islam are—Ali, Hasan, Husayn, and nine of Husayn's descendants. Sura 12 in the Quran is sura Yusuf, narrating the story of the sons of

### Timekeeping [edit]

- The lunar year is 12 lunar months, Adding 11 or 12 days completes the solar year. [15]
- Most calendar systems solar or lunar have twelve months in a year.
- The Chinese use a 12-year cycle for time-reckoning called Earthly Branches
- There are twelve hours in a half day, numbered one to twelve for both the ante meridiem (a.m.) and the post meridiem (p.m.). 12:00 p.m. is midday or noon, and 12:00 a.m. is midnight.
- The basic units of time (60 seconds, 60 minutes, 24 hours) are evenly divisible by twelve into smaller units.

### In numeral systems [edit]

۱۲	Arabic	១២	Khmer	<b>Գ</b> Բ	Armenian
১২	Bangla	ΔΙΙ	Attic Greek		
יב	Hebrew	ΛII	Egyptian		
१२	Indian and Nepali (Devanāgarī)	+=	Chinese and Japanese		
கஉ	Tamil	XII Roman and Etr			
மெ	Thai	IIX	Chuvash		
೧೨	Telugu	۱۲	Urdu		
ιβ′	Ionian Greek	ഫവ	Malayalam		

### In science [edit]

- The atomic number of magnesium in the periodic table.
- The Standard Model identifies twelve types of elementary fermions
- . The human body has twelve cranial nerves.
- The duodenum (from Latin duodecim, "twelve") is the first part of the small intestine, that is about twelve inches (30 cm) long. More precisely, this section of the intestine was measured not in inches but in fingerwidths. In fact, in German the name of the duodenum is Zwölffingerdarm and in Dutch the name is twaalfvingerige darm, both meaning "twelve-finger bowel".
- Force 12 on the Beaufort wind force scale corresponds to the maximum wind speed of a hurricane.

## In sports [edit]

- In both soccer and American football, the number 12 can be a symbolic reference to the fans because of the support they give to the 11 players on the field. Texas A&M University reserves the number 12 jersey for a walk-on player who represents the original "12th Man", a fan who was asked to play when the team's reserves were low in a college American football game in 1922. Similarly, Bayern Munich, Hammarby, Feyencoord, Allético Mineiro, Flamengo, Seattle Seahawks, Portsmouth and Cork City do not allow field players to wear the number 12 on their jersey because it is reserved for their supporters.
- . In Canadian football, 12 is the maximum number of players that can be on the field of play for each team at any time.
- In cricket, another sport with eleven players per team, teams may select a "12th man", who may replace an injured player for the purpose of fielding (but not batting or bowling).
- In women's lacrosse, each team has 12 players on the field at any given time, except in penalty situations.
- In rugby league, one of the starting second-row forwards wears the number 12 jersey in most competitions. An exception is in the Super League, which uses static squad numbering,
- In rugby union, one of the starting centres, most often but not always the inside centre, wears the 12 shirt.
- . In an NBA game, a quarter lasts 12 minutes

## In technology [edit]

- ASCII and Unicode code point for form feed.
- The number of function keys on most PC keyboards (F1 through F12).
- The number of keys in any standard digital telephone (1 through 9, 0, \* and #).
- Microsoft's Rich Text Format specification assigns numbers congruent to 12 mod 256 to variants of the French language.

## In the arts [edit]

## Film [edit]

Movies with the number twelve or its variations in their titles include

- 12 Angry Men (1957 and 1997)
- Cheaper by the Dozen Ocean's Twelve
- 12 Monkeys
- The Dirty Dozer
- The Twelve Chairs (1970, 1971 and 1976)
- 12 Rounds
- Twelve
- · Twelve Years a Slave

## Television [edit]

- The number twelve plays a significant role in the television franchise Battlestar Galactica. The characters come from the Twelve Colonies of Kobol and worship the twelve lords of Kobol. In the re-imagined series, there are also twelve models of the humanoid version of Cylons.
- Twelve Angry Men, the original 1954 live performance on the anthology television series Studio One • "Number 12 Looks Just Like You" is an enisode of the television show The Twilight Zone
- Schoolhouse Rock! portrayed an alien child using base-twelve arithmetic in the short "Little Tw
- 12 oz. Mouse was an animated television show on Adult Swim.
- . The News 12 Networks are a group of American regional cable news television channels covering New York, New Jersey, and Connecticut. Les 12 Coups de Midi [ir] is a French game show broadcast on TF1 with Oliver Minne at midday.

## Theatre [edit]

- · Twelfth Night is a comedy by William Shakespeare.
- The Vision of the Twelve Goddesses is a Jacobean masque by Samuel Daniel
- Twelve Angry Men, by Reginald Rose, adapted from his own teleplay (see above).

## Literature [edit]

- The Twelve is a poem by Aleksandr Blok.
- Twelve is a novel by Nick McDonel
- . The Twelve Chairs is a satirical novel by the Soviet authors IIf and Petrov.
- Cheaper by the Dozen is a 1946 novel by Frank Bunker Gilbreth, Jr. and Ernestine Gilbreth Carey.
- . The Twelve Dancing Princesses is a folk tale.

- . The Aeneid, an epic poem by Virgil is divided into two halves composed of twelve books.
- Paradise Lost, an epic poem by John Milton is divided into twelve books perhaps in imitation of the Aeneid.
- Miguel de Cervantes wrote twelve Novelas ejemplares

#### Music [edit]

- Twelve is the number of pitch classes in an octave, not counting the duplicated (octave) pitch. Also, the total number of major keys, (not counting enharmonic equivalents) and the total number of minor keys (also not counting equivalents). This applies only to twelve tone equal temperament, the most common tuning used today in western influenced music.
- The twelfth is the interval of an octave and a fifth. Instruments such as the clarinet which behave as a stopped cylindrical pipe overblow at the twelfth.
- The twelve-tone technique (also dodecaphony) is a method of musical composition devised by Arnold Schoenberg. Music using the technique is called twelve-tone music.
- The Twelve-bar blues is one of the most prominent chord progressions in popular music.
- 12-inch record, see Phonograph record#78 rpm disc sizes.

## Pop music [edit]

Main article: 12 (disambiguation) § Music

- . The 12-inch single is a vinvl record format.
- Twelfth Night is a progressive rock band.
- 12 Play is an R. Kelly album.
- . The Number 12 Looks Like You is a mathcore band.
- "12", a Song from the album Brave Murder Day by Katatonia
- 12 is a studio album by German singer Herbert Grönemeyer
- . Twelve is an album by Patti Smith.
- Twelve Deadly Cyns...and Then Some is an album by Cyndi Lauper
- D12 a rap group also known as the Dirty Dozen.
- 12 Stones is an American Christian rock band.
- "12 Hundred" is a song by band Mushroomhead of their Savior Sorrow album.
- 12 is the 12th studio album by Keller Williams.
- "12" ("Dodeka" in Greek) is one of the most well-known hits by Anna Vissi.
- "Twelve drummers drumming" is the gift on the twelfth day of Christmas in the carol "The Twelve Days of Christmas".
- . Twelve Girls Band are an all female Chinese musical group .
- 12 (American Song Book)is an album by Italian singer Mina.
- Revelation #12 is a song by American rock band Marilyn Mans

• There are twelve basic hues in the color wheel; 3 primary colors (red, yellow, blue), 3 secondary colors (orange, green & purple) and 6 tertiary colors (names for these vary, but are intermediates between the primaries and secondaries)

- . In the game of craps, a dice roll of two sixes (value 12) on the come-out roll constitutes a "craps" and the shooter (dice thrower) loses immediately
- Twelve is a character in the Street Fighter video game series.

#### In other fields [edit]

- There are 12 troy ounces in a troy pound (used for precious metals).
- . In the former British currency system, there were twelve pence in a shilling
- In Greek mythology, the number of Labours of Heracles was increased from ten to make twelve.
- In English, twelve is the number of greatest magnitude that has just one syllable.
- . There are normally twelve pairs of ribs in the human body.
- The Twelve Tables or Lex Duodecim Tabularum, more informally simply Duodecim Tabulae was the ancient legislation underlying Roman law.
- In the United States, twelve people are appointed to sit on a jury for felony trials in all but four states, and in federal and Washington, D.C. courts. The number of jurors gave the title to the play (and subsequent films) Twelve Angry
- Twelve people have walked on Earth's moon.
- The United States of America is divided into twelve Federal Reserve Districts (Boston, New York, Philadelphia, Cleveland, Richmond, Atlanta, Chicago, St. Louis, Minneapolis, Kansas City, Dallas, and San Francisco); American paper currency has serial numbers beginning with one of twelve different letters, A through L, representing the Federal Reserve Bank from which the currency originated.
- . According to UFO conspiracy theory, Majestic 12 is a secret committee, allegedly set up by U.S. President Harry S. Truman to investigate the Roswell UFO incident and cover up future extraterrestrial contact.
- 12 is the number of the French department Aveyron.
- King Arthur's round table had 12 knights plus King Arthur hims
- . 12 inches in a foot.
- Alcoholics Anonymous has 12 steps, 12 traditions and 12 concepts for world service.
- Wilhelm Heinrich Schüßler developed a list of 12 biochemical cell salts, also known as tissue salts.

· The Twelfth

# Notes [edit]

1. ^ Specially, a passage referring to Judas Iscariot as "one of the twelve" (an of ōæm tuelfum).[4]

## Citations [edit]

- 1. A Gordon, E. V. (1957), Introduction to Old Norser, Oxford. England: Claredon Press. pp. 292-293.
- 2. ^ Stevenson, W. H. (December 1899). "The Long Hundred and its Use in England". Archaeological Review. 4 (5): 313–317.

  3. ^ Goodare, Julian (1993). "The Long Hundred in medieval and early modern Scotland" 
  (A) PDF). Proceedings of the Society of
- Antiquaries of Scotland. 123: 395-418.
- 5. A a b c d e f Oxford English Dictionary, 1st ed. "twelve, adj. and n." Oxford University Press (Oxford), 1916.
- 6. ^ a b Oxford English Dictionary, 1st ed. "eleven, adj. and n." Oxford University Press (Oxford), 1891.
- 7. ^ Dantzig, Tobias (1930), Number: The Language of Science.
  8. ^ "Sloane's A002182 : Highly composite numbers" . The On-Line
- Encyclopedia of Integer Sequences. OEIS Foundation. Retrieved 2016-06-01.
- . A "Sloane's A081357 : Sublime numbers" . The On-Line
  Encyclopedia of Integer Sequences. OEIS Foundation. Retrieved 2016-06-01.
- numbers" . The On-Line Encyclopedia of Integer Sequences. OEIS Foundation. Retrieved 2016-06-01.
- Drews (1972), p. 43, n. 10. 12. A Weinreich, Th., "Zwölfgötter", Ausführliches Lexikon der
- Griechischen und Römischen Mythologie, Vol. VI, col. 764-848.
- 13. ^ "And it is thought that there is a special significance in the number twelve. It was typified, we know, by many things in the Old Testament; by the twelve sons of Jacob, by the twelve princes of the children of Israel, by the twelve fountains in Elim, by the twelve stones in Aaron's breast-plate, by the twelve loaves of the shew bread, by the twelve spies sent by Moses, by the twelve stones of which the altar was made, by the twelve stones taken out of Jordan, by the twelve oxen which bare" P. Young, Daily readings for a year (1863), p. 150 d.

12 stars are featured on the Flag of

14. A Benet's Reader's Encyclopedia, 3d ed.

## Sources [edit]

Schwartzman, Steven (1994). The words of mathematics: An etymological dictionary of mathematical terms used in English 👸. The Mathematical Association of America. ISBN 0-88385-511-9

## Journal articles

- Poonen, Biorn: Rodriguez-Villegas, Fernando (March 2000), "Lattice Polygons and the Number 12" (PDF), American Mathematical Monthly, 107 (3): 238-250. Drews, Robert (January 1972). "Light from Anatolia on the Roman Fasces". The American Journal of Philology. 93 (1): 40–51.

## External links [edit]

• & Media related to 12 (number) at Wikimedia Commons

V*T*E	Integers	[hide]
	0s	[hide]
	0 · 1 · 2 · 3 · 4 · 5 · 6 · 7 · 8 · 9	
	10 - 11 - 12 - 13 - 14 - 15 - 16 - 17 - 18 - 19	
	20 - 21 - 22 - 23 - 24 - 25 - 26 - 27 - 28 - 29	
	30 - 31 - 32 - 33 - 34 - 35 - 36 - 37 - 38 - 39	
	40 · 41 · 42 · 43 · 44 · 45 · 46 · 47 · 48 · 49	
	50 - 51 - 52 - 53 - 54 - 55 - 56 - 57 - 58 - 59	
	60 · 61 · 62 · 63 · 64 · 65 · 66 · 67 · 68 · 69	
	70 - 71 - 72 - 73 - 74 - 75 - 76 - 77 - 78 - 79	
	80 · 81 · 82 · 83 · 84 · 85 · 86 · 87 · 88 · 89	
	90 • 91 • 92 • 93 • 94 • 95 • 96 • 97 • 98 • 99	
	100s	[show]
	200s	[show]
	300s	[show]
	400s	[show]
	500s	[show]
	600s	[show]
	700s	[show]
		(4.16.1)

800s [show] 900s [show]

Categories: Integers | Numerology

This page was last edited on 13 December 2019, at 01:49 (UTC).

Text is available under the Creative Commons Attribution-ShareAlike License; additional terms may apply. By using this site, you agree to the Terms of Use and Privacy Policy, Wikipedie® is a registered trademark of the Wikimedia Foundation, Inc., a non-profit organization

Privacy policy About Wikipedia Disclaimers Contact Wikipedia Developers Statistics Cookie statement Mobile view

