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How to count in Yucatec Maya (Màaya t'àan), a Mayan language spoken mainly on the Yucatan Peninsula in Mexico. There endings that are added to the numbers when counting specific things. For example, with inanimate objects you use p'éel, with plants and trees you use kúul and with people and animals you use túul. There are many more, however they are rarely used. Many Yucatec Maya speakers count in Spanish, and those who do use the Yucatec Maya numbers may only count up to 4 in them. If any of the numbers are links, you can hear a recording by clicking on them. If you can provide recordings, please contact me. Numeral Cardinal numbers 0 mix ba'al 1 jun [hun] 2 ka' [kaʔ] 3 óox [óːʃ] 4 kan [kan] 5 jo'o [hoʔo] 6 waak [waːk], wak 7 u'uk [uʔuk] 8 waxak [waˈʃak] 9 bolon [ɓoˈlon], bolom 10 lajun, lahun [laˈhun] 11 buluk [ɓuˈluk] 12 lajka'a, ka'alajun 13 óoxlajun 14 kanlajun 15 jo'olajun 16 waaklajun, waklajun 17 u;uklajun, wuklajun 18 waxaklajun 19 bolonlajun 20 junk'aal 21 jun tu ka'ak'aal 22 ka'a tu ka'ak'aal 23 óox tu ka'ak'aal 24 kan tu ka'ak'aal 25 jo'o tu ka'ak'aal 26 wak tu ka'ak'aal 27 wuk tu ka'ak'aal 28 waxak tu ka'ak'aal 29 bolon tu ka'ak'aal 30 lajun tu ka'ak'aal 40 ka'ak'aal 50 lajun tu yóoxk'aal 60 óoxk'aal 70 lajun tu kank'aal 80 kank'aal 90 lajun tu jo'ok'aal 100 jo'ok'aal 200 lajunk'aal 300 jo'olajunk'aal 400 junk'aax, jumbaak' 8,000 junpik If you would like to make any corrections or additions to this page, or if you can provide recordings, please contact me. Hear some Yucatec Maya numbers and learn about written Mayan numerals: Yucatec_Maya_numerals Information about Yucatec Maya | Phrases | Numbers | Tower of Babel | Books about Mayan on: Amazon.com and Amazon.co.uk [affilate links] Numbers in Mayan languages Achi, Akatek, Awakatek, Ch’ol, Chorti, Chuj, Huasteco, Jakaltek, Kaqchikel, K’iche’, Mam, Poqomam, Poqomchi’, Q’anjob’al, Q’eqchi’, Sakpulktek, Sipakapense, Tektitek, Tzeltal, Tzotzil, Yucatec Maya Numbers in other languages Alphabetical index | Language family index [top] You can support this site by Buying Me A Coffee, and if you like what you see on this page, you can use the buttons below to share it with people you know. If you like this site and find it useful, you can support it by making a donation via PayPal or Patreon, or by contributing in other ways. Omniglot is how I make my living. Note: all links on this site to Amazon.com, Amazon.co.uk and Amazon.fr are affiliate links. This means I earn a commission if you click on any of them and buy something. So by clicking on these links you can help to support this site. [top] Learning Outcomes Become familiar with the history of positional number systems Identify bases that have been used in number systems historically Convert numbers between bases Use two different methods for converting numbers between bases As you might imagine, the development of a base system is an important step in making the counting process more efficient. Our own base-ten system probably arose from the fact that we have 10 fingers (including thumbs) on two hands. This is a natural development. However, other civilizations have had a variety of bases other than ten. For example, the Natives of Queensland used a base-two system, counting as follows: “one, two, two and one, two two’s, much.” Some Modern South American Tribes have a base-five system counting in this way: “one, two, three, four, hand, hand and one, hand and two,” and so on. The Babylonians used a base-sixty (sexigesimal) system. In this chapter, we wrap up with a specific example of a civilization that actually used a base system other than 10. The Mayan civilization is generally dated from 1500 BCE to 1700 CE. The Yucatan Peninsula (see figure 16) in Mexico was the scene for the development of one of the most advanced civilizations of the ancient world. The Mayans had a sophisticated ritual system that was overseen by a priestly class. This class of priests developed a philosophy with time as divine and eternal. The calendar, and calculations related to it, were thus very important to the ritual life of the priestly class, and hence the Mayan people. In fact, much of what we know about this culture comes from their calendar records and astronomy data. Another important source of information on the Mayans is the writings of Father Diego de Landa, who went to Mexico as a missionary in 1549. There were two numeral systems developed by the Mayans—one for the common people and one for the priests. Not only did these two systems use different symbols, they also used different base systems. For the priests, the number system was governed by ritual. The days of the year were thought to be gods, so the formal symbols for the days were decorated heads, like the sample to the left Since the basic calendar was based on 360 days, the priestly numeral system used a mixed base system employing multiples of 20 and 360. This makes for a confusing system, the details of which we will skip. Powers Base-Ten Value Place Name 207 12,800,000,000 Hablat 206 64,000,000 Alau 205 3,200,000 Kinchil 204 160,000 Cabal 203 8,000 Pic 202 400 Bak 201 20 Kal 200 1 Hun The Mayan Number System Instead, we will focus on the numeration system of the “common” people, which used a more consistent base system. As we stated earlier, the Mayans used a base-20 system, called the “vigesimal” system. Like our system, it is positional, meaning that the position of a numeric symbol indicates its place value. In the following table you can see the place value in its vertical format. In order to write numbers down, there were only three symbols needed in this system. A horizontal bar represented the quantity 5, a dot represented the quantity 1, and a special symbol (thought to be a shell) represented zero. The Mayan system may have been the first to make use of zero as a placeholder/number. The first 20 numbers are shown in the table to the right. Unlike our system, where the ones place starts on the right and then moves to the left, the Mayan systems places the ones on the bottom of a vertical orientation and moves up as the place value increases. When numbers are written in vertical form, there should never be more than four dots in a single place. When writing Mayan numbers, every group of five dots becomes one bar. Also, there should never be more than three bars in a single place…four bars would be converted to one dot in the next place up. It’s the same as 10 getting converted to a 1 in the next place up when we carry during addition. What is the value of this number, which is shown in vertical form? What is the value of the following Mayan number? Convert the Mayan number below to base 10. Convert the base 10 number 357510 to Mayan numerals. When the base of a number is larger than 10, separate each “digit” with a comma to make the separation of digits clear. For example, in base 20, to write the number corresponding to 17 × 202 + 6 × 201 + 13 × 200, we’d write 17,6,1320. Convert the base 10 number 1055310 to Mayan numerals. Convert the base 10 number 561710 to Mayan numerals. In the following video we present more examples of how to write numbers using Mayan numerals as well as converting numerals written in Mayan for into base 10 form. The next video shows more examples of converting base 10 numbers into Mayan numerals. Adding Mayan Numbers When adding Mayan numbers together, we’ll adopt a scheme that the Mayans probably did not use but which will make life a little easier for us. Add, in Mayan, the numbers 37 and 29: Try adding 174 and 78 in Mayan by first converting to Mayan numbers and then working entirely within that system. Do not add in base-ten (decimal) until the very end when you check your work. In the last video we show more examples of adding Mayan numerals. In this module, we have briefly sketched the development of numbers and our counting system, with the emphasis on the “brief” part. There are numerous sources of information and research that fill many volumes of books on this topic. Unfortunately, we cannot begin to come close to covering all of the information that is out there. We have only scratched the surface of the wealth of research and information that exists on the development of numbers and counting throughout human history. What is important to note is that the system that we use every day is a product of thousands of years of progress and development. It represents contributions by many civilizations and cultures. It does not come down to us from the sky, a gift from the gods. It is not the creation of a textbook publisher. It is indeed as human as we are, as is the rest of mathematics. Behind every symbol, formula and rule there is a human face to be found, or at least sought. Furthermore, we hope that you now have a basic appreciation for just how interesting and diverse number systems can get. Also, we’re pretty sure that you have also begun to recognize that we take our own number system for granted so much that when we try to adapt to other systems or bases, we find ourselves truly having to concentrate and think about what is going on. Communication SystemNumeral SystemMayan Numerals Mayan to Decimal/Arabic Numbers Converter Decimal/Arabic to Mayan Numbers Converter Mayan numbers are a numbering system used by the ancient Mayans of Central and South America. The mathematical peculiarity of Maya numeration is the writing of numbers in base 20 (called vicesimal or vigesimal base) contrary to the writing in base 10 usual nowadays. In the Maya system, numbers consist of simple glyphs/symbols: the dots . and the - (horizontal) lines. Since they are written in base 20, there are 20 different digits composed of simple glyphs/symbols that can be added: dots . associated to value $ 1 $ (units) and horizontal bars - associated to value $ 5 $. Example: The number $ 14 $ (English/hindu-arabic numeral in base 10) is written in Mayan (2 bars and 4 dots: $ 2 \times 5 + 4 \times 1 = 14 $) Example: $ 0 $ (zero) is noted (originally a shell shape, but some say an egg or an American football/rugby ball) In the Maya civilization, the writing of numbers is generally vertical (the units are placed under the tens/twenties, under the (four-)hundreds etc.) Beyond 19, base 20 comes into play, and writing requires 2 lines. Example: $ 26 $ is written (in 2 rows: 1 dot on the first line: $ 1 \times 20 = 20 $ and 1 dot and 1 bar on the second line $ 1 + 5 = 6 $, total $ 20 + 6 = 26 $) From 360, the writing of Mayan numbers diverges. The written traces show 2 notations, including a specific rule, a modified vigesimal system (called long count) particularly when they spoke of dates. The variant takes place at the third tier/line, which then stops at $ 360 $ (base 10). Example: In base 20 $ 360 $ is normally written , but in modified base 20, $ 360 $ is written (which equals $ 400 $ in unmodified base 20). In the same way, the number $ 7200 $ is written $ 8000 $. Converting Mayan numerals to English/Arabic numerals is made by counting dots and bars symbols on each rows and treat it as base 20 writing, before converting it to base 10. Example: a single row with 2 dots and 3 bars: $ 2 \times 1 + 3 \times 5 = 17 $ Example: A number on two rows with 1 dot then (under) 2 dots: $ 1 \times 20 + 2 \times 1 = 22 $ For numbers that are greater than or equal to 360, be sure to know the variant used (long count). The dates in Maya are based on the Mesoamerican Long Count calendar. They use the kin, which is 1 day, then the winal which is 20 days, the tun, an 18 winal period which is therefore 360 days, about 1 solar year (365.24 days), then the katun (20 tun = 7200 days = about 20 years), then the baktun (20 katun, 144000 days = about 394 years). Day 0 seems to match August 11, 3114 BC of our era (precision to be relativised with the Gregorian / Julian calendar chosen) To write a birthdate or anniversary date in a contemporary way, dCode recommends to use the values of the 3 numbers (day, month, year) written in Maya and separated by a dash - or a bar / (slash), the year with the font changed to 360. There are two other calendar variations: the Tzolkin (or Tzolk'in) and the Haab, whose cycles are still slightly different. The first Mayan numbers are:0(zero)12345678910111213141516171819202122232440608010 0 For other Maya numbers (up to 1000, 10000, 100000, 1000000 etc.), use the form above. Today, for counting, base 10 is used, up to 9, the 10 digits 0,1,2,3,4,5,6,7,8,9 use only one character/symbol /glyph, beyond 9, it is necessary to use 2 symbols/numbers to write 10 (a 1 and a 0). Similarly, the Mayan numeral uses base 20 to count, so beyond 19 it is necessary to use 2 symbols/glyphs. It is assumed that men today count in base 10 because they have 10 fingers on their hands. It is likely that the Maya considered a process including the toes, or 20 fingers. It's mostly unusual and confusing so avoid it. It's a bit like asking the question why not write 10 with a new symbol, like Ꝺ, some may understand, some may not. Maya numeration uses generally stacked lines and dots. The Mayan civilization lived in Central America around -2000 BC as their pyramids testify. Although there are similarities, the Mayan civilization is different from the Aztecs or the Incas. Any reference to Mexico, Belize, Guatemala, El Salvador or Honduras (current areas where the Mayans lived) are clues. dCode retains ownership of the "Mayan Numerals" source code. Any algorithm for the "Mayan Numerals" algorithm, applet or snippet or script (converter, solver, encryption / decryption, encoding / decoding, ciphering / deciphering, breaker, translator), or any "Mayan Numerals" functions (calculate, convert, solve, decrypt / encrypt, decipher / cipher, decode / encode, translate) written in any informatic language (Python, Java, PHP, C#, Javascript, Matlab, etc.) or any database download or API access for "Mayan Numerals" or any other element are not public (except explicit open source licence). Same with the download for offline use on PC, mobile, tablet, iPhone or Android app. Reminder: dCode is an educational and teaching resource, accessible online for free and for everyone. Cite dCode Summary ▲ Feedback Ever wondered how ancient civilizations counted without modern tools? Imagine using dots, lines, and even shells to track time, trade, and history. That’s exactly what the Maya did over 2,000 years ago—and their system still fascinates us today. Unlike our base-10 counting method, this culture used a base-20 framework. Dots represented single units, bars stood for fives, and a shell symbolized zero—a concept they mastered centuries before others. This approach wasn’t just for math. It shaped their calendars, rituals, and daily life. Why does this matter now? Understanding these symbols unlocks how they viewed the world. For example, vertical placement changed a symbol’s value—like stacking numbers to show days or years. You’ll see how position and symbols worked together to create clarity. In this guide, you’ll learn: How to decode their unique symbols and placements The surprising role of zero in ancient calculations Connections between their numbers and cultural practices Ready to explore a system that blended math, art, and history? Let’s dive in. Understanding the Mayan Number System What if a single dot could rewrite history? For over 3,000 years, this civilization’s counting method shaped empires. Their system wasn’t just math—it was art, science, and spirituality fused into symbols. Where Numbers Met Mythology From 1500 BCE to 1700 CE, their culture thrived. Spanish priest Diego de Landa documented their glyphs in 1566, calling them “devilish figures.” But we now know better. Their numbers tracked Venus cycles, predicted eclipses, and timed harvests. Imagine using math to talk to gods. Dots, Bars, and the Power of Nothing One dot = 1. One bar = 5. A shell = 0. Simple? Genius. Stack them vertically, and you’re suddenly calculating 8,000-day calendar cycles. Archaeologists found these symbols carved into temple walls and painted on bark paper codices. They weren’t just counting beans—they mapped stars. Here’s the kicker: their zero wasn’t just a placeholder. It anchored entire equations. A 7th-century mural shows a scribe writing “15” as three bars. Below it? A shell marking the next position’s value. This wasn’t math class—it was cosmic engineering. Mastering mayan numerals 1 100: Step-by-Step Instructions Think numbers are just for math? This civilization turned them into art. Their counting method used vertical stacks of symbols to track everything from market trades to planetary cycles. Let’s crack the code. Breaking Down the Vigesimal System Forget base-10. Here’s how base-20 works: Dots = Ones: ••• means 3 Bars = Fives: — equals 5 Combine them: —•• is 5 + 2 = 7 Each position climbs by 20x. The bottom level counts ones (20^0). The next up counts twenties (20^1). Need 41? That’s one bar (5) at the base, plus two dots (2) above it: (2×20) + 5 = 45. Wait, math error? Exactly why positioning matters. Interpreting Vertical Number Placement See three levels in a carving? Here’s what they mean: Bottom: Regular numbers (1-19) Middle: Multiply by 20 Top: Multiply by 400 Example: Two dots on top (2×400) + one bar in middle (5×20) + three dots below (3) = 903. Miss a level? You’re off by hundreds. That’s how they calculated eclipse dates within minutes. Ready to try conversions? The next section turns these rules into real-world practice. How to Convert Numbers Between Bases What if you could decode ancient math like a pro? Base conversion bridges modern thinking with historical numeration. Their system used vertical layers to multiply values—a game-changer for tracking time and trade. Using the Base-20 Method Start from the bottom. Each level represents increasing powers of 20. Here’s the blueprint: Bottom layer: Count dots (1s) and bars (5s) Middle layer: Multiply totals by 20 Top layer: Multiply by 400 (20×20) Example: Three dots below (3) + one bar above (5×20) = 103. Miss a layer? You’ll miscalculate eclipse dates by decades. Translating Symbols to Base-10 Let’s crack a real code. Say you see: Two shells (0) at the base Three bars (15) in the middle Four dots (4) on top Calculate: (0×1) + (15×20) + (4×400) = 1,900. That’s how their scribes recorded royal events. Common mistake? Forgetting empty positions still hold place value. Pro tip: Always verify layer counts. A misplaced dot could turn 42 into 842. Their precision wasn’t magic—it was meticulous design. Exploring the Role of Mayan Numerals in Timekeeping Time wasn’t just measured—it was worshipped. Their calendar predicted solstices within minutes and tracked Venus’ 584-day cycle flawlessly. This precision required more than math. It demanded symbols that could stretch across centuries. The Calendar and Its Calculation Methods Their Long Count system used stacked dots and bars to count days in cycles up to 63 million years. One inscription shows 13 baktuns (1,872,000 days) carved as three bars and four dots. Why? To mark cosmic rebirth dates. Here’s how it worked: Days: Single dots (1) and bars (5) at the base level Months: Multiply by 20 in the second position Years: Multiply by 360 (not 400) for agricultural cycles “They calculated lunar months with a 0.0003% error—better than Europe’s clocks until the 1700s.” —Dresden Codex Analysis Numbers as Cosmic Bridges Every ritual aligned with numbers. A priest might schedule a ceremony on 13 Ahau—13 being sacred, represented by two bars and three dots. Venus’ return? Tracked using five-position stacks totaling 584. Even wars timed by numbers. A stele at Tikal records a battle date as 9.15.19.13.4—translating to August 14, 732 CE. Miss one dot, and you’re off by 20 years. Their system didn’t just count days. It scripted history. Practical Exercises and Conversion Examples Ready to test your skills with ancient math? Let’s turn theory into action. Grab a pen—this is where symbols leap off the page and become real calculations. Interactive Number Conversions Example 1: Decoding a stacked symbol. You find three dots above one bar. Here’s how to solve it: Start at the bottom: One bar = 5 Move up: Three dots = 3 × 20 = 60 Add them: 5 + 60 = 65 Example 2: Writing 93 in their system. Remember—each position jumps by 20x: Divide 93 by 20: 4 groups of 20, remainder 13 Bottom layer: 13 = two bars (10) + three dots (3) Top layer: Four dots (4 × 20) Pause here. Try converting 127 yourself. Hint: Break it into 6×20 + 7. Use two bars and two dots for the 7. Why does this matter? Hands-on practice reveals their genius. A misplaced dot changes 7 to 27. Their precision shaped cities and star charts. Now you’re thinking like a scribe. Diving Deeper into the Evolution of Number Systems What if every number you’ve ever written owes a debt to ancient innovators? Three groundbreaking systems shaped how we calculate today. Let’s explore how their designs still echo in your spreadsheets and smartphone apps. Three Systems, One Mathematical Legacy Compare these frameworks: System Base Symbols Positional Value Ancient Innovators 20 Dots, bars, shells Vertical stacking Babylonian 60 Wedge marks Left-to-right Modern 10 0-9 digits Horizontal places The Babylonian approach used base-60 for tracking constellations and trade. Their wedge-shaped marks required memorizing 59 unique symbols. Our modern system? It adopted base-10 from finger counting but kept the positional logic these cultures perfected. Why Ancient Math Still Clicks Today Those dots and bars did more than count harvests. Their “bottom-up” stacking inspired how we organize data in spreadsheets. A single shell symbol for zero became the backbone of binary code. Think about phone passwords. When you type “507,” you’re using positional value – the 5 represents hundreds, not fives. This concept first appeared in temple carvings and clay tablets. “Positional systems let us compress universe-sized calculations into pocket devices.” Next time you split a dinner bill, remember: you’re using tools refined over 4,000 years. From barley taxes to Bitcoin, numbers keep evolving – but their roots remain timeless. Wrapping it Up: Embracing the Legacy of Mayan Numerals Every dot and bar tells a story of innovation. For over two thousand years, this system transformed how people tracked time, traded goods, and connected with the cosmos. Their vertical stacking method—where position defines value—still influences how we organize data today. Think about it: a single dot could mark days, while layered bars calculated eclipse cycles. The base-20 framework wasn’t just math. It became the backbone of sacred calendars and city planning. Modern programmers use similar positional logic in binary code. Archaeologists still find these symbols etched into temple walls, proving their timeless precision. Want to keep exploring? Try interactive conversion tools online. Notice how the calendar’s accuracy rivals today’s atomic clocks. Share these discoveries with friends—it’s history you can touch. Ancient systems remind us that progress builds on wisdom. Next time you check the date or split a bill, remember: you’re part of a story that began with dots, bars, and visionary thinkers. Their legacy isn’t frozen in time. It’s alive in every number you use. Number.academy mayan numbers Maya numbering is a numbering system that was developed and used throughout the Mayan Empire. As symbols to represent certain values, the points, the horizontal line and the shell organized in the levels are used. You can convert the natural number up to 10,000 for example 123 or 2025. Mayan number Mayan math The examples. Level 1 is the lowest level. 22 = 2*1 + 1*20 (two points at level 1, 1 point at level 2) 41 = 1*1 + 2*20 (one point at level 1, 2 points at level 2) 122 = 6*20 (two points at level 1, 1 point and the horizontal line at level 2) 402 = 2*1 + 0*20 + 1*202 (two points at level 1, the shell at level 2, one point at level 3) 8000 = 0 + 0*20 + 0*202 + 1*203 (levels 1, 2 and 3 the shell, a point at level 4) In the base numbering system, the unit is represented by a point. Two, three, and four dots serve to represent 2, 3, and 4, and the horizontal line serves to represent 5. The symbol of a shell or snail served to represent zero. The Mayans could write any number from 0 to 19, using a combination of these symbols. The exact value of a number was determined by its vertical position. When raising a position, the basic value of the unit multiplied by twenty. In this way, the lowest symbol would represent the base units, the next symbol, in the second position, would represent a multiplication by twenty of the unit, and the symbol in the third position would represent a multiplication by 400, and so on. For example, the number 882 is written with four dots at the lowest level, four dots at the next highest level, and two points at the next level, to give 2 * 1, with 4 * 20, with 2 * 400. With this system the Mayans could write very long numbers up to 159,999. More about Mayan numbering The horizontal levels and the multiplications. 4th orderd*203 + c*202 + b*201 + a*200From 8,000 to 159,999 3rd orderc*202 + b*201 + a*200From 400 to 7,999 2nd orderb*201 + a*200From 20 to 399 1st ordera*200From 0 to 19 Mayan numerals, nomination (writing) and decimal equivalences. Mayan NominationDecimal zero0 one1 two2 three3 four4 five5 six6 seven7 eight8 nine9 ten10 eleven11 twelve12 thirteen13 fourteen14 fifteen15 sixteen16 seventeen17 eighteen18 nineteen19 twenty20 twenty-one21 twenty-two22 twenty-three23 twenty-four24 twenty-five25 twenty-six26 twenty-seven27 twenty-eight28 twenty-nine29 thirty30 thirty-one31 thirty-two32 thirty-three33 thirty-four34 thirty-five35 thirty-six36 thirty-seven37 thirty-eight38 thirty-nine39 forty40 forty-one41 forty-two42 forty-three43 forty-four44 forty-five45 forty-six46 forty-seven47 forty-eight48 forty-nine49 fifty50 fifty-one51 fifty-two52 fifty-three53 fifty-four54 fifty-five55 fifty-six56 fifty-seven57 fifty-eight58 fifty-nine59 sixty60 sixty-one61 sixty-two62 sixty-three63 sixty-four64 sixty-five65 sixty-six66 sixty-seven67 sixty-eight68 sixty-nine69 seventy70 seventy-one71 seventy-two72 seventy-three73 seventy-four74 seventy-five75 seventy-six76 seventy-seven77 seventy-eight78 seventy-nine79 eighty80 eighty-one81 eighty-two82 eighty-three83 eighty-four84 eighty-five85 eighty-six86 eighty-seven87 eighty-eight88 eighty-nine89 ninety90 ninety-one91 ninety-two92 ninety-three93 ninety-four94 ninety-five95 ninety-six96 ninety-seven97 ninety-eight98 ninety-nine99 Back to the top of the page Follow us on FACEBOOK INSTAGRAM PINTEREST Skip to content The Mayan Numbers uses a 20 base system, called the vigesimal number system. Just as our own ten based numeric system was probably used because we have 10 fingers on our hands, the Mayan numeric system was probably based on the number of fingers on both the hands and feet. The Mayans used the numbers to make surprisingly accurate measurements in their Calendrical System and the construction of incredible buildings such as the Kukulkán pyramid in Chichén Itzá, The Pyramid of the Magician in Uxmal, among others. Mayan Numbers 0 -19 0, 1, 5 Mayan Numbers The ancient Mayans could express any number from zero to infinity using only 3 symbols, the shell, a dot, and a horizontal line. The shell has a value of 0, the dot is worth 1 and the line is worth 5. An interesting fact is that the Mayan system may have been the first to make use of zero as a placeholder, and as a number in the entire known human history. Just like our system, the Mayan numbers are also positional, which means that the position of a numeric symbol indicates its value. With this they could represent incredibly large numbers just by positioning them vertically, adding the multiple of 20 in the position above. Unlike our system, where the unit’s position starts on the right and then moves to the left to represent a higher value, the Mayan system starts at the bottom and the units are added upwards as it increases its positional value. As we have seen, there are only 3 symbols with which we can represent any number based on the vertical position, the higher they are, the more value they represent. When writing the Mayan Numbers, the number of dots is limited to 4 and the number of bars is limited to 3. So, if we want to represent the number 5, we can NOT use 5 dots, instead, we can add a bar that represents that amount. In the first position, we can only represent up to number 19. First position There should never be more than four dots and three bars. By putting a value in the second position, it’s raised to the twentieth power; in other words, it’s multiplied by 20. The dots and lines in the first position keep their original value, but those in the second position get multiplied by 20. If we have a dot in the second position, instead of having a value of 1, it’s now worth 20 (1×20). The bar instead of having a value of 5, is now worth 100 (5×20). Second position If you want to represent the number 20, you have to put the Shell (worth zero) in the first position, the same if you want to represent any other multiple of 20 such as 40, 60, 100, 200, etc. Mayan numeric positions Just as we saw in the first and second positions, and how they acquire a different value depending on where they are, we can continue adding more positions to represent increasing numerical values. 1 jun 11 jun lajun 2 ka’a 12 ka’a lajun 3 óox 13 óoxlajun 4 kan 14 kanlajun 5 jo’o 15 jo’olajun 6 waak 16 waaklajun 7 u’uk 17 u’uklajun 8 waxak 18 waxaklajun 9 bolon 19 bolonlajun 10 lajun 20 jun k’aal 2001Jun20120Jun k’aal202400Bak2038,000Pic204160,000Kabal2053,200,000Kinchil20664,000,000Alau20712,800,000,000Hablat There were two numbering systems developed by the Mayans: one for ordinary people and one for priests. These two systems not only used different symbols, but also used different base systems. For priests, the number system was governed by ritual and the days of the year were thought to be gods, so the formal symbols for the days were decorated heads. Days with mayan gods Now that you have learned the numbers in the Mayan Language, I invite you to do the following interactive exercise so that you can test yourself: About Us Pierluigi "Piero" Peruzzi I was born in Liguria on: 0.0.12.16.18.8.16. Piero Peruzzi Box 51 4120 Tagaytay City Philippines Mobile 0063 917 516 3377 piero@peruzzi.li Piero Peruzzi My hobby is alternative archaeology and astro-archaeology, as well as alternative history. SEPTES and UFOs don't interest me. Even the names of important people of old and modern history don't interest me at all. Because they are the very ones, the old kings, despots, dictators and revolutionaries who have slaughtered good people. Besides, it is not the kings and prelates who develop a culture, but the human persons who live in it. The thing that interests me the most is the real and actual history, without some mysteries and no UFOs or childish religious interpretations of a God traveling on a chariot of fire. All of this I consider to be fanciful thoughts of desire. Desire in a higher justice, which cannot even exist, because it would stop the evolution. Among paleosetians scholars, I consider myself a skeptical realist. Logic, mathematics, and physics are prioritized in my thinking. I also follow a road-map: "Everything must be logical." In life I have found that logic is almost 99% the basis of all reality. This means that between theory and practice there is always logic in the middle. What is not realistic or logical only has a place in the human imagination. What seems logical to me is the existence of a CREATOR in the backstage of the universe. Roughly as Albert Einstein described it. But certainly not the Old Testament Lord flying around in a chemically propelled "chariot of fire". My personal reflections on fantasy and "own wishes" For example, time travel and the movie Tron Legacy are excellent products of human fantasy, beyond all logic and are to be considered absolutely impossible in our real life. Worse still is when some humans think the Tron Legacy movie can be implemented in the future. Sometimes I think that part of humanity sees the "Matrix" as reality. But the reality is something else and we are all subject to the law of the strongest. Anyone who does not want to observe this law will be a loser, because justice is a beautiful tale that our religious leads and politicians tell us every day. Privacy policy Homepage Contact us @PierluigiPeruzzi(Twitter) Copyright © 2022.01 Pierluigi Peruzzi, with indication of the author this side may be copied, linked and duplicated also in extracts. It is also allowed to include them in your pages as or . Share — copy and redistribute the material in any medium or format for any purpose, even commercially. 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For example, other rights such as publicity, privacy, or moral rights may limit how you use the material. Mayan numeral system de-2009.10.1 / Apr. 4, 2022 (20 x 1 =) 20+(1 x 5 =) 5totally = 25 (20 x 1 =) 20+(1 x 9 =) 9totally = 29 (20 x 1 =) 20+(1 x 17 =) 17totally = 37 (20 x 4 =) 80+(1 x 14 =) 14totally = 94 (20 x 17 =) 340+(1 x 3 =) 3totally = 343 (360 x 5 =) 1800+(20 x 0 =) 0+(1 x 12 =) 12totally = 1812 (360 x 7 =) 2520+(20 x 17 =) 340+(1 x 3 =) 3totally = 2863 Privacy policy Homepage @PierluigiPeruzzi(Twitter) Copyright © 2009 Pierluigi Peruzzi With indication of the author this side may be copied, linked, criticized and duplicated also in extracts.It is also allowed to include them in your pages as or . 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 99 100 , the free encyclopedia that anyone can edit. 110,144 active editors 7,022,728 articles in English Sirius A with Sirius B, a white dwarf, indicated by the arrow A white dwarf is a stellar core remnant composed mostly of electron-degenerate matter, supported against its own gravity only by electron degeneracy pressure. A white dwarf is very dense: in an Earth sized volume, it contains a mass comparable to the Sun. What light it radiates is from its residual heat. White dwarfs are thought to be the final evolutionary state of stars whose mass is insufficient for them to become a neutron star or black hole. This includes more than 97% of the stars in the Milky Way. After the hydrogen-fusing period of such a main-sequence star ends, it will expand to a red giant and shed its outer layers, leaving behind a core which is the white dwarf. This, very hot when it forms, cools as it radiates its energy until its material begins to crystallize into a cold black dwarf. The oldest known white dwarfs still radiate at temperatures of a few thousand kelvins, which establishes an observational limit on the maximum possible age of the universe. (Full article...) Recently featured: Battle of Groix Scott Carpenter Johann Reinhold Forster Archive By email More featured articles About A Royal 10 typewriter ... that a Royal 10 (pictured) used in the music video for "Fortnight" caused an interest in typewriters among Swifties? ... that the Brazilian government advocated the use of COVID kits, which contained a drug used to treat head lice? ... that Brave Bunnies was among the children's series streamed ad-free on Sunflower TV for Ukrainian refugees? ... that it took more than two years after the Romans invaded Africa in 204 BC for them to completely defeat the Carthaginians? ... that the Pittsburgh Post-Gazette reported that "half of the residents of Mount Desert Island, Maine, are convinced they are millionaires since the body of Karl N. Mellon" was discovered? ... that AiScReam's recent debut song "Ai Scream!" went viral on social media? ... that Laura LeRoy Travis was the first woman at the University of Delaware to coach a men's sports team? ... that the screenplay for Smashing Frank was developed from an assignment in a filmmaking course? ... that the iconic 1937 photograph At the Time of the Louisville Flood identifiably depicts neither Louisville nor the flood? Archive Start a new article Nominate an article Vera Rubin Observatory The Vera C. Rubin Observatory (pictured) in Chile releases the first light images from its new 8.4-metre (28 ft) telescope. In basketball, the Oklahoma City Thunder defeat the Indiana Pacers to win the NBA Finals. The United States conducts military strikes on three nuclear facilities in Iran. In rugby union, the Crusaders defeat the Chiefs to win the Super Rugby Pacific final. In ice hockey, the Florida Panthers defeat the Edmonton Oilers to win the Stanley Cup. Ongoing: Gaza war Iran–Israel war Russian invasion of Ukraine timeline Sudanese civil war timeline Recent deaths: Frederick W. Smith Ron Taylor Mohammad Kazemi Marita Camacho Quirós Kim Woodburn William Langewiesche Nominate an article June 24: Jaanipäev in Estonia Julia Gillard 1374 – An outbreak of dancing mania, in which crowds of people danced themselves to exhaustion, began in Aachen (in present-day Germany) before spreading to other parts of Europe. 1717 – The first Grand Lodge of Freemasonry, the Premier Grand Lodge of England, was founded in London. 1724 – On the Feast of St. John the Baptist, Bach led the first performance of Christ unser Herr zum Jordan kam, BWV 7, the third cantata of his chorale cantata cycle. 1943 – Amid racial tensions, U.S. Army military police shot and killed a black serviceman after a confrontation at a pub in Bamber Bridge, England. 2010 – Julia Gillard (pictured) was sworn in as the first female prime minister of Australia after incumbent Kevin Rudd declined to contest a leadership spill in the Labor Party. William Arnold (b. 1587)John Lloyd Cruz (b. 1983)Lisa (b. 1987)Rodrigo (d. 2000) More anniversaries: June 23 June 24 June 25 Archive By email List of days of the year About The springbok (Antidorcas marsupialis) is a medium-sized antelope found mainly in the dry areas of southern and southwestern Africa. A slender, long-legged bovid, it reaches 71 to 86 cm (28 to 34 in) at the shoulder and weighs between 27 and 42 kg (60 and 93 lb). Both sexes have a pair of long black horns that curve backwards, a white face, a dark stripe running from the eyes to the mouth, a light-brown coat with a reddish-brown stripe, and a white rump flap. Primarily browsing at dawn and dusk, it can live without drinking water for years, subsisting on succulent vegetation. Breeding peaks in the rainy season, when food is more abundant. A single calf is weaned at nearly six months of age and leaves its mother a few months later. Springbok herds in the Kalahari Desert and the semi-arid Karoo used to migrate in large numbers across the countryside. The springbok is the national animal of South Africa. This male springbok was photographed in Etosha National Park, Namibia. Photograph credit: Yathin S Krishnappa Recently featured: Geraldine Ulmar Shah Mosque (Isfahan) Cape Barren goose Archive More featured pictures Community portal – The central hub for editors, with resources, links, tasks, and announcements. Village pump – Forum for discussions about Wikipedia itself, including policies and technical issues. Site news – Sources of news about Wikipedia and the broader Wikimedia movement. Teahouse – Ask basic questions about using or editing Wikipedia. Help desk – Ask questions about using or editing Wikipedia. Reference desk – Ask research questions about encyclopedic topics. Content portals – A unique way to navigate the encyclopedia. Wikipedia is written by volunteer editors and hosted by the Wikimedia Foundation, a non-profit organization that also hosts a range of other volunteer projects: CommonsFree media repository MediaWikiWiki software development Meta-WikiWikimedia project coordination WikibooksFree textbooks and manuals WikidataFree knowledge base WikinewsFree-content news WikiquoteCollection of quotations WikisourceFree-content library WikispeciesDirectory of species WikiversityFree learning tools WikivoyageFree travel guide WiktionaryDictionary and thesaurus This Wikipedia is written in English. Many other Wikipedias are available; some of the largest are listed below. 1,000,000+ articles العربية Deutsch Español فارسی Français Italiano Nederlands 日本語 Polski Português Русский Svenska Українська Tiếng Việt 中文 250,000+ articles Bahasa Indonesia Bahasa Melayu Bân-lâm-gú Български Català Čeština Dansk Eesti Ελληνικά Esperanto Euskara עברית Հայերեն Magyar Norsk bokmål Română Simple English Slovenčina Srpski Srpskohrvatski Suomi Türkçe Oʻzbekcha 50,000+ articles Asturianu Azərbaycanca □□□□□ Bosanski کوردی Frysk Gaeilge Galego Hrvatski ქართული Kurdî Latviešu Lietuvių □□□□□□ Македонски □□□□□□□□□ Norsk nynorsk □□□□□□ Shqip Slovenščina □□□ □□□□□□ اردو Retrieved from " 2 This article needs additional citations for verification. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed.Find sources: "1374" – news · newspapers · books · scholar · JSTOR (June 2017) (Learn how and when to remove this message) Calendar year Years Millennium 2nd millennium Centuries 13th century 14th century 15th century Decades 1350s 1360s 1370s 1380s 1390s Years 1371 1372 1373 1374 1375 1376 1377 vte 1374 by topic Leaders Political entities State leaders Religious leaders Birth and death categories Births – Deaths Establishments and disestablishments categories Establishments – Disestablishments Art and literature 1374 in poetry vte 1374 in various calendarsGregorian calendar1374MCCCLXXIVAb urbe condita2127Armenian calendar823ԹՎ ՊԻԳAssyrian calendar6124Balinese saka calendar1295–1296Bengali calendar780–781Berber calendar2324English Regnal year47 Edw. 3 – 48 Edw. 3Buddhist calendar1918Burmese calendar736Byzantine calendar6882–6883Chinese calendar癸丑年 (Water Ox)4071 or 3864 — to —甲寅年 (Wood Tiger)4072 or 3865Coptic calendar1090–1091Discordian calendar2540Ethiopian calendar1366–1367Hebrew calendar5134–5135Hindu calendars - Vikram Samvat1430–1431 - Shaka Samvat1295–1296 - Kali Yuga4474–4475Holocene calendar11374Igbo calendar374–375Iranian calendar752–753Islamic calendar775–776Japanese calendarŌan 7(応安７年)Javanese calendar1287–1288Julian calendar1374MCCCLXXIVKorean calendar3707Minguo calendar538 before ROC民前538年Nanakshahi calendar−94Thai solar calendar1916–1917Tibetan calendar阴水牛年(female Water-Ox)1500 or 1119 or 347 — to —阳木虎年(male Wood-Tiger)1501 or 1120 or 348Year 1374 (MCCCLXXIV) was a common year starting on Sunday of the Julian calendar. April 23 – In recognition of his services, Edward III of England grants the English writer Geoffrey Chaucer a gallon of wine a day, for the rest of his life. June 24 – The illness dancing mania begins in Aix-la-Chapelle (Aachen), possibly due to ergotism. October 27 – King Gongmin of Goryeo is assassinated and succeeded by U of Goryeo on the throne of Goryeo (in modern-day Korea). November 25 – James of Baux succeeds his uncle, Philip II, as Prince of Taranto (modern-day eastern Italy) and titular ruler of the Latin Empire (northern Greece and western Turkey). Rao Biram Dev succeeds Rao Kanhadev as ruler of Marwar (the modern-day Jodhpur district of India). Shaikh Hasan Jalayir succeeds his father, Shaykh Uways Jalayir, as ruler of the Jalayirid Sultanate in modern-day Iraq and western Iran. Hasan proves to be an unpopular ruler and is executed on October 9 and succeeded by his brother, Shaikh Hussain Jalayir. Musa II succeeds his father, Mari Djata II, as Mansa of the Mali Empire (modern-day Mali and Senegal). Robert de Juilly succeeds Raymond Berenger as Grand Master of the Knights Hospitaller. Princes from the Kingdom of Granada choose Abu al-Abbas Ahmad to succeed Muhammad as-Said, as Sultan of the Marinid Empire in Morocco. The Empire is split into the Kingdom of Fez and the Kingdom of Marrakech. A form of the Great Plague returns to Europe. The Château de Compiègne royal residence is built in France. April 11 – Roger Mortimer, 4th Earl of March, heir to the throne of England (d. 1398) November 26 – Yury Dmitrievich, Russian grand prince (d. 1434) probable Queen Jadwiga of Poland King Martin I of Sicily (d. 1409) March 12 – Emperor Go-Kōgon of Japan (b. 1338). June 5 or June 6 – William Whittlesey, Archbishop of Canterbury June 29 – Jan Milíč of Kroměříž, Czech priest and reformer July 19 – Petrarch, Italian poet (b. 1304) September – Joanna of Flanders, Duchess of Brittany (b. 1295) October 27 – King Gongmin of Goryeo (b. 1330) November 25 – Prince Philip II of Taranto December 1 – Magnus Eriksson, king of Sweden (b. 1316) date unknown – Gao Qi, Chinese poet (born 1336) date unknown – Konrad of Megenberg, historian (b. 1309)[1] ^ "Book of Nature". World Digital Library. August 7, 2013. Retrieved August 27, 2013. Retrieved from " 3One hundred years, from 1201 to 1300 For the video game series, see XIII Century (series). Millennia 2nd millennium Centuries 12th century 13th century 14th century Timelines 12th century 13th century 14th century State leaders 12th century 13th century 14th century Decades 1200s 1210s 1220s 1230s 1240s 1250s 1260s 1270s 1280s 1290s Categories: Births – Deaths Establishments – Disestablishments vte Mongol Emperor Genghis Khan whose conquests created the largest contiguous empire in history The 13th century was the century which lasted from January 1, 1201 (represented by the Roman numerals MCCI) through December 31, 1300 (MCCC) in accordance with the Julian calendar. The Mongol Empire was founded by Genghis Khan, which stretched from Eastern Asia to Eastern Europe. The conquests of Hulagu Khan and other Mongol invasions changed the course of the Muslim world, most notably the Siege of Baghdad (1258) and the destruction of the House of Wisdom. Other Muslim powers such as the Mali Empire and Delhi Sultanate conquered large parts of West Africa and the Indian subcontinent, while Buddhism witnessed a decline through the conquest led by Bakhtiyar Khilji. The earliest Islamic states in Southeast Asia formed during this century, most notably Samudera Pasai.[1] The Kingdoms of Sukhothai and Hanthawaddy would emerge and go on to dominate their surrounding territories.[2] Europe entered the apex of the High Middle Ages, characterized by rapid legal, cultural, and religious evolution as well as economic dynamism. Crusades after the fourth, while mostly unsuccessful in rechristianizing the Holy Land, inspired the desire to expel Muslim presence from Europe that drove the Reconquista and solidified a sense of Christendom. To the north, the Teutonic Order Christianized and gained dominance of Prussia, Estonia, and Livonia. Inspired by new translations into Latin of classical works preserved in the Islamic World for over a thousand years, Thomas Aquinas developed Scholasticism, which dominated the curricula of the new universities.[3] In England, King John signed the Magna Carta, beginning the tradition of Parliamentary advisement in England. This helped develop the principle of equality under law in European judisprudence.[4] The Southern Song dynasty began the century as a prosperous kingdom but were later invaded and annexed into the Yuan dynasty of the Mongols. The Kamakura Shogunate of Japan successfully resisted two Mongol invasion attempts in 1274 and 1281. The Korean state of Goryeo resisted a Mongol invasion, but eventually sued for peace and became a client state of the Yuan dynasty.[5] In North America, according to some population estimates, the population of Cahokia grew to be comparable to the population of 13th-century London.[6] In Peru, the Kingdom of Cuzco began as part of the Late Intermediate Period. In Mayan civilization, the 13th century marked the beginning of the Late Postclassic period. The Kanem Empire in what is now Chad reached its apex. The Solomonic dynasty in Ethiopia and the Zimbabwe Kingdom were founded. Eastern Hemisphere in 1200 AD Main article: 1200s 1202: Introduction of Liber Abaci by Fibonacci. 1202: Battle of Basian occurs on July 27, between Kingdom of Georgia and Seljuks. 1202: Battle of Mirebeau occurs on August 1, between Arthur I of Brittany and John of England. 1204: Islamization of Bengal by Bakhtiyar Khalji and oppression of Buddhism in East India. 1204: Fourth Crusade of 1202–1204 captures Zadar for Venice and sacks Byzantine Constantinople, creating the Latin Empire. 1204: Fall of Normandy from Angevin hands to the French King, Philip Augustus, end of Norman domination of France. 1205: The Battle of Adrianople occurred on April 14 between Bulgarians under Tsar Kaloyan of Bulgaria, and Crusaders under Baldwin I, (July 1172 – 1205), the first emperor of the Latin Empire of Constantinople. 1206: Genghis Khan is declared Great Khan of the Mongols. 1206: The Delhi Sultanate is established in Northern India under the Mamluk Dynasty. 1209: Francis of Assisi founds the Franciscan Order. 1209: The Albigensian Crusade is declared by Pope Innocent III. Main article: 1210s A page of the Italian Fibonacci's Liber Abaci from the Biblioteca Nazionale di Firenze showing the Fibonacci sequence with the position in the sequence labeled in Roman numerals and the value in Arabic-Hindu numerals. 1210: Qutb-ud-Din Aibak, the first ruler of the Delhi Sultanate, fell down from a horse while playing chovgan (a form of polo on horseback) in Lahore and died instantly when the pommel of the saddle pierced his ribs. 1212: The Battle of Las Navas de Tolosa in Iberia marks the beginning of a rapid Christian reconquest of the southern half of the Iberian Peninsula, mainly from 1230–1248, with the defeat of Moorish forces. 1212: Frederick of Sicily is crowned King of the Romans at Mainz. 1213: The Kingdom of France defeats the Crown of Aragon at the Battle of Muret. 1214: France defeats the English and Imperial German forces at the Battle of Bouvines. 1215: King John signs Magna Carta at Runnymede. 1216: Battle of Lipitsa between Russian principalities. 1216: Maravarman Sundara I reestablishes the Pandya Dynasty in Southern India 1217–1221: Fifth Crusade captures Egyptian Ayyubid port city of Damietta; ultimately the Crusaders withdraw. Main article: 1220s c. 1220: The Kingdom of Mapungubwe was established 1220: Frederick II, Holy Roman Emperor is crowned in Rome 1221: Merv, Herat, Bamyan and Nishapur are destroyed in the Mongol invasion of the Khwarazmian Empire. 1222: Andrew II of Hungary signs the Golden Bull which affirms the privileges of Hungarian nobility. 1223: The Signoria of the Republic of Venice is formed and consists of the Doge, the Minor Council, and the three leaders of the Quarantia. 1223: The Mongol Empire defeats various Russian principalities at the Battle of the Kalka River. 1223: Volga Bulgaria defeats the army of the Mongol Empire at the Battle of Samara Bend. 1225: Trần dynasty of Vietnam was established by Emperor Trần Thái Tông ascended to the throne after his uncle Trần Thủ Độ orchestrated the overthrow of the Lý dynasty. 1226–1250: Dispute between the so-called second Lombard League and Emperor Frederick II. 1227: Estonians are finally subjugated to German crusader rule during the Livonian Crusade. 1227: Genghis Khan dies. 1228–1229: Sixth Crusade under the excommunicated Emperor Frederick II, who returns Jerusalem to the Crusader States in a negotiated settlement with the Sultan of Egypt, Al-Kamil 1228–1230: First clash between Gregory IX and Emperor Frederick II. Main article: 1230s Portrait of the Chinese Zen Buddhist Wuzhun Shifan, painted in 1238, Song dynasty. 1231: Emperor Frederick II promulgates the Constitutions of Melfi, a far-reaching legal code influential in the development of continental European statehood.[7][8] 1232: The Mongols besiege Kaifeng, the capital of the Jin dynasty, capturing it in the following year. 1233: Battle of Ganter, Ken Arok defeated Kertajaya, the last king of Kediri, thus established Singhasari kingdom[9] Ken Arok ended the reign of Isyana Dynasty and started his own Rajasa dynasty. 1235: The Mandinka kingdoms unite to form the Mali Empire which leads to the downfall of Sosso in the 1230s. 1237: Emperor Frederick II virtually annihilates the forces of the second Lombard League at the Battle of Cortenuova. 1239–1250: Third conflict between the Holy Roman Empire and the Papacy. 1237–1240: Mongol Empire conquers Kievan Rus. 1238: Sukhothai becomes the first capital of Sukhothai Kingdom. Main article: 1240s 1240: Russians defeat the Swedish army at the Battle of the Neva. 1241: Mongol Empire defeats Hungary at the Battle of Mohi and defeats Poland at the Battle of Legnica. Hungary and Poland ravaged. 1242: Russians defeat the Teutonic Knights at the Battle of Lake Peipus. 1243–1250: Second Holy Roman Empire–Papacy War. 1244: Ayyubids and Khwarezmians defeat the Crusaders and their Muslim allies at the Battle of La Forbie. 1249: End of the Portuguese Reconquista against the Moors, when King Afonso III of Portugal reconquers the Algarve. 1248–1254: Seventh Crusade captures Egyptian Ayyubid port city of Damietta, crusaders ultimately withdraw, after the capture of French king Louis IX. Mamelukes overthrow Ayyubid Dynasty. Main article: 1250s Mongol Empire in 1227 at Genghis Khan's death By 1250, Pensacola culture, through trade, begins influencing Coastal Coles Creek culture.[10] 1250: The Mamluk dynasty is founded in Egypt. 1250: Death of Emperor Frederick II on December 13th. 1257: Baab Mashur Malamo established the Sultanate of Ternate in Maluku. 1258: Baghdad captured and destroyed by the Mongols, effective conclusion of the Abbasid Caliphate in Baghdad. 1258: Pandayan Emperor Jatavarman Sundara I invades Eastern India and northern Sri Lanka. 1259: Treaty of Paris is signed between Louis IX and Henry III Main article: 1260s 1260: Mongols first major war defeat in the Battle of Ain Jalut against the Egyptians. 1260: Toluid Civil War begins between Kublai Khan and Ariq Böke for the title of Great Khan. 1261: Byzantines under Michael VIII retake Constantinople from the Crusaders and Venice. 1262: Iceland brought under Norwegian rule, with the Old Covenant. 1265: Dominican theologian Thomas Aquinas begins to write his Summa Theologiae. 1268: Fall of the Crusader State of Antioch to the Egyptians. Main article: 1270s The opening page of one of Ibn al-Nafis' medical works. This is probably a copy made in India during the 17th or 18th century. 1270: Goryeo dynasty swears allegiance to the Yuan dynasty. 1270: The Zagwe dynasty is displaced by the Solomonic dynasty. 1271: Edward I of England and Charles of Anjou arrive in Acre, starting the Ninth Crusade against Baibars. 1272–1274: Second Council of Lyon attempts to unite the churches of the Eastern Roman Empire with the Church of Rome. 1274: The Mongols launch their first invasion of Japan, but they are repelled by the Samurai and the Kamikaze winds. 1274: The Tepanec give the Mexica permission to settle at the islet Cauhmixtitlan (Eagle's Place Between the Clouds) 1275: Sant Dnyaneshwar who wrote Dnyaneshwari (a commentary on the Bhagavad Gita) and Amrutanubhav was born. 1275: King Kertanegara of Singhasari launched Pamalayu expedition against Melayu Kingdom in Sumatra (ended in 1292). 1277: Passage of the last and most important of the Paris Condemnations by Bishop Tempier, which banned a number of Aristotelian propositions 1279: The Song dynasty ends after losing the Battle of Yamen to the Mongols. 1279: The Chola Dynasty in Southern India officially comes to an end. Main article: 1280s 1281: The Mongols launch their second invasion of Japan, but like their first invasion they are repelled by the Samurai and the Kamikaze winds. 1282: Aragon acquires Sicily after the Sicilian Vespers. 1284: Peterhouse, Cambridge founded by Hugo de Balsham, the Bishop of Ely. 1284: King Kertanegara launches the Pabali expedition to Bali, integrating Bali into the Singhasari territory. 1285: Second Mongol raid against Hungary, led by Nogai Khan. 1289: The County of Tripoli falls to the Bahri Mamluks led by Qalawun. 1289: Kertanegara insulted the envoy of Kublai Khan, who demanded that Java pay tribute to the Yuan Dynasty.[11][12] Main articles: 1290s and 1300s Hommage of Edward I (kneeling), to the Philippe le Bel (seated). As duke of Aquitaine, Edward was a vassal to the French king. The Mamluk Dynasty comes to an end and is replaced by the Khalji dynasty. 1290: By the Edict of Expulsion, King Edward I of England orders all Jews to leave the Kingdom of England. 1291: The Swiss Confederation of Uri, Schwyz, and Unterwalden forms. 1291: Mamluk Sultan of Egypt al-Ashraf Khalil captures Acre, thus ending the Crusader Kingdom of Jerusalem (the last Christian state remaining from the Crusades). 1292: Jayakatwang, duke of Kediri, rebels and kills Kertanegara, ending the Singhasari kingdom. 1292: Marco Polo, on his voyage from China to Persia, visits Sumatra and reports that, on the northern part of Sumatra, there were six trading ports, including Ferlec, Samudera and Lambri.[13] 1292: King Mangrai founds the Lanna kingdom. 1293: Mongol invasion of Java.[14] Kublai Khan of Yuan dynasty China, sends punitive attack against Kertanegara of Singhasari, who repels the Mongol forces. 1293: On 10 November, the coronation of Nararya Sangramawijaya as monarch, marks the foundation of the Hindu Majapahit kingdom in eastern Java. 1296: First War of Scottish Independence begins. 1297: Membership in the Mazor Consegio or the Great Council of Venice of the Venetian Republic is sealed and limited in the future to only those families whose names have been inscribed therein. 1299: Ottoman Empire is established under Osman I. 1300: Islam is likely established in the Aceh region. 1300: Aji Batara Agung Dewa Sakti founds the Kingdom of Kutai Kartanegara/Sultanate of Kutai in the Tepian Batu or Kutai Lama. 1300: The Turku Cathedral was consecrated in Turku.[15] 1300: Sri Rajahmura Lumaya, known in his shortened name Sri Lumay, a half-Tamil and half Malay minor prince of the Chola dynasty in Sumatra established the Indianized Rajahnate of Cebu in Cebu Island on the Philippine Archipelago. Alai Gate and Qutub Minar were built during the Mamluk and Khalji dynasties of the Delhi Sultanate.[16] Early 13th century – Xia Gui paints Twelve Views from a Thatched Hut, during the Southern Song dynasty (now in Nelson-Atkins Museum of Art, Kansas City, Missouri). The motet form originates out of the Ars antiqua tradition of Western European music. Manuscript culture develops out of this time period in cities in Europe, which denotes a shift from monasteries to cities for books. Pecia system of copying books develops in Italian university-towns and was taken up by the University of Paris in the middle of the century. Wooden movable type printing invented by Chinese governmental minister Wang Zhen in 1298. The earliest known rockets, landmines, and handguns are made by the Chinese for use in warfare. The Chinese adopt the windmill from the Islamic world. Guan ware vase is made, Southern Song dynasty. It is now kept at Percival David Foundation of Chinese Art, London. 1250 – Cliff Palace, Mesa Verde, and other Ancestral Pueblo architectural complexes reach their apex[17] 1280s – Eyeglasses are invented in Venice, Italy. Late 13th century – Night Attack on the Sanjo Palace is made during the Kamakura period. It is now kept at Museum of Fine Arts, Boston. Late 13th century – Descent of the Amida Trinity, raigo triptych, is made, Kamakura period. It is now kept at the Art Institute of Chicago. The Neo-Aramaic languages begin to develop during the course of the century. Christianity in the 13th century ^ "Samudra Pasai worthy to be world historical site". Republika Online. 2017-03-24. Retrieved 2020-01-24. ^ Coedès, George (1968). Walter F. Vella (ed.). The Indianized States of Southeast Asia. trans.Susan Brown Cowing. University of Hawaii Press. ISBN 978-0-8248-0368-1. ^ "St. Thomas Aquinas". Catholic Encyclopedia. Retrieved 2023-12-09. ^ Brooks, Christopher (2020). 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During this era, they made several advancements in arts, culture, architecture, and other domains of life and knowledge. They also developed an efficient number system of their own which was subsequently used by other Mesoamerican civilisations, most notably the Aztecs, although with some variations. It was a number system that predominantly made use of dots and bars to represent numbers.Mayan Number System HistoryThe history of Mayan number system actually extends far beyond the Classic Period of the Mayans. For instance, the use of a shell glyph to represent zero has been found

from as early as 36 BC. According to some scholars, the use of zero was actually invented in Mesoamerica by the Olmecs, a civilisation which preceded the Mayans and had already come to an end around 4th century BC. Mayans borrowed certain elements from the Olmecs and made their original contributions as well.The Mayan number system revolved around the use of dots and bars in addition to the use of a shell glyph to represent zero.What was the Mayan Number System?The Mayan number system is basically a vigesimal number system which means that it uses 20 as its base. The use of 20 as base is also found in later civilisations such as the Aztecs. However, the number system of the Mayans was a bit more complex in that they used base 5 within the base 20. In other words, this means that number up to 19 could be represented in a certain way while after that the representation method changed.How did the Mayan Number System WorkThe Mayan number system revolved around the use of dots and bars in addition to the use of a shell glyph to represent zero. The dot was used to represent 1 and the bar was used to represent 5. Thus, for instance, 1 was represented with a single dot, 2 with two dots, three with three dots, and so on. Further, “5” was represented with a single horizontal bar and 10 with two horizontal bars. However, “20“ was not represented with four bars and instead a shell glyph along with a single dot was used to represent the figure of 20.Use of ZeroOne of the most interesting aspects of Mayan number system is the use of zero as a placeholder. This was particularly important for the Mayan Long Count calendar which counted the total number of days since the creation of the world according to Mayan mythology. Thus the symbol of shell glyph was used to represent zero and it frequently appears on the Long Count dates. It is generally thought that it was actually the Olmecs who invented zero and the Mayans took over the concept from them.Counting with Mayan NumbersThe Mayan number system was quite efficient and counting with the Mayan number system was not a very complex process. Using the simple symbols of dots, bars, and a shell glyph for zero, they could count any given numbers. Starting from 1 with a single dot, the number went up to 19 for which three horizontal bars and four dots were used. The three bars represented 15 and the four dots represented the additional four numbers. From 21 to 40, the counting process was quite similar with the addition of an extra dot. For instance, while “11” was represented with two bars and a dot, 31 could be represented with two bars and two dots. After 40, another dot was added in the counting and it went on. A large figure like 5124 could be represented in base 20 using the symbols of 12 (multiplied twice by 20), 16 (multiplied once by 20), and 4.Addition and SubtractionAddition and subtraction in Mayan number system was also performed using the same dot and bar notations. As an example, consider the addition of 5 into 8 to get 13. For this a bar representing 5 is added into a bar and three dots representing 8 to get two bars and three dots representing 13. The exact reversal of this process can be used for subtraction in Mayan number system. In certain ways, use of symbols made addition and subtraction of large numbers easier.Mayan Second Number SystemThe Mayans actually had two number systems joined together to form one complete system. The first number system used 5 as its base and it only represented the numbers from 1 till 19. The second number system used 20 as its base and was used to represent numbers starting from 20. For instance, in base 5, 20 would be presented with four bars. But instead of that, in base 20, it is represented with a shell glyph for zero in addition to a single dot, thus using 20 as base. Interestingly, Mayans sometimes used a very peculiar number system which used images for numbers. This system was sometimes used on calendars and to date buildings and was clearly more difficult to manipulate than the former.Advantages of the Mayan Number SystemThere were certain advantages of the Mayan number system which made use of symbols instead of actual numerals. To being with, it made simple arithmetic very easy compared to the one which involved the actual numerals. While dealing with the symbols instead of numbers, it is easy to handle the sums since only the symbols have to be manipulated instead of performing the actual calculations. Second advantage is that large numbers can be easily expressed and this made representation of large time period on Mayan Long Count simple.Mayan Number System SummaryMayan civilisation made impressive advancements in different domains of culture, art and knowledge during its Classic Period which extended from 250AD to 900AD. They also developed their own number systems which used 5 and 20 as its bases. The use of zero used in the Mayan number system was probably taken over from the previous Olmec civilisation. It was used as a placeholder in Mayan number system in addition to the use of dots and bars for representation of numbers. The Mayan number system made addition and subtraction relatively simple since only symbols had to be manipulated instead of doing the actual calculations.