Click to prove you're human

 There are 18 people at the playground. 5 leave. How many are left? There are 36 shops in a mall. If 14 of them are closed, find the number of shops that are open? The Paulson family had 25 peanuts, but 7 got used in a recipe. How many peanuts do they have now? Bob has 24 candles. If 12 of them are burned, find the number of candles that are left with Bob? Ron and Jim worked together at a toy shop. They sold 56 toys together. If Ron sold 9 toys, how many toys did Jim sell? A building is 22 m high and another building is 15m high. What is the difference between their heights? Rebecca has 10 beads. 6 beads are red and the rest are blue. How many blue beads does she have? Paul has 2 books in his bag. His bag has a capacity of 8 books. How many books are needed to fill the bag to its full? Gary has 5 teddy bears. She gives away 2 of them to her best friend. How many teddy bears does she have now? Bob, Joe, and Sam had 7 pillows, but 3 got lost under the bed. How many pillows do they have now? Invitations were sent to 8 relatives for a family get-together. Only 6 relatives came. How many relatives did not come? John had 3 pairs of sunglasses, but 1 disappeared during a class field trip. How many pairs of sunglasses does he have now? This worksheet explains how to cross out pictures to solve simple subtraction problems. A sample problem is solved. There are 7 apples on the tree. Marry takes 2. How many are left on the tree? Write the answer in the box. There are 10 books on a bookshelf. If there are 5 students and each student needs one, how many books will left? Jackson has 8 tomatoes. 2 of them are rotten. How many are not rotten? Tim has 6 hammers. 4 are lost. How many does he still have? Robin has 6 fans at home. 2 are not working. How many are working? One of the four basic arithmetic operations "Subtract" redirects here. For other uses, see Subtraction (disambiguation). 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: "Subtraction" – news · newspapers · books · scholar · JSTOR (May 2018) (Learn how and when to remove this message) "5 − 2 = 3" (verbally, "five minus two equals three") Arithmetic operationsvte Addition (+) term + term summand + summand addend + addend augend + addend } = {\displaystyle \scriptstyle \left.{\begin{matrix}\scriptstyle {\text{term}}\,+\,{\text{term}}\\\scriptstyle {\text{summand}}\,+\,{\text{summand}}\\\scriptstyle {\text{addend}}\,+\,{\text{addend}}\\\scriptstyle {\text{augend}}\,+\,{\text{addend}}\end{matrix}}\right\}\,=\,} sum {\displaystyle \scriptstyle {\text{sum}}} Subtraction (−) term − term minuend − subtrahend } = {\displaystyle \scriptstyle \left.{\begin{matrix}\scriptstyle {\text{term}}\,-\,{\text{term}}\\\scriptstyle {\text{minuend}}\,-\,{\text{subtrahend}}\end{matrix}}\right\}\,=\,} difference {\displaystyle \scriptstyle {\text{difference}}} Multiplication (×) factor × factor multiplier × multiplicand } = {\displaystyle \scriptstyle \left.{\begin{matrix}\scriptstyle {\text{factor}}\,\times \,{\text{factor}}\\\scriptstyle {\text{multiplier}}\,\times \,{\text{multiplicand}}\end{matrix}}\right\}\,=\,} product {\displaystyle \scriptstyle {\text{product}}} Division (÷) dividend divisor numerator denominator } = {\displaystyle \scriptstyle \left.{\begin{matrix}\scriptstyle {\frac {\scriptstyle {\text{dividend}}}{\scriptstyle {\text{divisor}}}}\\[1ex]\scriptstyle {\frac {\scriptstyle {\text{numerator}}}{\scriptstyle {\text{denominator}}}}\end{matrix}}\right\}\,=\,} { fraction quotient ratio {\displaystyle \scriptstyle \left\{{\begin{matrix}\scriptstyle {\text{fraction}}\\\scriptstyle {\text{quotient}}\\\scriptstyle {\text{ratio}}\end{matrix}}\right.} Exponentiation base exponent base power } = {\displaystyle \scriptstyle \left.{\begin{matrix}\scriptstyle {\text{base}}^{\text{exponent}}\\\scriptstyle {\text{base}}^{\text{power}}\end{matrix}}\right\}\,=\,} power {\displaystyle \scriptstyle {\text{power}}} nth root (√) radicand degree = {\displaystyle \scriptstyle {\sqrt[{\text{degree}}]{\text{radicand}}}\,=\,} root {\displaystyle \scriptstyle {\text{root}}} Logarithm (log) log base (anti-logarithm) = {\displaystyle \scriptstyle \log _{\text{base}}({\text{anti-logarithm}})\,=\,} logarithm {\displaystyle \scriptstyle {\text{logarithm}}} vte Placard outside a shop in Bordeaux advertising subtraction of 20% from the price of the second perfume purchased. Subtraction (which is signified by the minus sign, –) is one of the four arithmetic operations along with addition, multiplication and division. Subtraction is an operation that represents removal of objects from a collection.[1] For example, in the adjacent picture, there are 5 − 2 peaches—meaning 5 peaches with 2 taken away, resulting in a total of 3 peaches. Therefore, the difference of 5 and 2 is 3; that is, 5 − 2 = 3. While primarily associated with natural numbers in arithmetic, subtraction can also represent removing or decreasing physical and abstract quantities using different kinds of objects including negative numbers, fractions, irrational numbers, vectors, decimals, functions, and matrices.[2] In a sense, subtraction is the inverse of addition. That is, c = a − b if and only if c + b = a. In words: the difference of two numbers is the number that gives the first one when added to the second one. Subtraction follows several important patterns. It is anticommutative, meaning that changing the order changes the sign of the answer. It is also not associative, meaning that when one subtracts more than two numbers, the order in which subtraction is performed matters. Because 0 is the additive identity, subtraction of it does not change a number. Subtraction also obeys predictable rules concerning related operations, such as addition and multiplication. All of these rules can be proven, starting with the subtraction of integers and generalizing up through the real numbers and beyond. General binary operations that follow these patterns are studied in abstract algebra. In computability theory, considering subtraction is not well-defined over natural numbers, operations between numbers are actually defined using "truncated subtraction" or monus.[3] Subtraction is usually written using the minus sign "−" between the terms; that is, in infix notation. The result is expressed with an equals sign. For example, 2 − 1 = 1 {\displaystyle 2-1=1} (pronounced as "two minus one equals one") and 4 − 6 = − 2 {\displaystyle 4-6=-2} (pronounced as "four minus six equals negative two"). Nonetheless, some situations where subtraction is "understood", even though no symbol appears; in accounting, a column of two numbers, with the lower number in red, usually indicates that the lower number in the column is to be subtracted, with the difference written below, under a line.[4] The number being subtracted is the subtrahend, while the number it is subtracted from is the minuend. The result is the difference, that is:[5] m i n u e n d − s u b t r a h e n d = d i f f e r e n c e {\displaystyle {\rm {minuend}}-{\rm {subtrahend}}={\rm {difference}}} . All of this terminology derives from Latin. "Subtraction" is an English word derived from the Latin verb subtrahere, which in turn is a compound of sub "from under" and trahere "to pull". Thus, to subtract is to draw from below, or to take away.[6] Using the gerundive suffix -nd results in "subtrahend", "thing to be subtracted".[a] Likewise, from minuere "to reduce or diminish", one gets "minuend", which means "thing to be diminished". Imagine a line segment of length b with the left end labeled a and the right end labeled c. Starting from a, it takes b steps to the right to reach c. This movement to the right is modeled mathematically by addition: a + b = c. From c, it takes b steps to the left to get back to a. This movement to the left is modeled by subtraction: c − b = a. Now, a line segment labeled with the numbers 1, 2, and 3. From position 3, it takes no steps to the left to stay at 3, so 3 − 0 = 3. It takes 2 steps to the left to get to position 1, so 3 − 2 = 1. This picture is inadequate to describe what would happen after going 3 steps to the left of position 3. To represent such an operation, the line must be extended. To subtract arbitrary natural numbers, one begins with a line containing every natural number (0, 1, 2, 3, 4, 5, 6, ...). From 3, it takes 3 steps to the left to get to 0, so 3 − 3 = 0. But 3 − 4 is still invalid, since it again leaves the line. The natural numbers are not a useful context for subtraction. The solution is to consider the integer number line (..., −3, −2, −1, 0, 1, 2, 3, ...). This way, it takes 4 steps to the left from 3 to get to −1: 3 − 4 = −1. Subtraction of natural numbers is not closed: the difference is not a natural number unless the minuend is greater than or equal to the subtrahend. For example, 26 cannot be subtracted from 11 to give a natural number. Such a case uses one of two approaches: Conclude that 26 cannot be subtracted from 11; subtraction becomes a partial function. Give the answer as an integer representing a negative number, so the result of subtracting 26 from 11 is −15. The field of real numbers can be defined specifying only two binary operations, addition and multiplication, together with unary operations yielding additive and multiplicative inverses. The subtraction of a real number (the subtrahend) from another (the minuend) can then be defined as the addition of the minuend and the additive inverse of the subtrahend. For example, 3 − π = 3 + (−π). Alternatively, instead of requiring these unary operations, the binary operations of subtraction and division can be taken as basic. Subtraction is anti-commutative, meaning that if one reverses the terms in a difference left-to-right, the result is the negative of the original result. Symbolically, if a and b are any two numbers, then a − b = −(b − a). Subtraction is non-associative, which comes up when one tries to define repeated subtraction. In general, the expression "a − b − c" can be defined to mean either (a − b) − c or a − (b − c), but these two possibilities lead to different answers. To resolve this issue, one must establish an order of operations, with different orders yielding different results. In the context of integers, subtraction of one also plays a special role: for any integer a, the integer (a − 1) is the largest integer less than a, also known as the predecessor of a. When subtracting two numbers with units of measurement such as kilograms or pounds, they must have the same unit. In most cases, the difference will have the same unit as the original numbers. Changes in percentages can be reported in at least two forms, percentage change and percentage point change. Percentage change represents the relative change between the two quantities as a percentage, while percentage point change is simply the number obtained by subtracting the two percentages.[7][8][9] As an example, suppose that 30% of widgets made in a factory are defective. Six months later, 20% of widgets are defective. The percentage change is 20% − 30%/30% = −1/3 = −33+1/3%, while the percentage point change is −10 percentage points. The method of complements is a technique used to subtract one number from another using only the addition of positive numbers. This method was commonly used in mechanical calculators, and is still used in modern computers. Binarydigit Ones' complement 0 1 1 0 To subtract a binary number y (the subtrahend) from another number x (the minuend), the ones' complement of y is added to x and one is added to the sum. The leading digit "1" of the result is then discarded. The method of complements is especially useful in binary (radix 2) since the ones' complement is very easily obtained by inverting each bit (changing "0" to "1" and vice versa). And adding 1 to get the two's complement can be done by simulating a carry into the least significant bit. For example: 01100100 (x, equals decimal 100) - 00010110 (y, equals decimal 22) becomes the sum: 01100100 (x) + 11101001 (ones' complement of y) + 1 (to get the two's complement) ——————————— 101001110 Dropping the initial "1" gives the answer: 01001110 (equals decimal 78) Methods used to teach subtraction to elementary school vary from country to country, and within a country, different methods are adopted at different times. In what is known in the United States as traditional mathematics, a specific process is taught to students at the end of the 1st year (or during the 2nd year) for use with multi-digit whole numbers, and is extended in either the fourth or fifth grade to include decimal representations of fractional numbers. Almost all American schools currently teach a method of subtraction using borrowing or regrouping (the decomposition algorithm) and a system of markings called crutches.[10][11] Although a method of borrowing had been known and published in textbooks previously, the use of crutches in American schools spread after William A. Brownell published a study—claiming that crutches were beneficial to students using this method.[12] This system caught on rapidly, displacing the other methods of subtraction in use in America at that time. Some European schools employ a method of subtraction called the Austrian method, also known as the additions method. There is no borrowing in this method. There are also crutches (markings to aid memory), which vary by country.[13][14] Both these methods break up the subtraction as a process of one digit subtractions by place value. Starting with a least significant digit, a subtraction of the subtrahend: sj sj−1 ... s1 from the minuend mk mk−1 ... m1, where each si and mi is a digit, proceeds by writing down m1 − s1, m2 − s2, and so forth, as long as si does not exceed mi. Otherwise, mi is increased by 10 and some other digit is modified to correct for this increase. The American method corrects by attempting to decrease the minuend digit mi+1 by one (or continuing the borrow leftwards until there is a non-zero digit from which to borrow). The European method corrects by increasing the subtrahend digit si+1 by one. Example: 704 − 512. − 1 C D U 7 0 4 5 1 2 1 9 2 ⟵ c a r r y ⟵ M i n u e n d ⟵ S u b t r a h e n d ⟵ R e s t o r D i f f e r e n c e {\displaystyle {\begin{array}{rrrr}&\color {Red}-1\\&C&D&U\\&7&0&4\\&5&1&2\\\hline &1&9&2\\\end{array}}{\begin{array}{l}{\color {Red}\longleftarrow {\rm {carry}}}\\\\\longleftarrow \;{\rm {Minuend}}\\\longleftarrow \;{\rm {Subtrahend}}\\\longleftarrow {\rm {Rest\;or\;Difference}}\\\end{array}}} The minuend is 704, the subtrahend is 512. The minuend digits are m3 = 7, m2 = 0 and m1 = 4. The subtrahend digits are s3 = 5, s2 = 1 and s1 = 2. Beginning at the one's place, 4 is not less than 2 so the difference 2 is written down in the result's one's place. In the ten's place, 0 is less than 1, so the 0 is increased by 10, and the difference with 1, which is 9, is written down in the ten's place. The American method corrects for the increase of ten by reducing the digit in the minuend's hundreds place by one. That is, the 7 is struck through and replaced by a 6. The subtraction then proceeds in the hundreds place, where 6 is not less than 5, so the difference is written down in the result's hundred's place. We are now done, the result is 192. The Austrian method does not reduce the 7 to 6. Rather it increases the subtrahend hundreds digit by one. A small mark is made near or below this digit (depending on the school). Then the subtraction proceeds by asking what number when increased by 1, and 5 is added to it, makes 7. The answer is 1, and is written down in the result's hundreds place. There is an additional subtlety in that the student always employs a mental subtraction table in the American method. The Austrian method often encourages the student to mentally use the addition table in reverse. In the example above, rather than adding 1 to 5, getting 6, and subtracting that from 7, the student is asked to consider what number, when increased by 1, and 5 is added to it, makes 7. Example:[citation needed] 1 + ... = 3 The difference is written under the line. 9 + ... = 5The required sum (5) is too small. So, we add 10 to it and put a 1 under the next higher place in the subtrahend. 9 + ... = 15Now we can find the difference as before. (4 + 1) + ... = 7 The difference is written under the line. The total difference. Example:[citation needed] 7 − 4 = 3This result is only penciled in. Because the next digit of the minuend is smaller than the subtrahend, we subtract one from our penciled-in-number and mentally add ten to the next. 15 − 9 = 6 Because the next digit in the minuend is not smaller than the subtrahend, we keep this number. 3 − 1 = 2 In this method, each digit of the subtrahend is subtracted from the digit above it starting from right to left. If the top number is too small to subtract the bottom number from it, we add 10 to it; this 10 is "borrowed" from the top digit to the left, which we subtract 1 from. Then we move on to subtracting the next digit and borrowing as needed, until every digit has been subtracted. Example:[citation needed] 3 − 1 = ... We write the difference under the line. 5 − 9 = ... The minuend (5) is too small! So, we add 10 to it. The 10 is "borrowed" from the digit on the left, which goes down by 1. 15 − 9 = ... Now the subtraction works, and we write the difference under the line. 6 − 4 = ... We write the difference under the line. The total difference. A variant of the American method where all borrowing is done before all subtraction.[15] Example: 1 − 3 = not possible.We add a 10 to the 1. Because the 10 is "borrowed" from the nearby 5, the 5 is lowered by 1. 4 − 9 = not possible.So we proceed as in step 1. Working from right to left:11 − 3 = 8 14 − 9 = 5 6 − 4 = 2 The partial differences method is different from other vertical subtraction methods because no borrowing or carrying takes place. In their place, one places plus or minus signs depending on whether the minuend is greater or smaller than the subtrahend. The sum of the partial differences is the total difference.[16] Example: The smaller number is subtracted from the greater:700 − 400 = 300Because the minuend is greater than the subtrahend, this difference has a plus sign. The smaller number is subtracted from the greater:90 − 50 = 40Because the minuend is smaller than the subtrahend, this difference has a minus sign. The smaller number is subtracted from the greater:3 − 1 = 2Because the minuend is greater than the subtrahend, this difference has a plus sign. +300 − 40 + 2 = 262 Instead of finding the difference digit by digit, one can count up the numbers between the subtrahend and the minuend.[17] Example: 1234 − 567 = can be found by the following steps: 567 + 3 = 570 570 + 30 = 600 600 + 400 = 1000 1000 + 234 = 1234 Add up the value from each step to get the total difference: 3 + 30 + 400 + 234 = 667. Another method that is useful for mental arithmetic is to split up the subtraction into small steps.[18] Example: 1234 − 567 = can be solved in the following way: 1234 − 500 = 734 734 − 60 = 674 674 − 7 = 667 The same change method uses the fact that adding or subtracting the same number from the minuend and subtrahend does not change the answer. One simply adds the amount needed to get zeros in the subtrahend.[19] Example: "1234 − 567 =" can be solved as follows: 1234 − 567 = 1237 − 570 = 1267 − 600 = 667 Absolute difference Decrement Elementary arithmetic Method of complements Negative number Plus and minus signs Monus (truncated subtraction) ^ "Subtrahend" is shortened by the inflectional Latin suffix -us, e.g. remaining un-declined as in numerus subtrahendus "the number to be subtracted". ^ "What is to Subtract?". SplashLearn. 28 April 2022. Retrieved 2022-12-13. ^ Weisstein, Eric W. "Subtraction". mathworld.wolfram.com. Retrieved 2020-08-26. ^ Cutland, Nigel. 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For the year AD 1, and other uses, see One (disambiguation) and Number One (disambiguation) This article contains special characters. Without proper rendering support, you may see question marks, boxes, or other symbols. Natural number ← 0 1 2 → −1 0 1 2 3 4 5 6 7 8 9 → List of numbersIntegers← 0 10 20 30 40 50 60 70 80 90 →CardinaloneOrdinal1st(first)Numeral systemunaryFactorization⌀Divisors1Greek numeralA´Roman numeralI, iGreek prefixmono-/haplo-Latin prefixuni-Binary12Ternary13Senary16Octal18Duodecimal112Hexadecimal116Greek numeralα'Arabic, Kurdish, Persian, Sindhi, Urdu١Assamese & Bengali১Chinese numeral一/弌/壹Devanāgarī१Santali᱑Ge'ez፩GeorgianჁ/ⴀ/ა(Ani)Hebrewא Japanese numeral一/壱Kannada೧Khmer᧡Armenianև Malayalam൧Meitei꯱Thai๑Tamil௧Telugu౧Babylonian numeral𒐕Egyptian hieroglyph, Aegean numeral, Chinese counting rod𝍠Mayan numeral•Morse code. _ _ _ _ 1 (one, unit, unity) is a number, numeral, and glyph. It is the first and smallest positive integer of the infinite sequence of natural numbers. This fundamental property has led to its unique uses in other fields, ranging from science to sports, where it commonly denotes the first, leading, or top thing in a group. 1 is the unit of counting or measurement, a determiner for singular nouns, and a gender-neutral pronoun. Historically, the representation of 1 evolved from ancient Sumerian and Babylonian symbols to the modern Arabic numeral. In mathematics, 1 is the multiplicative identity, meaning that any number multiplied by 1 equals the same number. 1 is by convention not considered a prime number. In digital technology, 1 represents the "on" state in binary code, the foundation of computing. Philosophically, 1 symbolizes the ultimate reality or source of existence in various traditions. The number 1 is the first natural number after 0. Each natural number, including 1, is constructed by succession, that is, by adding 1 to the previous natural number. The number 1 is the multiplicative identity of the integers, real numbers, and complex numbers, that is, any number n {\displaystyle n} multiplied by 1 remains unchanged (1 × n = n × 1 = n {\displaystyle 1\times n=n\times 1=n}). As a result, the square (1 2 = 1 {\displaystyle 1^{2}=1}), square root (1 = 1 {\displaystyle {\sqrt {1}}=1}), and any other power of 1 is always equal to 1 itself.[1] 1 is its own factorial (1 ! = 1 {\displaystyle 1!=1}), and 0! is also 1. These are a special case of the empty product.[2] Although 1 meets the naïve definition of a prime number, being evenly divisible only by 1 and itself (also 1), by modern convention it is regarded as neither a prime nor a composite number.[3] Different mathematical constructions of the natural numbers represent 1 in various ways. In Giuseppe Peano's original formulation of the Peano axioms, a set of postulates to define the natural numbers in a precise and logical way, 1 was treated as the starting point of the sequence of natural numbers.[4][5] Peano later revised his axioms to begin the sequence with 0.[4][6] In the Von Neumann cardinal assignment of natural numbers, where each number is defined as a set that contains all numbers before it, 1 is represented as the singleton { 0 } {\displaystyle \{0\}} , a set containing only the element 0.[7] The unary numeral system, as used in tallying, is an example of a "base-1" number system, since only one mark – the tally itself – is needed. While this is the simplest way to represent the natural numbers, base-1 is rarely used as a practical base for counting due to its difficult readability.[8][9] In many mathematical and engineering problems, numeric values are typically normalized to fall within the unit interval ([0,1]), where 1 represents the maximum possible value. For example, by definition 1 is the probability of an event that is absolutely or almost certain to occur.[10] Likewise, vectors are often normalized into unit vectors (i.e., vectors of magnitude one), because these often have more desirable properties. Functions are often normalized by the condition that they have integral one, maximum value one, or square integral one, depending on the application.[11] 1 is the value of Legendre's constant, introduced in 1808 by Adrien-Marie Legendre to express the asymptotic behavior of the prime-counting function.[12] The Weil's conjecture on Tamagawa numbers states that the Tamagawa number τ (G) {\displaystyle \tau (G)} , a geometrical measure of a connected linear algebraic group over a global number field, is 1 for all simply connected groups (those that are path-connected with no 'holes').[13][14] 1 is the most common leading digit in many sets of real-world numerical data. This is a consequence of Benford's law, which states that the probability for a specific leading digit d {\displaystyle d} is log 10 (d + 1 d) {\textstyle \log _{10}\left({\frac {d+1}{d}}\right)} . The tendency for real-world numbers to grow exponentially or logarithmically biases the distribution towards smaller leading digits, with 1 occurring approximately 30% of the time.[15] See also: One (pronoun) One originates from the Old English word an, derived from the Germanic root *ainaz, from the Proto-Indo-European root *oi-no- (meaning "one, unique").[16] Linguistically, one is a cardinal number used for counting and expressing the number of items in a collection of things.[17] One is most commonly a determiner used with singular countable nouns, as in one day at a time.[18] The determiner has two senses: numerical one (I have one apple) and singulative one (one day I'll do it).[19] One is also a gender-neutral pronoun used to refer to an unspecified person or to people in general as in one should take care of oneself.[20] Words that derive their meaning from one include alone, which signifies all one in the sense of being by oneself, none meaning not one, once denoting one time, and atone meaning to become at one with the someone. Combining alone with only (implying one-like) leads to lonely, conveying a sense of solitude.[21] Other common numeral prefixes for the number 1 include uni- (e.g., unicycle, universe, unicorn), sol- (e.g., solo dance), derived from Latin, or mono- (e.g., monorail, monogamy, monopoly) derived from Greek.[22][23] See also: History of the Hindu–Arabic numeral system Among the earliest known records of a numeral system, is the Sumerian decimal-sexagesimal system on clay tablets dating from the first half of the third millennium BCE.[24] Archaic Sumerian numerals for 1 and 60 both consisted of horizontal semi-circular symbols, [25] by c. 2350 BCE, the older Sumerian curviform numerals were replaced with cuneiform symbols, with 1 and 60 both represented by the same mostly vertical symbol. The Sumerian cuneiform system is a direct ancestor to the Eblaite and Assyro-Babylonian Semitic cuneiform decimal systems.[26] Surviving Babylonian documents date mostly from Old Babylonian (c. 1500 BCE) and the Seleucid (c. 300 BCE) eras.[24] The Babylonian cuneiform script notation for numbers used the same symbol for 1 and 60 as in the Sumerian system.[27] The most commonly used glyph in the modern Western world to represent the number 1 is the Arabic numeral, a vertical line, often with a serif at the top and sometimes a short horizontal line at the bottom. It can be traced back to the Brahmic script of ancient India, as represented by Ashoka as a simple vertical line in his Edicts of Ashoka in c. 250 BCE.[28] This script's numeral shapes were transmitted to Europe via the Maghreb and Al-Andalus during the Middle Ages [29] The Arabic numeral, and other glyphs used to represent the number one (e.g., Roman numeral (I), Chinese numeral (一)) are logograms. These symbols directly represent the concept of 'one' without breaking it down into phonetic components.[30] This Woodstock typewriter from the 1940s lacks a separate key for the numeral 1.Hoefler Text, a typeface designed in 1991, uses text figures and represents the numeral 1 as similar to a small-caps I. In modern typefaces, the shape of the character for the digit 1 is typically typeset as a lining figure with an ascender, such that the digit is the same height and width as a capital letter. However, in typefaces with text figures (also known as Old style numerals or non-lining figures), the glyph usually is of x-height and designed to follow the rhythm of the lowercase, as, for example, in .[31] In old-style typefaces (e.g., Hoefler Text), the typeface for numeral 1 resembles a small caps version of I, featuring parallel serifs at the top and bottom, while the capital I retains a full-height form. This is a relic from the Roman numerals system where I represents 1.[32] Many older typewriters do not have a dedicated key for the numeral 1, requiring the use of the lowercase letter L or uppercase I as substitutes.[33][34][35][36] The 24-hour tower clock in Venice, using J as a symbol for 1 The lower case "j" can be considered a swash variant of a lower-case Roman numeral "i", often employed for the final i of a "lower-case" Roman numeral. It is also possible to find historic examples of the use of j or J as a substitute for the Arabic numeral 1.[37][38][39][40] In German, the serif at the top may be extended into a long upstroke as long as the vertical line. This variation can lead to confusion with the glyph used for seven in other countries and so to provide a visual distinction between the two the digit 7 may be written with a horizontal stroke through the vertical line.[41] In digital technology, data is represented by binary code, i.e., a base-2 numeral system with numbers represented by a sequence of 1s and 0s. Digitised data is represented in physical devices, such as computers, as pulses of electricity through switching devices such as transistors or logic gates where "1" represents the value for "on". As such, the numerical value of true is equal to 1 in many programming languages.[42][43] In lambda calculus and computability theory, natural numbers are represented by Church encoding as functions, where the Church numeral for 1 is represented by the function f {\displaystyle f} applied to an argument x {\displaystyle x} once (1 f x = f x {\displaystyle fx=fx}).[44] In physics, selected physical constants are set to 1 in natural unit systems in order to simplify the form of equations; for example, in Planck units the speed of light equals 1.[45] Dimensionless quantities are also known as 'quantities of dimension one'.[46] In quantum mechanics, the normalization condition for wavefunctions requires the integral of a wavefunction's squared modulus to be equal to 1.[47] In chemistry, hydrogen, the first element of the periodic table and the most abundant element in the known universe, has an atomic number of 1. Group 1 of the periodic table consists of hydrogen and the alkali metals.[48] In philosophy, the number 1 is commonly regarded as a symbol of unity, often representing God or the universe in monotheistic traditions.[49] The Pythagoreans considered the numbers to be plural and therefore did not classify 1 itself as a number, but as the origin of all numbers. In their number philosophy, where odd numbers were considered male and even numbers female, 1 was considered neutral capable of transforming even numbers to odd and vice versa by addition.[49] The Neopythagorean philosopher Nicomachus of Gerasa's number treatise, as recovered by Boethius in the Latin translation Introduction to Arithmetic, affirmed that one is not a number, but the source of number.[50] In the philosophy of Plotinus (and that of other neoplatonists), 'The One' is the ultimate reality and source of all existence.[51] Philo of Alexandria (20 BC – AD 50) regarded the number one as God's number, and the basis for all numbers.[52] −1 0.999... – Alternative decimal expansion of 1 ^ Colman 1912, pp. 9–10, chapt.2. ^ Graham, Knuth & Patashnik 1994, p. 111. ^ Caldwell & Xiong 2012, pp. 8–9. ^ a b Kennedy 1974, pp. 389. ^ Peano 1889, p. 1. ^ Peano 1908, p. 27. ^ Halmos 1974, p. 32. ^ Hodges 2009, p. 14. ^ Hext 1990. ^ Graham, Knuth & Patashnik 1994, p. 381. ^ Blokhintsev 2012, p. 35. ^ Pintz 1980, pp. 733–735. ^ Gaitsgory & Lurie 2019, pp. 204–307. ^ Kottwitz 1988. ^ Miller 2015, pp. 3–4. ^ "Online Etymology Dictionary". etymonline.com. 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View (previous 50 | next 50) (20 | 50 | 100 | 250 | 500)ASCII (links | edit) Angle (links | edit) Break key (links | edit) Baudot code (links | edit) Cube (links | edit) Chinese remainder theorem (links | edit) Decimal (links | edit) Dimensional analysis (links | edit) Duodecimal (links | edit) Electron (links | edit) Exponential function (links | edit) EBCDIC (links | edit) Giga- (links | edit) Integer (links | edit) ISO/IEC 8859-1 (links | edit) IBM 3270 (links | edit) IBM PC keyboard (links | edit) Kilo- (links | edit) List of Latin words with English derivatives (links | edit) Mega- (links | edit) Modular arithmetic (links | edit) Marbury v. Madison (links | edit) Natural number (links | edit) Number theory (links | edit) Number (links | edit) Prime number (links | edit) Radian (links | edit) International System of Units (links | edit) Metric prefix (links | edit) Scroll Lock (links | edit) System request (links | edit) Transcendental number (links | edit) Unit (links | edit) 0 (links | edit) Triskaidekaphobia (links | edit) Friday the 13th (links | edit) 13 (number) (links | edit) Eldred v. Ashcroft (links | edit) Chain letter (links | edit) Edwards v. Aguillard (links | edit) ISO/IEC 8859-15 (links | edit) Euler's identity (links | edit) Fortune cookie (links | edit) Dimensionless quantity (links | edit) Imaginary unit (links | edit) Taboo (links | edit) 2 (links | edit) Brown v. Board of Education (links | edit) Roe v. Wade (links | edit) Sieve of Eratosthenes (links | edit) View (previous 50 | next 50) (20 | 50 | 100 | 250 | 500) Retrieved from " WhatLinksHere/1" My friend Anni uses IXL Learning in her classroom. She is a teacher at the Tennessee School for the Deaf in Knoxville. She had showed me the program previously, and I thought it was fantastic. So when the opportunity came up to review the program I jumped at the chance. Folks, HONESTLY, hold onto your hat. This is probably one of the finest programs I have EVER seen when it comes to homeschooling, and I am a HUGE HUGE FAN. This review will be CHOCKED FULL because there is that much to talk about. DO NOT MISS THIS ONE! And we were NOT disappointed. Holy Cow! I barely know where to begin because there is just so much amazing things to cover in this review. I reviewed this program for the nine children that we homeschool here on the farm ranging in grade from pre-K to seventh grade, and every single child found the program easy to use and positive. No one complained about having to do IXL, like, EVER. Here was the breakdown in "grades" that we are on here at our house: Genevieve (Pre-K) Hannah (Pre-K) Eoin "Owen" (K) Abigail (1st) Kari (4th) Sidge (4th) Isaac (4th or 5th) Ana (6th) Gabe (7th) So how does it work keeping track of nine children on a program? Well, it's a super easy. Once we sign in to our main "family" account, a new screen pops up asking who is using the program for the day. This screen allows each child to pick his/her name and go directly into their own "learning center." (In addition, I have my own log-in as a parent as a well.) Check out how this looks below: So let's say that I want to log in as Gabe (who is in seventh grade.) There he is -- a basketball on the screen. (We were allowed to pick an icon that matched each child.) Once Gabe clicks on his name, he is brought to another screen Gabe then has his own secret word that he has to type in. (I made these super easy so that no one forgot their word.) There are then a variety of sections that the student can go to. These are all grouped under: Check out this photo below: Learning Let's start by looking at the "Learning" section. It may be a little hard to see on the screen shot, but the student has the following choices: Recommendations: This is the section up on the screen above. It has the student select their grade level to explore math and language art topics that IXL recommends for them to begin practicing. They can then pick any skill they'd like to try. Diagnostic: This is a way to see how your student is doing in different areas and figure out where they should start. This section covers only Math and Language Arts. The student answers questions to help narrow down what level they are on so that you can really focus on that when they step into the program. Just for a sample, I am including a screen shot of one of my three fourth graders. I am keeping them anonymous just to protect them. As you can see, they are mostly in about the 4th grade level on most things (which is great news for me!) As they answer more and more questions, it narrows them down more and more: Math Language Arts Science Social Studies Spanish TN Standards: Love this section! Your student (and YOU!) can see what things they should be knowing/learning for their current grade level. Awards: This is a fun section where you can work to uncover hidden pictures based on skills you have practiced. The picture below is an example of what a pre-K student gets when he/she clicks on the "awards" section. You can see that as soon as they accomplish what is requested of them, they get the opportunity to uncover that square. I really appreciate that the program really tries to make things "look" appropriate for that particular age. Fore example, check out the 8th grade "awards" page. You can tell that it is for a higher level student: AnalyticsOkay now that I've finished talking about the "Learning" section, let's spend a bit of time on the Analytics section of this program. It is broken down into the following sections: Usage: The picture below breaks down how much Ana has been on the program. It also gives a breakdown of her practice by category and her practice by day: Diagnostic: This link actually doubles with the one in the "Learning" section so refer back above for more on this. Trouble Spots: This page features a breakdown of questions that your student has missed. For example, below I checked out Isaac's trouble spots. I can choose which child, what subject, what grade levels, and also a date range. Below, I picked any trouble spots for Isaac in Science and here is what came up: Scores: In the picture below, you can see the scores for one of my students. Things they haven't done at all don't have a score. Things they have done have a score, a date, and how much time they spent on them: Questions: Here you can select a skill to view how your student is doing in that category. Progress and Improvement: This category breaks down the skill, time spent, questions, and score improvement for each student. Honestly folks, this program is simply uh-maz-ing. I cannot recommend it enough. Please take a moment to give IXL Learning a thorough look. You can pay monthly or yearly. The program runs about $20 per month for one child. However, if you buy it for the year it is about $13 a month. For four children, it is about $32 a month for the yearly membership and $23 for a yearly membership.These prices are INCREDIBLY reasonable and worth every single penny. TRUST ME! As always, feel free to message me for more information about this program.