

TABLES OF NUMERALS AND OTHERS MATHEMATICAL TERMS IN DIFFERENT LANGUAGES

Appendix to the volume for the 23rd ICMI Study (2016)

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The following tables constitute an appendix to the 23rd ICMI Study Volume. At first this was thought to be a material appendix included into that volume; nevertheless, the length of the table, the difficulty to find fonts to write in alphabets different from the Latin one, and the kind of sources to which we refer – that are mostly web sites – suggested us to make this appendix an on-line source, in order to permit to the reader a simpler consultation both of the tables and of the cited web sites.

Our aim in creating those tables was to show how different languages present different constructions for the names of the numbers, and for other mathematical terms, permitting to the reader a better understanding of the topics treated in the ICMI Study.

The first set of tables – following the title ‘Numerals’ – presents the name of numbers in several languages, grouped by families listed in alphabetical order. The last two tables instead show the names for some of the terms related to positional notation and arithmetical operations, respectively.

Where it was possible, the words were written both in the native writing system and in Latin transliteration or phonetic transliteration. We made an extensive use of footnotes in order to clarify and explain as much details and information as possible. However, in case that someone wished to know something more about a particular language, we provide the links to our sources in the first footnote related to a specific language.

The languages listed in the tables clearly does not complete the list of all possible languages.

In the case of numerals, we selected a number of languages in order to produce a sizeable set of examples – compatibly with our contacts with native speakers to ask for revisions, in order to provide a plausible and reliable version of the numerals in each language.

In the case of terms related to positional notation and arithmetic operations, we chose to limit our discussion to a comparison between some European languages (in specific, some Germanic languages and some Romance languages – the most widespread ones) and the Mandarin language, in order to exemplify the differences between European languages and Chinese languages.

The issue of languages and on their influence on whole number arithmetics was considered in different working groups in the ICMI Conference. Specific chapters appear in the Study volume.

It is worthwhile to mention here the new book by Owens, Lean et al. (2017) that offers new insights on Papua New Guinea and Oceania.

References

Owens, K., & Lean, G. with Paraide, P., & Muke, C. (2017). *History of number: Evidence from Papua New Guinea and Oceania*. New York: Springer. details in <http://www.springer.com/us/book/9783319454825>

NUMERALS

Afro-asiatic languages

Language	0-1-2-3-4-5-6-7-8-9	10	Teens 11-12-13-14-15-16-17-18-19	20	21-22-23...	30-40-50-60-70-80-90	100	1000	10000
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Berber languages

Berber (Taqbaylit) ¹	ⵢⵍⵎⵉⵏ / ⵢⵓⵏ [yiwen/yan] ² , ⵛⵉⵏ [sin], ⵔⵓⵎ [kraɖ] ³ , ⵔⵓⵎⵓⵛ [kuz], ⵛⵉⵎⵎⵓⵛ [semmus], ⵛⵉⵔⵉⵛⵉⵛ [sɖis], ⵛⵓ [sa], ⵜⵓⵎⵓ [tam], ⵜⵓⵛⵓ [tza]	ⵎⵔⵓⵛ [mraw]	ⵎⵔⵓⵛ ⵢⵍⵎⵉⵏ / ⵎⵔⵓⵛ ⵢⵓⵏ [mraw yiwen/ mraw yan] ⁴ , ⵎⵔⵓⵛ ⵛⵉⵏ [mraw sin], ⵎⵔⵓⵛ ⵔⵓⵎ [mraw kraɖ], ⵎⵔⵓⵛ ⵔⵓⵎⵓⵛ [mraw kuz], ⵎⵔⵓⵛ ⵛⵉⵎⵎⵓⵛ [mraw semmus], ⵎⵔⵓⵛ ⵛⵉⵔⵉⵛⵉⵛ [mraw sɖis], ⵎⵔⵓⵛ ⵛⵓ [mraw sa], ⵎⵔⵓⵛ ⵜⵓⵎⵓ [mraw tam], ⵎⵔⵓⵛ ⵜⵓⵛⵓ [mraw tza]	[Snat n tmerwin] ⁵	Not found ⁶	[Kraɖt n tmerwin], [Kuzet n tmerwin], [Semmuset n tmerwin], [Sɖiset n tmerwin], [Sat n tmerwin], [Tamet n tmerwin], [Tzat n tmerwin] ⁷	ⵜⵓⵎⵉⵔⵉⵛ [tamiɖi]	ⵓⵔⵉⵛⵉⵛ [agim]	Not found
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1 Actually Berber is not a language, but a family of languages spoken among populations living in North Africa. In order to be coherent with our presentation in Chapter 3, we present here the names of the numbers in *Taqbaylit* or *Kabyle*, which is the most widespread Berber dialect in Algeria. [cit. Wikipedia:

https://en.wikipedia.org/wiki/Languages_of_Algeria#Berber]. For searching the names of numbers we have referred to an online dictionary: Amawal, The Berber Dictionary [\[http://www.amawal.net\]](http://www.amawal.net)

2 Taqbaylit numbers from 1 to 19 change depending on the gender of the noun to which the numbers is referred. Here we present only the masculine forms. Moreover, we must specify that Amawal [see footnote number 2] provides for number one also other names, as *ijjen*, *iji*, *wid*.

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- 3 Numbers from 3 to 9 have other possible names, for example another name for 3 is [*tlata*] and another name for 4 is [*rebea*]. For those versions we send back to Wikipedia [https://en.wikipedia.org/wiki/List_of_numbers_in_various_languages#Semitic_languages, at the section *Kabyle*].
- 4 We must say that other references may not agree with this version of the name of numbers that we present here. For example, some references indicate the presence of a 'd' between the units and teens: [*mraw d yan*], [*mraw d sin*], etc.; others present a switch in the order in which units and teens are said: [*yan d mraw*], [*sin d mraw*], etc. Moreover, we do not indicate here the word written in Bereber alphabet because none of the sites we consulted was indicating it.
- 5 There are two features in this version of the name of 20 that are worthy of notice: first, [*snat*] is the feminine form of [*sin*]. Since Amawal [see footnote number 2] does not provide the names of numbers bigger than 20 that are not multiples of 10, is possible that from 21 on there is only one form of the name of those numbers, independently of gender, or maybe there still remains both forms but the feminine form become the most commonly used. Second, Amawal does not provide a translation for the word [*tmerwin*], which seems to be used only in naming multiples of 10. But Wikipedia [https://en.wikipedia.org/wiki/Shilha_language#Numerals] indicates that in *Shilha*, another Berber language, 20 is read [*snat tmrawin*] where [*tmrawin*] is an archaic word for 'a ten'. Thus, we can suggest that [*snat tmrawin*] could literally mean 'two tens'. Also in this case we must specify that other references shows different versions of the name of 20, for example [*sin d'mraw*] or [*sin id mraw*], versions more coherent with positional values of digits.
- 6 None of the websites consulted indicated the names of this numbers. Amawal [see footnote number 2] brings only an example in which 27 is spelled as [*snat n tmerwin ed sa*]: clearly, this example and the general absence of informations concerning the names of numbers bigger than 20 can make us guess that the names of these numbers are coherent with the positional value of digits, but it is just an hypothesis.

Semitic languages

Arabic	صفر ⁸ [ʃifr]	عشرة [ʿaʃarä]	أحد عشر [aḥada ʿaʃar]	عشرون [ʿiʃrūna]	واحد وعشرون [wāḥidun wa-ʿiʃrūna]	ثلاثون [talātuna]	مائة [miʿat]	ألف [ʿalf]	عشرة آلاف [ʿaʃarä alaf]
	واحد [wāḥid]		اثنان [ʿitnā ʿaʃar]		اثنين وعشرون [ʿitnān wa-ʿiʃrūna]	أربعون [ʿarbaʿuna]			
	اثنان [ʿitnān]		ثلاثة عشر [talātā ʿaʃar]		ثلاثة وعشرون [talātā wa-ʿiʃrūna]	خمسون [ḥamsuna]			
	ثلاثة [talātā]		أربعة عشر [ʿarbaʿā ʿaʃar]		أربع وعشرون [ʿarbaʿā wa-ʿiʃrūna]	ستون [sittuna]			
	أربعة [ʿarbaʿā]		خمسة عشر [ḥamsāta ʿaʃar]		خمسة وعشرون [ḥamsāta wa-ʿiʃrūna]	سبعون [sabʿuna]			
	خمسة [ḥamsā]		ست عشر [sittāta ʿaʃar]		ستة وعشرون [sittāta wa-ʿiʃrūna]	ثمانون [tamānuna]			
	ستة [sittā]		سبعة عشر [sabʿāta ʿaʃar]		سبعة وعشرون [sabʿāta wa-ʿiʃrūna]	تسعون [tisʿuna]			
	سبعة [sabʿā]		ثمانية عشر [tamāniyāta ʿaʃar]		ثمانية وعشرون [tamāniyāta wa-ʿiʃrūna]				
	ثمانية [tamāniyā]		تسعة عشر [tisʿā ʿaʃar]		تسعة وعشرون [tisʿā wa-ʿiʃrūna]				
	تسعة [tisʿā]								

7 Similarly to the case of the names of 20, also for the other multiples of 10 we can observe the use of the feminine form of numbers from 3 to 9: [kradt], [kuʒet], ..., [tʒat].

8 Some arabian numerals change depending on the case and on the gender of the noun to which the numeral is referred. Here we show just one of the possible (masculine) forms of every numeral [for more informations see Wikipedia: https://en.wikipedia.org/wiki/Arabic_grammar#Numerals].

Hebrew (Modern)	אֶפֶס [efes]	עֶשֶׂר ['eser]	אַחַת עֶשְׂרֵה [ahat 'esre]	עֶשְׂרִים ['esrim]	עֶשְׂרִים וְאַחַת ['esrim we achad]	שְׁלוֹשִׁים [shloshim]	מֵאָה [mea]	אַלֶּף [elef]	עֶשְׂרֵת אֲלָפִים ['aseret alafim]
	אֶחָד ⁹ [achad]		שְׁתַּיִם עֶשְׂרֵה [shtayim 'esre]		עֶשְׂרִים וְשְׁתַּיִם ['esrim we shtaym]	אַרְבָּעִים [arba'im]			
	שְׁתַּיִם [shtayim]		שְׁלוֹשׁ עֶשְׂרֵה [shlosh 'esre]		עֶשְׂרִים וְשָׁלוֹשׁ ['esrim we shalosh]	חֲמִישִׁים [hamishim]			
	שָׁלוֹשׁ [shalosh]		אַרְבַּע עֶשְׂרֵה [arba 'esre]		עֶשְׂרִים וְאַרְבַּע ['esrim we arba']	שִׁשִּׁים [shishim]			
	אַרְבַּע [arba']		חֲמִשָּׁה עֶשְׂרֵה [hamisha 'esre]		עֶשְׂרִים וְחֲמִשָּׁה ['esrim we hamesh]	שִׁבְעִים [shiv'im]			
	חֲמִשָּׁה [hamesh]		שֵׁשׁ עֶשְׂרֵה [shisha 'esre]		עֶשְׂרִים וְשֵׁשׁ ['esrim we shesh]	שְׁמוֹנִים [shmonim]			
	שֵׁשׁ [shesh]		שִׁבְעַת עֶשְׂרֵה [shva 'esre]		עֶשְׂרִים וְשִׁבְעַת ['esrim we sheva']	תִּשְׁעִים [tish'im]			
	שִׁבְעַת [sheva']		שְׁמוֹנֵה עֶשְׂרֵה [shmona 'esre]		עֶשְׂרִים וְשְׁמוֹנֵה ['esrim we shmone]				
	שְׁמוֹנֵה [shmone]		תִּשְׁעַת עֶשְׂרֵה [tesha 'esre]		עֶשְׂרִים וְתִשְׁעַת ['esrim we tesha']				
	תִּשְׁעַת [tesha']								

⁹ All Hebrew numbers, except zero, have two forms, depending on the gender to which the numer is referred. Here, we list the feminine form of numbers, because this form is the most commonly used when counting in abstract [for more informations see: https://en.wikipedia.org/wiki/Hebrew_numerals].

Austro-asiatic languages

Language	0-1-2-3-4-5-6-7-8-9	10	Teens 11-12-13-14-15-16-17-18-19	20	21-22-23...	30-40-50-60-70-80-90	100	1000	10000
Khmer - Cambodia	សូន្យ [soun] ¹⁰ , មួយ [muəj], ពីរ [pi:], បី [bɛj], បួន [buən], ប្រាំ [pram], ប្រាំមួយ [pram muəj], ប្រាំពីរ [pram pi:], ប្រាំបី [pram bɛj], ប្រាំបួន [pram buən] ¹¹	ដប់ [dap]	ដប់មួយ [dap muəj], ដប់ពីរ [dap pi:], ដប់បី [dap bɛj], ដប់បួន [dap buən], ដប់ប្រាំ [dap pram], ដប់ប្រាំមួយ [dap pram muəj], ដប់ប្រាំពីរ [dap pram pi:], ដប់ប្រាំបី [dap pram bɛj], ដប់ប្រាំបួន [dap pram buən] ¹²	ម្ភៃ [mp ^h ej]	ម្ភៃមួយ [mp ^h ej muəj], ម្ភៃពីរ [mp ^h ej pi:], ម្ភៃបី [mp ^h ej bɛj]...	សាមសិប [sa:m səp], សែសិប [sae səp], ហាសិប [ha: səp], ហុកសិប [hok səp], ចិតសិប [cət səp], ប៉ៃតសិប [paet səp], កៅសិប [kaw səp]	មួយរយ [muəj rɔ:j]	មួយពាន់ [muəj poan]	មួយម៉ឺន [muəj məɨn]

10 The Khmer name for 0 has been brought from Sanskrit शून्य[sūnya] [this footnote and the following footnotes about Khmer language are taken from Wikipedia: https://en.wikipedia.org/wiki/Khmer_numerals].

11 Kher numerals represent a *biquinary* system, e.g. use both base 5 and base 10: it is easy to see that the name of the numbers from 6 to 9 refer to a decomposition of the number as 5 [+] 1, 5 [+] 2, etc.; in the third column we can see that the name of 14 literally means 10 [+] 4, but the name of 17 literally means 10 [+] 5[+] 2.

Another feature of Khmer numerals is that some numbers have completely different names when they are used to count fruits: for example the number 4 when counting fruits is ដំបូ [damba:].

12 Khmer language presents also another way to name numbers from 11 to 19: colloquially, it is possible to say the word ដំណាប់ [dɔndap] before the number of the units: for example 11 is មួយដំណាប់ [muəj dɔndap], 12 is ពីរដំណាប់ [pi: dɔndap], and so on.

Vietnamese	空[không] 一[một] 二[hai] 三[ba] 四[bốn] 五[năm] 六[sáu] 七[bảy] 八[tám] 九[chín]	十 [mười]	十一[mười một] 十二[mười hai] 十三[mười ba] 十四[mười bốn] 十五[mười năm] 十六[mười sáu] 十七[mười bảy] 十八[mười tám] 十九[mười chín]	二十 [hai mươi]	二十一[hai mươi một] 二十二[hai mươi hai] 二十三[hai mươi ba]...	三十 [ba mươi] 四十 [bốn mươi] 五十 [năm mươi] 六十 [sáu mươi] 七十 [bảy mươi] 八十 [tám mươi] 九十 [chín mươi]	百 [trăm]	千 [nghìn]	十千 [mười nghìn]
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Austronesian languages

Language	0-1-2-3-4-5-6-7-8-9	10	Teens 11-12-13-14-15-16-17-18-19	20	21-22-23...	30-40-50-60-70-80-90	100	1000	10000
Malay - indonesia	Sifar, satu, dua, tiga, empat, lima, enam, tujuh, lapan, sembilan	Sepuluh	Sebelas, dua belas, tiga belas, empat belas, lima belas, enam belas, tujuh belas, lapan belas, sembilan belas	Dua puluh	Dua puluh satu, dua puluh dua, dua puluh tiga...	Tiga puluh, empat puluh, lima puluh, enam puluh, tujuh puluh, lapan puluh, sembilan puluh	Seratus	Seribu	Sepuluh ribu
Maori	Kore, tahi, rua, toru, whā, rima, ono, whitu, waru, iwa	Tekau	Tekau ma tahi, tekau ma rua, tekau ma toru, tekau ma whā, tekau ma rima, tekau ma ono, tekau ma whitu, tekau ma waru, tekau ma iwa	Rua tekau	Rua tekau ma tahi, rua tekau ma rua, rua tekau ma toru...	Toru tekau, whā tekau, rima tekau, ono tekau, whitu tekau, waru tekau, iwa tekau	Kotahi rau	Kotahi mano	Tekau mano

Indo-european languages

Language	0-1-2-3-4-5-6-7-8-9	10	Teens 11-12-13-14-15-16-17-18-19	20	21-22-23...	30-40-50-60-70-80-90	100	1000	10000
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Germanic languages

Danish	Nul, en, to, tre, fire, fem, seks, syv, otte, ni	Ti	Elleve, tolv, tretten, fjorten, femten, seksten, sytten, atten, nitten ¹³	Tyve	Enogtyve, toogtyve, treogtyve ¹⁴ ...	Tredive, fyrrer, halvtreds, tres, halvjerds, firs, halvfems ¹⁵	Hundrede	Tusinde	Ti tusinde
Dutch	Zero, één, twee, drie, vier, vijf, zes, zeven, acht, negen	Tien	Elf, twaalf, dertien, veertien, vijftien, zestien, zeventien, achttien, negentien	Twintig	Eenentwintig, tweeëntwintig, drieëntwintig, vierentwintig ¹⁶ ...	Dertig, veertig, vijftig, zestig, zeventig, tachtig, negentig	Hondert	Duizend	Tienduizend
English	Zero, one, two, three, four, five, six, seven,	Ten	Eleven, twelve, thirteen, fourteen, fifteen, sixteen, seventeen, eighteen,	Twenty	Twentyone, twentytwo, twentythree...	Thirty, forty, fifty, sixty, seventy, eighty, ninety	Hundred	Thousand	Ten thousand

	eight, nine		nineteen						
German	Null, eins, zwei, drei, vier, fünf, sechs, sieben, acht, neun	Zehn	Elf, zwölf, dreizehn, vierzehn, fünfzehn, sechzehn, siebzehn, achtzehn, neunzehn	Zwanzig	Einundzwanzig, zweiundzwanzig, dreiundzwanzig...	Dreißig, vierzig, fünfzig, sechzig, siebzig, achtzig, neunzig	Hundert	Tausend	Zehntausend
Swedish	Noll, en, två, tre, fyra, fem, sex, sju, åtta, nio	Tio	Elva, tolv, tretton, fjorton, femton, sexton, sjutton, arton, nitton	Tjugo	Tjugoen, tjugotvå, tjugotre...	Trettio, fyrtio, femtio, sextio, sjuttio, åttio, nittio	Hundra	Tusen	Tiotusen

13 The names of the numbers from 11 to 19 present the same structure in all the Germanic languages we present in this table, e.g. Danish, Dutch, English, German and Swedish. The names for 11 and 12 are irregular, whereas the names of numbers from 13 to 19 present a structure as 'name of the units' digit' followed by a suffix which stands for '(a) ten' [-*ten* in Danish, -*tien* in Dutch, -*teen* in English, -*zehn* in German, and -*ton* in Swedish]. Nevertheless, some languages can present irregularities: Dutch present as names for 13 *dertien* and not *drietien*, and for 14 present *veertien* and not *viertien*; English present *thirteen* for 13 instead of *threeten*; Swedish present as names for 14, 18, and 19 *fjorton*, *arton*, *nitton* instead of *fyretton*, *åttaton*, *niotton*.

14 The names of numbers from 20 to 100 that are not multiple of 10 present a common structure in some Germanic languages, as in Danish, Dutch and German: in particular, they present the name of the units and the name of the tens in inverse ordering with respect to positional notation. This inversion of the names of the last two digits remains also in the names of numbers with three or more digits, so that for example the name for 146 in Danish is *hundredeseksogfyrrer* and in German is *hundertsechszvierzig*, literally «*hundred-six-and-forty*»; the name of 1532 in German is *tausendfünfhundertzweiunddreißig*, literally «*thousand-five hundreds-two-and-thirty*». [cit. Wikipedia: <https://en.wikibooks.org/wiki/German/Appendices/Numbers>].

15 The word *halv* in Danish means «*half*»: this feature of the Danish names for 50, 70 and 90 is a trace of the fact that the ancient Danish counting base was 20. In fact, *halvtreds*, *tres*, *halvjerds*, *firs*, *halvfems* are modern (and abbreviated) forms of the words *halvtredsindstyve*, *tresindstyve*, *halvfjerdsindstyve*, *firsindstyve*, *halvfemsindstyve* which literally mean «*twice and a half 20*», «*three times 20*», «*three times and a half 20*», «*four times 20*», «*four times and a half 20*» (*halvtredje*, *halvfjerde* and *halvfemte*, literally "halfthird", "halffourth" and halffifth", are old words for 2½, 3½ and 4½).

Instead, the word *fyrrer*, the modern form of *fyrrerstyve*, does not refer to base 20, but stands for «*four times 10*», because *tyve* in this case is an old plural form for *ti*, which means 10 [cit. Wikipedia: https://en.wikipedia.org/wiki/Danish_grammar#Numerals].

16 The structure of the Dutch name of numbers bigger than 20 is exactly the same as the German (also for numbers composed by 3 or more digits).

Romance languages

French	Zéro, un, deux, trois, quatre, cinq, six, sept, huit, neuf	Dix	Onze, douze, treize, quatorze, quinze, seize, dix-sept, dix-huit, dix-neuf ¹⁷	Vingt	Vingt et un, vingt-deux, vingt-trois... ¹⁸	Trente, quarante, cinquante, soixante, soixante-dix, quatre-vingt, quatre-vingt dix ¹⁹	Cent	Mille	Dix mille
Italian	Zero, uno, due, tre, quattro, cinque, sei, sette, otto, nove	Dieci	Undici, dodici, tredici, quattordici, quindici, sedici, diciassette, diciotto, diciannove	Venti	Ventuno, ventidue, ventitre, ventiquattro, venticinque, ventisei, ventisette, ventotto, ventinove	Trenta, quaranta, cinquanta, sessanta, settanta, ottanta, novanta	Cento	Mille	Diecimila

¹⁷ The Romance languages that we consider in this table, namely French, Italian, Spanish and Portuguese, show a common feature concerning the names of numbers between 11 and 19: the names of numbers from 11 to 15 present a structure 'name of the units' followed by a suffix that indicates 'a ten' (-ze or -ize in French, -dici in Italian, -ze in Portuguese and -ce in Spanish), whereas the names for 17,18, 19 directly refer to the positional values of digits (French and Portuguese are completely coherent in this case; Italian words *diciassette*, *diciotto* and *diciannove* are slight variations of '*dieci e sette*', '*dieci e otto*', '*dieci e nove*'; in Spanish the number of units comes after the prefix *dieci*-, slight variations of *diez*). The only number that makes exception is 16: in French and Italian its name (*seize* and *sedici*, respectively) is similar to the name of numbers from 11 to 15; in Portuguese and Spanish its name (*dezesesseis* and *dieciséis*) is similar to the names of 17, 18, 19.

¹⁸ The French maintains this particularity of naming the «tens plus one» differently from other numbers also with all the other tens, from thirty to ninety.

¹⁹ The French presents a particular way to name numbers between 70 and 100, which shows that French counting system once was *vigesimal*, e.g. the base was 20. For example, the word for 80, *quatre-vingt*, means literally «*four [times] twenty*», whereas the words for 70 and 90, *soixante-dix* and *quatre-vingt dix*, literally mean «*sixty [plus] ten*» and «*four [times] twenty [plus] ten*». Names of numbers between 70 and 80 and between 90 and 100 also reflect this vigesimal structure: 71, 72, 73... are named *soixante et onze*, *soixante-deuze*, *soixante-treize*... which literally mean «*sixty [plus] eleven*», «*sixty [plus] twelve*», «*sixty [plus] thirteen*»... and so on; similarly, 91, 92, 93... are named *quatre-vingt et onze*, *quatre-vingt deuze*, *quatre-vingt treize*... which literally mean «*four [times] twenty [plus] eleven*», «*four [times] twenty [plus] twelve*», «*four [times] twenty [plus] thirteen*»... and so on [cit. Wikipedia: https://en.wikipedia.org/wiki/French_language#Numerals].

Portuguese	Zero, um, dois, três, quatro, cinco, seis, sete, oito, nove	Dez	Onze, doze, treze, catorze, quinze, <i>dezesseis</i> , <i>dezesete</i> , <i>dezoito</i> , <i>dezenove</i>	Vinte	Vinte e um, vinte e dois, vinte e três...	Trinta, quarenta, cinquenta, sessenta, setenta, oitenta, noventa	Cem	Mil	Dez mil
Spanish	Cero, un, dos, tres, cuatro, cinco, seis, siete, ocho, nueve	Diez	Once, doce, trece, catorce, quince, <i>dieciseis</i> , <i>diecisiete</i> , <i>dieciocho</i> , <i>diecinueve</i>	Veinte	Veintiuno, veintidos, ventitres...	Treinta, cuarenta, cinquenta, sesenta, setenta, ochenta, noventa	Cien	Mil	Diez mil

Greek language

Greek (Modern)	μηδέν [midén], ένα [éna], δυο [dyo], τρία [tría], τέσσερα [téssera], πέντε [pénte], έξι [éxi], εφτά [eptá], οκτώ [októ], εννέα [ennéa] ²⁰	δέκα [déka]	Έντεκα [énteka], δώδεκα [dódeka], δεκατρείς [dekatreís], δεκατέσσερα [dekatéssera], δεκαπέντε [dekarénte], δεκαέξι [dekaéxi], δεκαεπτά [dekaeptá], δεκαοχτώ [dekaochtó], δεκαεννέα [dekaennéa]	είκοσι [eíkosi]	είκοσι ένα [eíkosi éna], είκοσι δύο [eíkosi dýo], είκοσι τρία [eíkosi tría] ²¹ ...	τριάντα [triánta], σαράντα [saránta], πενήντα [penínta], εξήντα [exínta], εβδομήντα [evdomínta], ογδόντα [ogdónτα], ενενήντα [enenínta]	εκατό [ekató] ²²	χίλια [chília]	δέκα χιλιάδες [déka chiliádes]
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²⁰ Greek numerals for 1, 3 and 4 are declined according to gender and case: we present here the neuter nominative of this numerals. The most of the other numerals is not declined [for more informations see Wikipedia: https://en.wikipedia.org/wiki/Modern_Greek_grammar#Numerals].

²¹ Greek names for 21, 23 and 24 (and more generally for all the numbers in which the last digit is 1, 3 or 4) depend again on gender and case of the noun to which they are referred, but when one is simply counting *in abstract* the gender is neuter [for more information see: <http://www.foundalis.com/lan/grknum.htm>].

²² This Greek word for 100 survived in the word *hecatomb*, which literally means «a hundred cows», probably referring to the huge number of victims of sacrifices to gods [cit. Wikipedia: <https://en.wiktionary.org/wiki/hecatomb>].

Slavic languages

Russian	Ноль [nol'], один [odin] ²³ , два [dva], три [tri], четыре [četyre], пять [pjat'], шесть [šest'], семь [sem'], восемь [vosem'], девять [devjat']	десять [desjat']	одиннадцать ²⁴ [odinnadcat'], двенадцать [dvenadcat'], тринадцать [trinadcat'], четырнадцать [četyrnadcat'], пятнадцать [pjatnadcat'], шестнадцать [šestnadcat'], семнадцать [semnadcat'], восемнадцать [vosemnadcat'], девятнадцать [devjatvnadcat']	двадцать [dvadcet']	двадцать один [dvadcet' odin], двадцать два [dvadcet' dva], двадцать три [dvadcet' tri]...	тридцать [tridcat'], сорок [sorok], пятьдесят [pjat'desjat], шестьдесят [šest'desjat], семьдесят [sem'desjat], восемьдесят [vosem'desjat], девяносто [devjanosta]	сто [sto]	тысяча [tysjača]	десять тысяч [desjat' tysjača]
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²³ Also in Russian the names of numbers depend on the gender of the noun to which the number is referred; here we list the masculine forms of these names. A particularity of Russian is that the numeral один [odin], which stands for 1, has also a *plural* form, одни [odni], which seems to be used for pairs or more in general for things formed by several parts (for more information see Wikipedia : <https://en.wikibooks.org/wiki/Russian/Numbers>).

²⁴ A feature common to the Slavic languages presented here is that numbers from 11 to 19 have all the same structure (e.g. *name of the number of units* followed by a suffix), but the suffix apparently is not directly related to the word used to name 10. It seems a sort of mark to distinguish them from other numbers.

Serbian	нула [nula], један [jedan], два [dva], три [tri], четири [četiri], пет [pet], шест [šest], седам [sedam], осам [osam], девет [devet]	десет [deset]	једанаест [jedanaest], дванаест [dvanaest], тринаест [trinaest], четрнаест [četрнаest], петнаест [petnaest], шеснаест [šesnaest], седамнаест [sedamnaest], осамнаест [osamnaest], деветнаест [devetnaest]	двадесет [dvadeset]	двадесет један [dvadeset jedan], двадесет два [dvadeset dva], двадесет три [dvadeset tri]...	тридесет [trideset], четрдесет [četрдесet], педесет [pedeset], шездесет [šezdeset], седамдесет [sedamdeset], осамдесет [osamdeset], деведесет [devedeset]	сто [sto]	хиљада [hiljada]	десет хиљада [deset hiljada]
Czech	Nula, jeden, dva, tři, čtyři, pět, šest, sedm, odm, devět	Deset	Jedenáct ²⁵ , dvanáct, třináct, čtrnáct, patnáct, šestnáct, sedmnáct, osmnáct, devatenáct	Dvacet	Dvacet jeden, dvacet dva, dvacet tři ²⁶ ...	Třicet, čtyřicet, padesát, šedesát, sedmdesát, osmdesát, devadesát	Sto	Tisíc	Deset tisíc

²⁵ For Czech numbers, we refer to the site <http://www.locallingo.com/czech/grammar/numbers.html>.

²⁶ It's noteworthy that Google Translate gives/accepts as translation for 21, 23, 25, 26, 27, 28, 29 also another form of name, where the name of the units is merged with the suffix 'advacet' indicating the numer of tens (jedenadvacet, třiadvacet, pětadvacet...), in a similar way of what happens for teens.

Iranian languages

Persian	صفر [sefr]	ده [dah]	یازده [yazdah]	بیست [bist]	بیست و یک [bist o yek]	سی [si]	صد [sad]	هزار [hezâr]	ده هزار [dah hezâr]
	یک [yek]		دوازده [davaazdah]		بیست و دو [bist o do]	چهل [chel]			
	دو [do]		سیزده [sizdah]		بیست و سه [bist o seh]	پنجاه [panjâ]			
	سه [seh]		چهارده [chahaardah]		بیست و چهار [bist o chehâr]	شصت [shas]			
	چهار [chahaar]		پانزده [poonzdah]		بیست و پنج [bist o panj]	هفتاد [haftâd]			
	پنج [panj]		شانزده [shoonzdah]		بیست و شش [bist o shish]	هشتاد [hashtâd]			
	شش [shesh]		هفده [hivdah]		بیست و هفت [bist o haft]	نود [navad]			
	هفت [haft]		هجده [hijdah]		بیست و هشت [bist o hasht]				
	هشت [hasht]		نوزده [noonzdah]		بیست و نه [bist o noh]				
	نه نفر [noh]								

Japonic languages

Language	0-1-2-3-4-5-6-7-8-9	10	Teens 11-12-13-14-15-16-17-18-19	20	21-22-23...	30-40-50-60-70-80-90	100	1000	10000
Japanese	れい [rei] ²⁷ , いち [ichi], に [ni], さん [san], よん [yon], ご [go], ろく [roku], なな [nana], はち [hachi], きゅう [kyū]	じゅう [jū]	じゅういち [jū ichi], じゅうに [jū ni], じゅうさん [jū san], じゅうよん [jū yon], じゅうご [jū go], じゅうろく [jū roku], じゅうなな [jū nana], じゅうはち [jū hachi], じゅうきゅう [jū kyū]	にじゅう [ni-jū]	にじゅういち [ni-jū -ichi], にじゅうに [ni-jū-ni], にじゅうさん [ni-jū -san]...	さんじゅう [san-jū], よんじゅう [yon-jū], ごじゅう [go-jū], ろくじゅう [roku-jū], ななじゅう [nana-jū], はちじゅう [hachi-jū], きゅうじゅう [kyū-jū]	ひゃく [hyaku]	せん [sen]	まん [man]

²⁷ Japanese numbers can be read in different ways, depending on if the number is cardinal or ordinal. Here, we list the way of reading cardinal numbers, except for number 4 and 9 because their name as cardinal numbers have the same pronounce as the words 'death' and 'suffering' in Japanese, and so are considered unlucky (for more informations, see Wikipedia : https://en.wikipedia.org/wiki/Japanese_numerals). Moreover, sometimes to name numbers from 1 to 10 is used also the Ancient Japanese version of these names as an alternative reading (see http://www.sf.airnet.ne.jp/~ts/language/number/ancient_japanese.html).

Sino-tibetan languages

Language	0-1-2-3-4-5-6-7-8-9	10	Teens 11-12-13-14-15-16-17-18-19	20	21-22-23...	30-40-50-60-70-80-90	100	1000	10000
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Sinitic languages

Cantonese	零 [lɪŋ] ²⁸ , 壹 [jat], 貳 [ji], 叁 [saam], 肆 [sei], 伍 [ŋg], 陸 [luk], 柒 [cat], 捌 [baat], 玖 [gau]	拾 [sap]	拾壹 [sap-jat], 拾貳 [sap-ji], 拾叁 [sap-saam], 拾肆 [sap-sei], 拾伍 [sap-ŋg], 拾陸 [sap-luk], 拾柒 [sap-cat], 拾捌 [sap-baat], 拾玖 [sap-gau]	貳拾 [ji-sahp]	貳拾壹 [ji-sap-jat], 貳拾貳 [ji-sap-ji], 貳拾叁 [ji-sap-saam]...	叁拾 [saam-sap], 肆拾 [sei-sap], 伍拾 [ŋg-sap], 陸拾 [luk-sap], 柒拾 [cat-sap], 捌拾 [baat-sap], 玖拾 [gau-sap]	佰 [baak]	仟 [cin]	萬 [maan]
Mandarin	零 [Líng], 一 [Yī], 二 [Èr] ²⁹ , 三 [Sān], 四 [Sì], 五 [Wǔ], 六 [Liù], 七 [Qī], 八 [Bā], 九 [Jiǔ]	十 [Shí]	十一 [Shíyī], 十二 [Shí'èr], 十三 [Shísān], 十四 [Shísì], 十五 [Shíwǔ], 十六 [Shíliù], 十七 [Shíqī], 十八 [Shíbā], 十九 [Shíjiǔ]	二十 [Èrshí]	二十一 [Èrshíyī], 二十二 [Èrshí'èr], 二十三 [Èrshísān]...	三十 [Sānshí], 四十 [Sìshí], 五十 [Wǔshí], 六十 [Liùshí], 七十 [Qīshí], 八十 [Bāshí], 九十 [Jiǔshí]	百 [Bǎi]	千 [Qiān]	萬 [Wàn]

²⁸ In Cantonese the digits are indicated with the traditional ideograms of Chinese language, but their pronunciation is different. Nevertheless, the structure of the names of numbers is exactly the same as the Chinese numbers, perfectly coherent with the positional value of digits.

Tibeto-burman languages

Burmese	သုည [su.nya.], တစ် [tac], နှစ် [hnac], သုံး [sum:], လေး [le:], ငါး [nga:], ခြောက် [hkrauk], ခုနစ် [hku.hnac], ရှစ် [hrac], ကိုး [kui:]	ဆယ် [hcay] ³⁰	တစ်ဆယ်တစ် [ta'hcay tac], တစ်ဆယ်နှစ် [ta'hcay hnac], တစ်ဆယ်သုံး [ta'hcay sum:], တစ်ဆယ်လေး [ta'hcay le:], တစ်ဆယ်ငါး [ta'hcay nga:], တစ်ဆယ်ခြောက် [ta'hcay hkrauk], တစ်ဆယ်ခုနစ် [ta'hcay hku.hnac], တစ်ဆယ်ရှစ် [ta'hcay hrac], တစ်ဆယ်ကိုး [ta'hcay kui:]	နှစ်ဆယ် [na'hcay]	နှစ်ဆယ်တစ် [na'hcay tac], နှစ်ဆယ်နှစ် [na'hcay hnac], နှစ်ဆယ်သုံး [na'hcay sum:] ³¹ ...	သုံး [sum: hcay], လေး [le: hcay], ငါး [nga: hcay], ခြောက် [hkrauk hcay], ခုနစ် [hku.hnac hcay], ရှစ် [hrac hcay], ကိုး [kui: hcay]	ရာ [har]	ထောင် [taung]	သောင်း [saung] ³²
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29 There is also another ideogram corresponding to the word two: 兩 [Liǎng], that «is used when counting things with a measure word, 二 is used in numbers» [see Wikipedia: <https://en.wiktionary.org/wiki/兩#Chinese>].

30 There is also another version of the word for 10, used to form the name of numbers from 11 to 19: the word တစ်ဆယ် [ta'hcay], which literally means 'one ten'.

31 We will write dots after the word for 23 in rows related to those languages where the names of numbers from 24 to 29 follow the structure of the names of numbers 21, 22, 23; when the names of those numbers present exceptions or are completely different from numbers below 23, we will list them.

32 The names of numbers less than 10 millions in Burmese language are coherent with the positional value of digits, but things change when numbers are bigger: «Number places from 10 (တစ်ဆယ်) up to 10⁷ (တူဇွေ) has increment of 10. Beyond those number places, larger number places have increment of 10⁷. 10¹⁴ (ကောဠိ) up to 10¹⁴⁰ (အသင်္ချေအင်္ချေ) has increment of 10⁷» [cit. Wikipedia: https://en.wikipedia.org/wiki/Burmese_numerals].

Tai-kadai languages

Language	0-1-2-3-4-5-6-7-8-9	10	Teens 11-12-13-14-15-16-17-18-19	20	21-22-23...	30-40-50-60-70-80-90	100	1000	10000
Lao	ສູນ[soun], ນຶງ[nung], ສອງ [song], ສາມ [sam], ສີ [si], ຫ້າ[ha], ຫົກ[hok], ເຈັດ[chet], ແປດ [pèt], ເກົ້າ[kao]	ສິບ [sip]	ສິບເອັດ[sip ed], ສິບສອງ[sip song], ສິບສາມ[sip sam], ສິບສີ [sip si], ສິບຫ້າ[sip ha], ສິບຫົກ[sip hok], ສິບເຈັດ[sip chet], ສິບແປດ[sip pèt], ສິບເກົ້າ[sip kao]	ຊາວ [xao] ³³	ຊາວເອັດ [xao ed], ຊາວສອງ [xao song], ຊາວສາມ [xao sam]...	ສາມສິບ[sam sip], ສີສິບ [si sip], ຫ້າສິບ[ha sip], ຫົກສິບ[hok sip], ເຈັດສິບ[chet sip], ແປດສິບ[pèt sip], ເກົ້າສິບ[kao sip]	ຮ້ອຍ[hony]	ພັນ[phan]	ສິບພັນ [sip phan]
Thai	ศูนย์ [sun], หนึ่ง [nueng], สอง [song], สาม [sam], สี่ [si], ห้า [ha] , หก [hok], เจ็ด [chet], แปด [paet], เก้า [kao]	สิบ [sip]	สิบเอ็ด [sip et], สิบสอง [sip song], สิบสาม [sip sam], สิบสี่ [sip si], สิบห้า [sip ha], สิบหก [sip hok], สิบเจ็ด [sip chet], สิบแปด [sip paet], สิบเก้า [sip kao],	ยี่สิบ [yi sip]	ยี่สิบเอ็ด [yi sip et] ยี่สิบสอง [yi sip song] ยี่สิบสาม [yi sip sam]...	สามสิบ[sam sip] สี่สิบ [si sip] ห้าสิบ [ha sip] หกสิบ [hok sip] เจ็ดสิบ [chet sip] แปดสิบ [paet sip] เก้าสิบ [kao sip]	ร้อย [roi]	พัน [phan]	หมื่น [muen]

³³ It is easy to see that Thai numerals and Lao numerals are very similar in pronounce (see the transliteration of Thai numbers). There's only one exception, the word for 20, which in Lao language is the only multiple of 10 that is not coherent with the positional values of digits.

Turkic languages

Language	0-1-2-3-4-5-6-7-8-9	10	Teens 11-12-13-14-15-16-17-18-19	20	21-22-23...	30-40-50-60-70-80-90	100	1000	10000
Turkish	Sıfır, bir, iki, üç, dört, beş, altı, yedi, sekiz, dokuz	On	On bir, oniki, on üç, on dört, onbeş, on altı, on yedi , onsekiz , on dokuz	Yirmi	Yirmi bir , yirmi iki , yirmiüç...	Otuz, kırk, elli, altmış, yetmiş, seksen, doksan	Yüz	Bin	On bin

Languages isolates

Language	0-1-2-3-4-5-6-7-8-9	10	Teens 11-12-13-14-15-16-17-18-19	20	21-22-23...	30-40-50-60-70-80-90	100	1000	10000
Korean	³⁴ , 하나 [hana], 둘 [dul], 셋 [set], 넷 [net], 다섯 [daseot], 여섯 [yeoseot], 일곱 [ilgop], 여덟 [yeodeot], 아홉 [ahop]	열 [yeol]	열하나 [yeol hana], 열둘 [yeol dul], 열셋 [yeol set], 열넷 [yeol net], 열다섯 [yeol daseot], 열여섯 [yeol yeoseot], 열일곱 [yeol ilgop], 열여덟 [yeol yeodeot], 열아홉 [yeol ahop]	스물 [seumul]	스물하나 [seumul hana], 스물둘 [seumul dul], 스물셋 [seumul set]...	서른[seoreun], 마흔[maheun], 쉰 [swin], 예순[yesun], 일흔[ilhesun], 여든[yeodeun], 아흔[aheun]	온[on]	즈믄 [jeumeun] ³⁵	드먼 [deumeon]

³⁴ In the sources we consulted there was not provided a name for 0 in the native Korean language. Instead, there are some terms for 0 in Sino-Korean language (영 [yeong] and 령 [ryeong]), so it is possible that the number 0 has been introduced in Korean number system only after the meeting with Chinese culture.

³⁵ "These names are considered archaic, and are not used." [quote from https://en.wikipedia.org/wiki/Korean_numerals].

TERMS RELATED TO POSITIONAL NOTATION

Language	Term for the unit of first value position	Term for the unit of second value position	Term for the unit of third value position	Term for the unit of fourth value position
<i>Germanic languages</i>				
Danish	Enheder	Tiere	Hundreder	Tusinder
Dutch	Eenheden	Tientallen	Honderden	Duizenden
English	Units	Tens	Hundreds	Thousands
German	Einer	Zeher	Hundeter	Tausender
<i>Romance languages</i>				
French	Unités	Dizaines	Centaines	Milliers
Italian	Unità	Decine	Centinaia	Migliaia
Portuguese	Unidades	Dezenas	Centenas	Milhares
Spanish	Unidades	Decenas	Cientos	Miles
<i>Chinese language</i>				
Mandarin	单位 ³⁶	十	百	千

TERMS RELATED TO ARITHMETICAL OPERATIONS

Language	Terms of addition	Terms of multiplication	Terms of subtraction	Terms of division
<i>Germanic languages</i>				
Danish	Addend	Multiplikand – multiplikator	Minuend – Subtrahend	Dividend – Divisor
Dutch	Termen	Factor Vermenigvuldigtal – Vermenigvuldiger ³⁷	Aftrekgetal – Aftrekker	Deeltal – Deler

³⁶ Chinese word for 'unit' is formed by the ideograms 单 (which means 'single') and 位 (which means 'place'), thus we can translate it as 'place of single things'.

³⁷ In Dutch, multiplication is 'Vermenigvuldigen', which derives from the word 'menigvuldig' (which means 'manifold'; it is composed by the adjective 'menig', which means 'many', and suffix *-vuldig* that is used to form nouns from adjectives, as the suffix *-ness* in English). The prefix *-ver* is used in Dutch to indicate 'to do or to become what the stem (following this prefix) refers to' [cit. Wikipedia: <https://en.wiktionary.org/wiki/ver-#Dutch>], thus we can interpret *vermenigvuldigen* as 'becoming multiple'; the terms multiplicand and multiplier are formed by adding the suffixes *-tal* and *-er* respectively.

English	Addend Summand Augend – Addend	Factor Multiplicand - Multiplier	Minuend – Subtrahend	Dividend – Divisor
German	Summand Augend – Addend	Faktor Multiplikand – Multiplikator	Minuend – Subtrahend	Dividend – Divisor
<i>Romance languages</i>				
French	Terme	Facteur Multiplicande – Multiplicateur	Diminuende – Diminuteur	Dividende – Diviseur
Italian	Addendo	Fattore Multiplicando – Moltiplicatore	Minuendo – Sottraendo	Dividendo – Divisore
Portuguese	Termo Somando	Fator Multiplicando – Multiplicador	Minuendo – Subtraendo	Dividendo – Divisor
Spanish	Sumand	Factor Multiplicando – Multiplicador	Minuendo – Sustraendo	Dividendo – Divisor
<i>Chinese language</i>				
Mandarin	被加数 ³⁸	因数 ³⁹ 被乘数 – 乘数	被减数 – 减数	被除数 – 除数

The terms for '*subtraction*' and '*division*' are respectively '*af-trekken*' (formed by the prefix *af-*, which means '*off*', and the verb *trekken*, which means '*push*'; thus the global meaning of the word could be '*take away*') and '*delen*'.

38 The Chinese words used to name the terms of arithmetic operations have a common structure. The three ideograms composing the word '*addend*' in Chinese are 被 (whose meaning is '*is*'), 加 (which means '*plus*') and 数 (which means '*number*'); the words for '*multiplicand*', '*minuend*', '*dividend*' have the same structure, if we replace 加 respectively with 乘 (which means '*multiplication*'), 减 (which means '*subtraction*') and 除 (which means '*to divide*'). Thus, these words could be translated as '*the number to be added/ multiplied /subtracted/ divided*'. The words for '*multiplier*', '*subtrahend*' and '*divisor*' are formed by the ideogram 数 ('*number*') preceded by the ideogram indicating the arithmetic operation ; thus, a first translation could be something like '*the number that multiplies / subtract/ divide*'.

39 The two ideograms composing the word '*factor*' in Chinese are 因 (whose meaning is '*because*') and 数 ('*number*').