Numbers and Numerals

This material describes how numbers are expressed by numerals in English and provides examples of cardinal and ordinal numerals, common and decimal fractions, and examples of differences between British and American English in expressing numbers.

For the purposes of studying, numbers in this material are written in words and figures.

Functions of numerals

A **numeral** is a figure, a letter, a word (or their combinations) representing a number.

Cardinal numerals indicate number, quantity or amount and are used in counting: *one, two, three, etc.*

Ordinal numerals indicate order, that is, the order of things in a series: *first, second, third, etc.*

Numerals can be written in figures or words (2 or two; 25 or twenty-five; 17th or seventeenth).

Numerals function as nouns and adjectives. In a sentence, a numeral can serve as a **subject, attribute, object, predicative complement, or adverbial modifier.**

Ten students took part in the competition. Three of them received awards.
Twenty cars were sold on the first day. Five of them were sports cars.
There are 135 employees in this company. We talked to 45 of them.
How many cakes did you buy? – I bought five. I ate two.
Two plus four is six. Three times three is nine.
How old is your grandfather? – He is 72. He was born in 1940.

Numerals: BrE and AmE

Both in British English and in American English groups of three digits in numerals of one thousand and higher are usually separated by a **comma**, counting from the right: 4,286; 12,345; 378,925; 6,540,210.

In numbers written as words in British English, **the conjunction "and"** is used before tens, or before ones if there are no tens, starting with hundreds: one hundred and twenty-three (123); four hundred and seven (407); three thousand five hundred and thirty-eight (3,538); seventy-three thousand and five (73,005); five million three hundred thousand and fifty (5,300,050).

Note the use of more than one conjunction "and" in large numbers in British English: two million six hundred and twenty-five thousand three hundred and ten (2,625,310).

In American English, the conjunction "and" is generally not used before tens or ones: one hundred twenty-three (123); four hundred seven (407); three thousand five hundred thirty-eight (3,538); seventy-three thousand five (73,005); two million six hundred twenty-five thousand three hundred ten (2,625,310); five million three hundred thousand fifty (5,300,050).

In British English, the conjunction "and" is also used before tens or ones in ordinal numerals above one hundred: one hundred and tenth (110th); three thousand and fifth (3005th). But "and" is not used in American ordinals: one hundred tenth (110th); three thousand fifth (3005th).

Digits, figures, numerals, numbers

The words “digit, figure, numeral, number” may present some difficulty for language learners. For example, you can say *the digit 3; the figure 3; the numeral 3; the number 3*, but the meanings of these word combinations are not the same.

The word **“digit”** refers to **any of Arabic figures from 0 to 9**. Examples: the digit 4; the digit 7; a three-digit number; a group of three digits; use digits to write these numbers.

The word **“figure”** refers to a **numerical symbol** for a number and can also refer to the **numerical value** of a number. Examples: *the figure 4; Arabic figures; a six-figure number; a figure of 3.5 million; write these numbers in figures and in words*. The word “figures” can also mean “arithmetic”: *He is good at figures*.

A **“numeral”** is a name used for denoting a **numbe**r. Numerals can be in the form of any symbols denoting a number. In texts of general character, numerals are usually written as figures or words. Examples: *the numeral 7; the numeral seven; ordinal numerals; Arabic numerals, Roman numerals*.

The word **“number”** refers to **quantity or amount** and is one of the main concepts in mathematics. Examples: *whole numbers; natural numbers; prime numbers; even numbers; odd numbers; large numbers; round numbers; negative numbers; the number 12; the number twelve; the number 165*.

One of the meanings of the word “number” is “numeral”. Because of that, the word “number” can be used in many cases where the word “numeral” is meant, for example, you can say “cardinal numerals” or “cardinal numbers”; “ordinal numerals” or “ordinal numbers”.

Cardinal numerals

In formal nontechnical texts, numbers from one to one hundred, round numbers, and any numbers that can be expressed in one or two words are usually spelled out, that is, written out in words. In less formal texts, as a general rule, numbers from one to ten should be spelled out, and figures can be used for numbers above ten.

Examples of spelling

- one, two, three, four, five, six, seven, eight, nine, ten (1, 2, 3, 4, 5, 6, 7, 8, 9, 10);
- eleven, twelve, thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, nineteen (11, 12, 13, 14, 15, 16, 17, 18, 19);
- twenty, thirty-seven, forty-two, fifty-one, sixty-five, seventy, eighty-three, ninety-eight (20, 37, 42, 51, 65, 70, 83, 98);
- one hundred eighty-six (186); two hundred (200); three hundred forty (340); four hundred (400); five hundred three (503); eight hundred twelve (812); nine hundred one (901);
- one thousand six hundred seventy-nine (1,679); four thousand (4,000); fifteen thousand (15,000); sixty-three thousand four hundred ninety-five (63,495); seven hundred eight thousand thirty-four (708,034);
- five million (5,000,000); thirteen million nine hundred sixty-seven thousand one hundred eleven (13,967,111);
- six billion three hundred forty-nine million twenty-five thousand six hundred eighty-two (6,349,025,682).

Examples in sentences

She has three brothers.

There are twelve students in my group.

How many feet are there in a mile? – There are 5280 feet in a mile.

Numbers at the beginning of the sentence should be written out in words. If you need to use figures, restructure your sentence.

Fifty-six workers were fired yesterday. – Yesterday 56 workers were fired.

Numerals used in the same function in a sentence are usually written either as words or as figures.

He wrote one hundred thirty essays, fifty-two stories, and seven novels.

He wrote 130 essays, 52 stories, and 7 novels.

Note: Multiples of one hundred

In less formal speech and writing, especially in American usage, four-digit numbers that are multiples of 100 are often named in the following way:

1100 – eleven hundred; 1200 – twelve hundred; 1500 – fifteen hundred; 1600 – sixteen hundred; 2300 – twenty-three hundred; 4400 – forty-four hundred; 5600 – fifty-six hundred.

In British English, such use is more common for round numbers between 1,100 and 1,900.

Note that 1000, 2000, 3000, etc., are pronounced as "one thousand, two thousand, three thousand", etc.; that is, such numbers are generally not expressed in hundreds.

Ordinal numerals

Ordinal numerals that can be expressed in one or two words are usually written as words.

Examples of spelling

- first, second, third, fourth, fifth, sixth, seventh, eighth, ninth, tenth (1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th);
- eleventh, twelfth, thirteenth, fourteenth, fifteenth, sixteenth, seventeenth, nineteenth (11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th);
- twentieth, thirty-seventh, forty-second, fifty-first, sixty-fifth, seventieth, eighty-third, ninety-eighth (20th, 37th, 42nd, 51st, 65th, 70th, 83rd, 98th);
- one hundred eighty-sixth (186th); three hundred fortieth (340th); five hundred third (503rd); eight hundred twelfth (812th);
- one thousand six hundred seventy-ninth (1,679th); nine thousand eight hundred fiftieth (9,850th);
- two hundredth (200th); three thousandth (3,000th); five millionth (5,000,000th).

Examples in sentences

Generally, ordinal numerals are used as adjectives and stand before nouns. An ordinal numeral is usually preceded by the definite article "the".

The first story was interesting. The second was dull.

The thousandth visitor received a prize.

John Kennedy was the 35th president of the United States.

An ordinal numeral may have the meaning "another, one more", in which case it is preceded by

the indefinite article “a”.

We sent them two letters, but they didn't answer. We are going to send them a third letter today.

Note the following typical constructions with ordinal and cardinal numerals: the second lesson – Lesson 2 (pronounced “lesson two”); the fifth unit – Unit 5 (pronounced “unit five”); the tenth chapter – Chapter 10 (pronounced “chapter ten”).

Note the use of Roman numerals (pronounced as ordinal numerals) with the names of kings: Henry V (Henry the Fifth); Richard III (Richard the Third).

Difficult spellings

Pay attention to the differences in the spelling and pronunciation of the following cardinal and ordinal numerals.

two, twelve, twenty, twenty-two – second, twelfth, twentieth, twenty-second;
three, thirteen, thirty, thirty-three – third, thirteenth, thirtieth, thirty-third;
four, fourteen, forty, forty-four – fourth, fourteenth, fortieth, forty-fourth;
five, fifteen, fifty, fifty-five – fifth, fifteenth, fiftieth, fifty-fifth;
eight, eighteen, eighty, eighty-eight – eighth, eighteenth, eightieth, eighty-eighth;
nine, nineteen, ninety, ninety-nine – ninth, nineteenth, ninetieth, ninety-ninth;

Note the pronunciation of “five, fifth” and “nine, ninth”: five [faiv] – fifth [fifθ]; nine [nain] – ninth [nainθ].

Numerals like “eighteen” have two stresses: sixteen ['siks'ti:n]; eighteen ['ei'ti:n]. Depending on the position of the numeral in the sentence, primary stress may fall on the first or on the last syllable. For example: He has SIXteen BOOKS. How many? – SixTEEN.

Numerals like “eighty” have one stress on the first syllable: twenty ['twenti]; sixty ['siksti]; eighty ['eiti].

Note the pronunciation of ordinal numerals like "twentieth": twentieth ['twentiiθ]; fortieth ['fo:rtiiθ]; fiftieth ['fiftiiθ]; seventieth ['seventiiθ]; ninetieth ['naintiiθ]. (But also possible [ˈtwentiəθ], etc.)

Fractions

The **numerator** of the fraction is expressed by a cardinal numeral, and the **denominator** is expressed by an ordinal numeral. The suffixes “-rd, -th, -ths” are not written in the denominator of the fractions written in figures (1/3; 1/5; 3/7), but such fractions are pronounced in the same way as fractions written in words (one-third; one-fifth; three-sevenths).

Common fractions are usually written out in words. Mixed numbers may be written out in words if short but are often written in figures.

Fractions are generally hyphenated, except in those cases where the numerator or the denominator is already hyphenated: “one-fifth” but “one twenty-fifth”.

Some manuals of style recommend writing without a hyphen fractions in the meaning of nouns: a half / one half; one third; two thirds; three fourths / three quarters; four fifths.

Examples of spelling

1/2 – one-half / a half; 1/3 – one-third;
1/4 – one-fourth / a quarter;
1/5 – one-fifth; 1/8 – one-eighth;
1/9 – one-ninth; 1/10 – one-tenth;
1/12 – one-twelfth; 1/20 – one twentieth;
1/32 – one thirty-second;
1/100 – one-hundredth;
1/1000 – one-thousandth;
2/3 – two-thirds; 4/5 – four-fifths;
3/4 – three-fourths / three-quarters;
5/8 – five-eighths; 9/10 – nine-tenths;
7/36 – seven thirty-sixths;
33/100 – thirty-three hundredths;
65/1000 – sixty-five thousandths;
1 1/2 – one and a half;
1 1/4 – one and a quarter;
3 2/5 – three and two-fifths;
6 3/7 – six and three-sevenths.

Examples in sentences

This box weighs two-thirds of a kilogram.
He has already written three-quarters of his new novel.
A cent is one hundredth part of a dollar.
A milliliter is one thousandth of a liter.

Note: The use of "half"

Add one-half cup of sugar to the mixture.
The park is half a mile from here.
I had to wait for an hour and a half.
The fence was one and a half meters high.
I spent three and a half weeks there.

Decimal fractions

The decimal point (not comma as in Bulgarian) separates the whole from the fraction in decimal fractions in English. Decimals are written in figures.

The digits to the left of the decimal point are usually read as a cardinal number, and the digits to the right of the decimal point are usually read as separate digits. For example, 546.132 can be read as “five hundred forty-six point one-three-two”.

Examples of spelling and pronunciation

0.2 (pronounced “zero-point-two”); 0.001 (zero-point-zero-zero-one);
1.3 (pronounced “one-point-three”); 2.5 (two-point-five); 3.6 (three-point-six);
6.57 (pronounced “six-point-five-seven”); 8.024 (eight-point-zero-two-four);
17.84 (pronounced “seventeen-point-eight-four”); 99.99 (ninety-nine-point-nine-nine);

2056.831 (pronounced “two-thousand-fifty-six-point-eight-three-one”).

In British English, a zero is usually read as “nought”: 1.03 (one-point-nought-three); 5.206 (five-point-two-nought-six); 0.5 (nought-point-five); 0.001 (nought-point-nought-nought-one).

It is considered preferable to use decimal fractions with the words “million, billion” instead of the numerals with several zeros. Compare: 1,500,000 – 1.5 million (pronounced “one-point-five million”); 16,400,000 – 16.4 million (pronounced “sixteen-point-four million”); 3,200,000,000 – 3.2 billion (pronounced “three-point-two billion”).

Examples in sentences

Generally, **plural nouns** are used after decimal fractions in English. Pay attention to the difference in the use of the decimal point (English) and a comma (Bulgarian).

One meter equals 3.28 ***feet****.*
The distance between these objects is 23.6 ***miles****.*
The distance between these lines is 0.8 ***centimeters****.*
This container weighs 0.53 ***tons****.*

Singular or plural verb

When calculations are said aloud, the verb is generally used in the singular, for example, “two plus two is four; two plus two equals four; two plus two makes four”. The verb “to equal” in this case is a little more formal than the verbs "to be, to make". Examples:

3 + 4 = 7 (pronounced "three plus four is/equals seven")

10 – 6 = 4 (pronounced "ten minus six is/equals four")

5 x 4 = 20 (pronounced "five multiplied by four is/equals twenty")

30 : 6 = 5 (pronounced "thirty divided by six is/equals five")

In the case of addition, the plural form of the verb is also used, for example, “two and two are four; two and two equal four; two and two make four; two plus two make four”.

A **singular verb** is used when referring to amounts in the following way:

Three-fifths of a mile ***is*** *a little less than one kilometer.*
How much ***is*** *35 percent of 470?*
Fifteen hours of waiting ***is*** *too much.*

In other cases, the choice of a singular or plural verb depends on the noun that follows the numeral. If the noun is singular or uncountable, the singular form of the verb is used. If a plural noun stands after the numeral, the plural form of the verb is used. Compare these examples:

Half of the house ***is*** *occupied by his library.*

Half of his books ***are*** *about children.*

A third (or One-third) of the equipment ***was*** *replaced last month.*

A third (or One-third) of the cars ***were*** *bought on credit.*

About 60 percent of the sum ***was*** *provided by a sponsor.*

About 60 percent of the students were *absent on that day.*

Hundred, thousand, million

The words “hundred, thousand, million” can be used with “one” or “a”. But only “one” is used before these words if they are followed by numerals in order to express an exact number.

*I saw about **a** hundred people there.*
***One** hundred thirty-five people were present at the meeting.*
The lake is about a hundred and fifty miles from the nearest city.
The lake is at a distance of one hundred fifty-two miles from the nearest city.
Their house is almost a hundred and ten years old.
Their house is one hundred ten years old.
A picture is worth a thousand words.
She wrote exactly one thousand words.
Can they pay a million dollars?
The price was one million two hundred thousand dollars. (Usually written as $1.2 million.)

The words “hundred, thousand, million” do **NOT** take the plural ending “s” when they are preceded by numerals in order to express an exact number. But the words “hundred, thousand, million” can take the plural ending “s” when they are followed by “**of” + noun**, in which case they have the meaning “a great number, a lot of”. Compare these examples:

We need three hundred volunteers. – We saw hundreds of people there.
They sold two thousand cars. – There are thousands of books in her collection.

Note: Certain fractions and ordinal numbers containing the words "hundred, thousand, million" may sound alike in some cases. Note the differences in spelling:

three-hundredths (3/100) – three hundredth (300th);
two-thousandths (2/1000) – two thousandth (2000th).

Note: Billion and milliard

A billion is a thousand million in American English (i.e., 1,000,000,000), and at present the word “billion” is used in British English in the same meaning.

The word “milliard” is also used in British English for such numbers, but such use is becoming rare. The word “milliard” is not used in American English.

The word “milliard” is used in Bulgarian in the meaning “a thousand million”.

In older British usage, the word “billion” was used in the meaning "million million". A million million is a trillion in American English.