



# Hebrew Numbers

The Hebrew numbering system is explained. Unicode character values are provided for letters used to represent numbers.

To display the Hebrew characters you need an appropriate font. [Ezra SIL font](#) shows almost all of the Hebrew characters. Other Hebrew fonts, supporting not only Hebrew characters but punctuation, vowel and cantillation marks, are discussed on [Mechon Mamre's font page](#).

## Modern versus Traditional Number Forms in Hebrew Writing

Most Hebrew text today uses European digits (0, 1, 2, 3...9) to represent numbers. However, religious or biblical text, and calendars in Hebrew will use the traditional form which uses Hebrew letters as numeric values.

## Hebrew Letters And Their Number Values

Each letter in the Hebrew alphabet (or aleph-bet) has a numerical value. The first 10 letters (consonants actually) have the values 1-10. The next 9 letters are valued 20, 30, ... 100. The remainder are valued 200, 300, and 400. The number values for each character are shown in the table below. There is no representation for zero (0). This is the system used by Hillel II in the fourth century A.D., when he prescribed the rules for the Hebrew calendar system.

Later, the final forms of the letters kaf, mem, nun, pe, and tzadi were used for the missing values 500, 600, 700, 800, and 900.

## Number Values For Hebrew Letters

These tables show the number values for hebrew letters. Left-to-right readers will prefer the table with left-to-right ordering. Right-to-left readers will prefer the table with right-to-left ordering. Otherwise the tables are identical. The number values do not change with writing direction. The tables are presented as a convenience to readers. (They also highlight the ease with which [table direction](#) can be changed in HTML markup by adding "DIR=RTL" to the table element.)

Left-To-Right Ordering

Value	1	2	3	4	5	6	7	8	9
Value x 1	א Alef 05D0	ב Bet 05D1	ג Gimel 05D2	ד Dalet 05D3	ה He 05D4	ו Vav 05D5	ז Zayen 05D6	ח Het 05D7	ט Tet 05D8
Value x 10	י Yod 05D9	כ Kaf 05DB	ל Lamed 05DC	מ Mem 05DE	נ Nun 05E0	ס Samekh 05E1	ע Ayin 05E2	פ Pe 05E4	צ Tzadi 05E6
Value x 100	ק Qof 05E7	ר Resh 05E8	ש Shin 05E9	ת Tav 05EA					
Value (later) x 100	ק Qof 05E7	ר Resh 05E8	ש Shin 05E9	ת Tav 05EA	ך Final Kaf 05DA	ם Final Mem 05DD	ן Final Nun 05DF	ף Final Pe 05E3	ץ Final Tzadi 05E5

Right-To-Left Ordering

9	8	7	6	5	4	3	2	1	Value
ט Tet 05D8	ח Het 05D7	ז Zayen 05D6	ו Vav 05D5	ה He 05D4	ד Dalet 05D3	ג Gimel 05D2	ב Bet 05D1	א Alef 05D0	Value x 1
צ Tzadi 05E8	פ Pe 05E4	ע Ayin 05E2	ס Samekh 05E1	נ Nun 05E0	מ Mem 05DE	ל Lamed 05DC	כ Kaf 05DB	י Yod 05D9	Value x 10
					ת Tav 05EA	ש Shin 05E9	ר Reish 05E8	ק Qof 05E7	Value x 100
ף Final Tzadi 05E5	ף Final Pe 05E3	ן Final Nun 05DF	ם Final Mem 05DD	ך Final Kaf 05DA	ת Tav 05EA	ש Shin 05E9	ר Reish 05E8	ק Qof 05E7	Value (letter) x 1000

Letter
Letter Name
Unicode Hex Value

**Note<sup>1</sup>:** The final forms of the letters kaf ך, mem ם, nun ן, pe ף, and tzadi ף were not used in Hebrew numbers originally, but in later years they were added to represent the values 500, 600, 700, 800, and 900.

**Example**



The number 764 in Hebrew is: תשסד.  
The value is calculated as 400 (n) + 300 (w) + 60 (v) + 4 (t) = 764.

**Hebrew Number Formation**

Hebrew numbers are formed differently from Western or European numbers. In the west, only 10 digits are used, and the position of the digit indicates its value in powers of 10 beginning at 1, so the digit value is multiplied by 1, 10, 100, 1000, etc. as the position increases from right to left. (Being position-based, a zero digit is an absolute requirement.)

Hebrew numbers on the other hand, simply add the values of each letter together and the position doesn't matter. However, they are generally written from largest to smallest, which in the right-to-left Hebrew script, means the largest is right-most. For numbers greater than 799, tav (400 n) is repeated.

Numbers are formed by choosing the hebrew letter with the largest value that doesn't exceed the number and then selecting the next largest valued letter that reduces the remainder. For example, to represent 765, the largest valued letter is tav (400 n) leaving a remainder of 365. Adding the letter shin (300 w) leaves 65. Adding somekh (60 v) and he (5 t) eliminate the remainder. So 765 is represented by tav, shin, somekh, he: תשסה.

**Exceptions to Hebrew Number Formation**

There is one exception. Numbers ending in 15 or 16 would be written as yud-he (10+5) and yud-vav (10+6), but the letters "yud he vav he" spell out the name of God and for religious reasons are not used. Instead, by convention, tet-vav (9+6 v) and tet-zayin (9+7 z) are always used.

Well ok, there is another exception- Some numbers spell out a word with strongly negative or positive connotations. In these cases, the order of the letters might be changed. The number 18 for example, yud-het, uses the same letters as the word for life het-yud. So instead of יח, you may see חי.

**Thousands, Millions**

Thousands are represented by the same letters as the unit values, sometimes a character similar to an apostrophe is appended. The character is a punctuation mark called geresh. When geresh is

**Geresh** 05F3 not available, the single quote (U+0027) is often substituted. A space (U+0020) often separates thousands, millions, etc. The pattern for numbers 1-999 is repeated for each thousand from 1,001- 999,999. Millions and Billions etc. are formed by extending and repeating the pattern.

**Examples**

The number 764 in Hebrew is: תשסד.  
 The value is calculated as 400 (ת) + 300 (ש) + 60 (ס) + 4 (ד) = 764.

This table shows different numbers written in hebrew. The numbers in blue show the special handling for numbers ending in 15 and 16.

1-10	א	ב	ג	ד	ה	ו	ז	ח	ט	י
11-20	יא	יב	יג	יד	טו	טז	יז	יח	יט	כ
711-720	תשי"א	תשי"ב	תשי"ג	תשי"ד	תשי"ה	תשי"ז	תשי"ח	תשי"ט	תשי"כ	תשי"כ
5,821-5,830	ה'תכ"א	ה'תכ"ב	ה'תכ"ג	ה'תכ"ד	ה'תכ"ה	ה'תכ"ו	ה'תכ"ז	ה'תכ"ח	ה'תכ"ט	ה'תכ"י

Here are a few more examples:  
 1,000 א' א'  
 1,000,000 א' א'  
 3,001,764 א' א' תשס"ג

**Numbers Mixed With Text**

**Geresh** 05F3      **Gershayim** 05F4  
 Using letters for numbers, there is the possibility of confusion as to whether a string of letters is a word or a numerical value. Therefore, when numbers are used with text, punctuation marks are added to distinguish their numerical meaning. Single character numbers (numbers less than 10) add the punctuation character geresh after the numeric character. Larger numbers insert the punctuation character gershayim before the last character in the number.

**Examples of Numbers with Geresh and Gershayim**

This table shows numbers written in hebrew with the geresh and gershayim punctuations marks, as they would be if the numbers were embedded in text.

1-10	א	ב	ג	ד	ה	ו	ז	ח	ט	י
11-20	יא	יב	יג	יד	טו	טז	יז	יח	יט	כ

It may be difficult to distinguish a number embedded in text (and therefore followed by geresh) that is less than 10, from several thousand of the same amount (e.g. 5 versus 5,000). They are both written as a single letter followed by geresh. In these situations, the hebrew word for thousand may be written out.

**Hebrew Calendar**

The year 2004 in the Gregorian calendar is (for most of the year) the year 5764 in the Hebrew calendar. The 5000 is generally dropped on calendars and so the year is written as 764 or תשס"ד. The year 2005 is written 765 or תשס"ה. This form of representation for years is also used for [copyright dates](#).

Note: The Hebrew calendar year begins on Rosh Hashanah which generally occurs during the month of September or October. Since the Hebrew calendar does not begin on January 1 nor end on December 31, the Hebrew year will span two Gregorian years. (Or conversely, the Gregorian year will span two Hebrew calendar years.) For example, the year 2004 will span the Hebrew calendar

years 5764-5765. The year 5764 began on the eve of September 26, 2003 and ends on September 14, 2004. On September 15, 2004 the year 5765 begins.

### Related Links

[Easy-to-use Unicode Table for Hebrew Characters \(Alef-bet\)](#)

[Example Hebrew Web Page - Shema Yisrael](#)

[Right-to-Left Text in Markup Languages](#)

[User Interfaces For Right-to-Left Languages](#)

HTML 4.01 [8.2 Specifying the direction of text and tables: the dir attribute](#)

[Reading Hebrew Tombstones](#)

Unicode Consortium's [Hebrew Code Chart](#) (Acrobat PDF file)

Unicode Consortium's [Alphabetic Presentation Forms Code Chart](#) (Acrobat PDF file)

Unicode Consortium's [Unicode Standard Annex #9, The Bidirectional Algorithm](#)

I18nGuy's [Code Pages At The Push Of A Button](#).

Jewish Encyclopedia's [The Hebrew Alphabet](#)

Judaism 101 [Hebrew Alphabet](#)

Jony Rosene's [The Hebrew Alphabet](#)

Omniglot's [Hebrew Script](#)

Safur's [Hebrew Alphabet used in writing STA"M \(Sifrei Torah, Tefillin, and Mezuzos\)](#)

Boker Tov [The Alphabets of Hebrew and Arabic](#) (Japanese site)

British and Foreign Bible Society's [The Masoretes and the Punctuation of Biblical Hebrew](#) (PDF)

(Nice explanation for each Hebrew character).

[Calendar Converter](#) (Requires Browser with Javascript support)

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