

**SIGNIFICANCE AND APPLICATIONS OF ARABIC ALPHABETIC
NUMERALS (*ABAJAD*)**



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INTRODUCTION

Mathematics is said to be the mother of all sciences. Each and every civilization has a method of counting. In the 5th century BC, the Greek developed alphabetic numerals called Isopsephy. This was a system in which each alphabet represented a numeral. By the late 2nd century BC, the Hebrews imitated the Greeks and developed the Hebrew alphabetic numerals called Gematria. Consequent upon the expansion of the Muslim territory beyond the Arabian Peninsula that brought about contact with different cultures and societies as well as translation of scientific writings of Greeks and other civilizations into Arabic in the 7th and 8th centuries which paved the way for development of Islamic sciences, the Arabs instituted two numbering systems: the Arabic alphabetic numerals popularly called *Abajad* and later what is today known as Arabic numerals (0, 1, 2 ... 9).

As a result of universal adoption of Arabic numerals in modern Mathematics, alphabetic numerals have been neglected and are used only for creating list of items i.e. 1st, 2nd, 3rd, 4th, etc. Thus, this write-up aims at unveiling the significance and applications of *Abajad* numerical system for the benefit of Muslims and non-Muslims alike who are interested in learning a segment of ancient Arabian culture.

Imam As-Suyuti in his *Tafsir* cited a *Hadith* in which the Jews of Madina went to the Prophet (SAW) and said: “Your Qur’an is initialled with *Alif Lam Mim*, and those initials determine the lifespan of your religion. Since *Alif* is 1, *Lam* is 30 and *Mim* is 40, this means that your religion will survive only 71 years.” Muhammad (SAW) said, “We also have *Alif Lam Mim Sad*.” They said, “*Alif* is 1, *Lam* is 30, *Mim* is 40 and *Sad* is 90. This adds up to 161. Do you have anything else?” The Prophet (SAW) said, “Yes, *Alif Lam Mim Ra*.” They said, “This is longer and heavier; the *Alif* is 1, *Lam* is 30, *Mim* is 40 and *Ra* is 200, making the total 271.” They finally gave up saying, “We do not know how many of these initials he was given.”

The take-home point is that as a culture, *Abajad* is not an exclusive reserve of Arabian Muslims. It was used by Christian Arabs, Jewish Arabs, Pagan Arabs, etc. even before the coming of Muhammad (SAW). According to Wikipedia, “*Abajad* numerals have been used in the Arabic-speaking world since before the eighth century.” So I do not expect anyone to go looking for a *Hadith* in which the Prophet (SAW) taught his companions *Abajad*.

One of its advantages is that it helps us to understand Arabic words better. As we shall later explain, most Arabic words have a literal meaning and a deeper meaning. Also, it helps us to carryout mathematical operations. So for Muslims, since the Qur'an was revealed in Arabic, *Abajad* invariably will enable us understand the Qur'an better through mathematical operations and equations which will lead to unearthing a deeper understanding of the verses. This is called *TAFSIL* of the Qur'an. It differs from the usual commentary or *TAFSIR*.

THE GREEK ALPHABETIC NUMERALS

There are 24 Greek alphabets. In order to generate alphabetic numerals, the first 9 represented numbers 1 to 9. The next 9 were used to denote numbers 10 to 90 while the final 9 were designated for numbers 100 to 900. That made a total of 27 alphabets which was more than the available 24. As a result, 3 extra letters were introduced so as to strike a balance between the alphabets and numerals. These were digamma (6), koppa (90) and sampi (900).

A complete list of Greek alphabetic numerals (English pronunciation) is presented below:

Alpha = 1	Beta = 2	Gamma = 3	Delta = 4
Epsilon = 5	Digamma = 6	Zeta = 7	Eta = 8
Theta = 9	Iota = 10	Kappa = 20	Lamda = 30
Mu = 40	Nu = 50	Xi = 60	Omicron = 70
Pi = 80	Koppa = 90	Rho = 100	Sigma = 200
Tau = 300	Upsilon = 400	Phi = 500	Chi = 600
Psi = 700	Omega = 800	Sampi = 900	

Slick (2008) noted that the Greek word for Jesus (IhsouV) has a mathematical equivalent of 888.

HEBREW ALPHABETIC NUMERALS

Hebrew equally has 27 alphabets. They are:

Aleph = 1	Bet = 2	Gimel = 3	Deled = 4
Heh = 5	Vov = 6	Zayin = 7	Ches = 8

Tes = 9	Yod = 10	Chof = 20	Lamed = 30
Mem = 40	Nun = 50	Samech = 60	Ayin = 70
Pey = 80	Tzadi = 90	Kuf = 100	Reish = 200
Shin = 300	Tof = 400	Final chof = 500	Final mem = 600
Final nun = 700	Final pey = 800	Final tzadi = 900	

Both Greek and Hebrew alphabetic numerals have no 1000 as a standalone alphabet. However, Hebrews use the first alphabet to denote both 1 and 1000.

ARABIC ALPHABETIC NUMERALS (*ABAJAD*)

The striking difference between the Arabic alphabetic numerals and that of the Greek and Hebrews is that the arrangement is not in chronological order such that ^أ is 1, ^ب is 2, ^ت is 3, etc. Also, since Arabic has 28 alphabets, a separate alphabet is used to represent 1000. The *Abajad* numerical system is presented below:

Alphabet	Number		Alphabet	Number
أ	1		س	60
ب	2		ع	70
ج	3		ف	80
د	4		ص	90
هـ	5		ق	100
و	6		ر	200
ز	7		ش	300
ح	8		ت	400
ط	9		ث	500
ي	10		خ	600
ك	20		ذ	700
ل	30		ض	800
م	40		ظ	900
ن	50		غ	1000

It can be observed that the name *Abajad* was derived from the first four letters representing 1, 2, 3 and 4. The downside of alphabetic numerals (Greek, Hebrew and *Abajad*) and probably why they were replaced by Arabic numerals in modern Mathematics is the absence of Zero; a very significant figure.

THE “MISSING” NUMBERS

Notice that several numbers such as 11, 12, 145, 888, etc. are “missing.” How do we write them? Simple. We use the principle of Thousands, Hundreds, Tens and Units in Arithmetic. For example,

$$\begin{aligned}25 &= 2 \text{ (Tens)} + 5 \text{ (Units)} \\ &= 20 + 5 \\ &= \text{هـ} + \text{ك} \\ &= \text{هَآكُ}\end{aligned}$$

Unlike English whereby the Tens is read before the Unit because it is a left-to-right language, in Arabic, the Unit is read before the Tens since it is a right-to-left language. So, 25 in *Abjad* system is *Haku*. However, there are no hard and fast rules regarding how the vowels should be placed. Therefore, do not be taken aback when someone decides to pronounce it as *Haka*, *Haki*, *Hiki*, *Huku*, *Hika* or *Hiku*. Hence, the vowelization in this write-up should not be considered sacrosanct. You are free to pronounce it the way you like.

More Examples

$$\begin{aligned}49 &= 4 \text{ (Tens)} + 9 \text{ (Units)} \\ &= 40 + 9 \\ &= \text{ط} + \text{م} \\ &= \text{طَمُّ}\end{aligned}$$

$$\begin{aligned}77 &= 7 \text{ (Tens)} + 7 \text{ (Units)} \\ &= 70 + 7 \\ &= \text{ز} + \text{ع} \\ &= \text{زَعُّ}\end{aligned}$$

$$126 = 1 \text{ (Hundred)} + 2 \text{ (Tens)} + 6 \text{ (units)}$$

$$= 100 + 20 + 6$$

$$= \text{و} + \text{ك} + \text{ق}$$

$$= \text{وَكْتُ}$$

$$304 = 3 \text{ (Hundreds)} + 0 \text{ (Tens)} + 4 \text{ (Units)}$$

$$= 300 + 4$$

$$= \text{د} + \text{ش}$$

$$= \text{دَش}$$

$$1568 = 1 \text{ (Thousand)} + 5 \text{ (Hundreds)} + 6 \text{ (Tens)} + 8 \text{ (Units)}$$

$$= 1000 + 500 + 60 + 8$$

$$= \text{ح} + \text{س} + \text{ث} + \text{ع}$$

$$= \text{حَسَنَةٌ}$$

$$1999 = 1 \text{ (Thousand)} + 9 \text{ (Hundreds)} + 9 \text{ (Tens)} + 9 \text{ (Units)}$$

$$= 1000 + 900 + 90 + 9$$

$$= \text{ط} + \text{ص} + \text{ظ} + \text{ع}$$

$$= \text{طَصَظَةٌ}$$

$$2000 = 2 \text{ (Thousands)}$$

$$= 2 \times 1000$$

$$= \text{ع} + \text{ب}$$

$$= \text{عَبٌّ}$$

Note that any number that is a multiple of 1000, multiplication is used as shown above preceded by ع. In other words, a letter or group of letters that appear after ع indicates thousands.

$$4571 = 4 \text{ (Thousands)} + 5 \text{ (Hundreds)} + 7 \text{ (Tens)} + 1 \text{ (Unit)}$$

$$= [4 \times 1000] + 500 + 70 + 1$$

$$= \text{أ} + \text{ع} + \text{ث} + \text{غ} + \text{د}$$

$$= \text{أَعْتَدَ}$$

$$934005 = 934 \text{ (Thousands)} + 0 \text{ (Hundreds)} + 0 \text{ (Tens)} + 5 \text{ (Units)}$$

$$= [934 \times 1000] + 5$$

$$= \text{ه} + \text{غ} + \text{د} + \text{ج} + \text{ط}$$

$$= \text{هَعْدَجَط}$$

This process of converting a number to a pronounceable word is called Articulation Enunciation and Vocalization (AEV). That is, one is expected to Articulate and Enunciate the value for possible Vocalization.

MEANING OF NUMBERS

The above numbers are random examples. Sometimes, one may be interested in knowing the “secret” behind certain numbers. In that case, determine the AEV of the number and look up the meaning of the resulting word in an advance Arabic dictionary. For example, the Messengers of God are said to be 313. Then what does the number 313 signify? Let’s find out.

$$313 = 300 + 10 + 3$$

$$= \text{ج} + \text{ي} + \text{ش}$$

$$= \text{جَيْش}$$

Meaning: army, troops, armed forces

Men of the armed forces have some peculiar characteristics. They are highly disciplined. They obey marching orders without recourse to their personal opinions. Hence, we can deduce that the Messengers of God are an army sent with one and single instruction of guiding their people unto the path of righteousness. In the course of carrying out their assignment, they often times overlook their sentiments. The decision of Ibrahim to sacrifice his only son is a case in point.

In Qur'an 74:30, God said, "Over it are nineteen." Several authors have explained the mathematical miracle of the Qur'an using the number 19. For example, *Basmala* has 19 letters and it appears in the Qur'an 114 times. 114 is a multiple of 19 i.e. 19×6 . This subject has been exhaustively discussed; hence a repetition here will not be necessary. A Google search of "mathematical miracle of Qur'an" should generate relevant readings.

However, 19 in the verse actually refer to the number of angels guarding Hell. One may be tempted to ask: are these 19 angels permanently stationed there or they operate in shifts such that at every moment there are 19 of them? To understand the verse better and similarly answer this question, we find the AEV of 19 and look up the meaning:

$$\begin{aligned}
 19 &= 10 + 9 \\
 &= \text{ط} + \text{ي} \\
 &= \text{طَي}
 \end{aligned}$$

Meaning: concealment, binding

Therefore, we can deduce that the guards are concealed inside, binded together with, or permanently stationed in Hell; so they do not operate in shifts. Little wonder why at some point (as a result of interpersonal relationship that has been established, God knows best), the dwellers of Hell will say to the guards: "Call upon Your Lord to lighten for us the torment for a Day!" (Qur'an 40:49)

The Book of Revelations 13:18 in the New Testament reads: "Here is wisdom. Let him who has understanding calculate the number of the beast, for it is the number of a man: His number is 666." Just like the number 19, the beast number 666 has been interpreted in so many ways. One of them is that it is the sum of the squares of the first seven prime numbers. Thus,

$$2^2 + 3^2 + 5^2 + 7^2 + 11^2 + 13^2 + 17^2 = 666$$

However, in order to know what the number really means, *Abajad* comes handy. Therefore,

$$666 = 600 + 60 + 6$$

$$= \text{و} + \text{س} + \text{خ}$$

$$= \text{وَسَخٌ}$$

Meaning: to be or become dirty, soil, sully, stain, foul

Today, we see pictures of so-called celebrities depicting the number 666 using their fingers by forming a circle with their thumbs and forefingers. The coded message they are trying to pass across is that they are agents of the beast and have chosen for themselves a dirty way of life, whosoever is interested should imitate them.

CONVERTING WORD TO NUMBER

Conversely, any word can also be converted to a number using a reverse operation, thus:

شَمْسٌ

$$= \text{ش} + \text{م} + \text{س}$$

$$= 60 + 40 + 300$$

$$= 400$$

ذَهَبٌ

$$= \text{ذ} + \text{ه} + \text{ب}$$

$$= 2 + 5 + 700$$

$$= 707$$

Likewise, names of humans and of Names of God can be converted to numbers.

مُحَمَّدٌ

$$= \text{م} + \text{ح} + \text{م} + \text{د}$$

$$= 4 + 40 + 8 + 40$$

$$= 92$$

$$\begin{aligned}
& \text{الله} \\
& = \text{ه} + \text{ل} + \text{ل} + \text{ا} \\
& = 5 + 30 + 30 + 1 \\
& = 66
\end{aligned}$$

IMPORTANCE OF AEV

Converting a number to a word has a lot of uses. Some of them are:

1. Ability to easily recall a number or set of numbers.
2. Revealing the hidden or secondary meaning of words.

Recalling numbers

Nowadays, we have to contend with a lot of numbers: phone numbers, zip codes, social security numbers, credit card numbers, CVV2 codes, ATM pin numbers, Bank Verification Numbers (BVN), passwords of phones, laptops, emails and other online accounts, etc. In Civic Education class, students are required to memorize certain dates like Independence Day, beginning and end of the civil war, when 12, 30 and 36 states were created, and so on. Recalling all these numbers is a daunting task. But once a figure is converted to a pronounceable word, it is easier to remember.

I once processed a Post Office Box for someone. I had difficulty recalling the number. So I converted it to AEV and it gave me **بعذغج**. What number is that?

Revealing hidden meaning of words

Arabic words have literal or primary meanings based on day-to-day usage. But they also have hidden or secondary meanings which in most cases outshine the former. This enables us to understand the words better. To obtain the hidden meaning of any word, follow these steps:

1. Convert the word into a number using *Abjad*.
2. Determine the AEV of the number.
3. Look up the meaning of the AEV in an advanced Arabic dictionary.

For details, read or download INTRODUCTION TO *TAFSIL* OF THE QUR'AN from www.sadtayyfoundation.org

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