

Arabic Geometric Letters are the foundation of the Universal Phonetic Alphabet (UPA)

Arabic Geometric Letters and Numerals

When the Arabs introduced **Zero** (*SIFR* in Arabic) in the Arabic Decimal System, **the first nine letters** became enough to write any number by assigning the weight of **units** (1-9), **tens** (10-90), or **hundreds** (100-900) to same numeral depending on its position in the **first, second or third** place from right to left.

Therefore, the **1st generation of 10 numerals**, currently called **Hindi**, based on the **number of fingers** of one hand was used instead of **28** letters. Then, a **2nd generation** of numerals emerged which was based on the **number of angles**, currently called **Arabic numerals** or (*Chiffres Arabes*) in French. The angles could be acute or right and could be also rounded. Thereafter, the Arabic decimal system spread all over the world and became the universal numeric system or (*SI: Système International*) in French.

The Ten Arabic Numerals (2nd generation)	9	8	7	6	5	4	3	2	1	0
Arabic Geometric Numerals (3rd generation)	٩	٨	٧	٦	٥	٤	٣	٢	١	٠

Arabic Geometric Numerals

The **Arabic Geometric numerals** represent the **3rd generation** of Arabic numerals based on the number of right angles and equal sides of two joined squares. Additional smaller sides were added to certain numerals (٢, ٥, ٦, ٩) to distinguish them from certain Geometric letters as (٥, ٢, ٩). However, these smaller sides were ignored in the electronic version called **Digital** for simplified programming.

Similarly, a new set of **13 basic un-dotted Arabic Geometric letters** (أح، عس، صم، طرد، وهلك) were derived from only **10 shapes** based on the sides of two joined squares similar to the **10 numerals** as shown below. Additional dotted letters are made by adding one, two or three dots above or below the basic letters in order to have the complete set of **28** corresponding Arabic Geometric Abjad letters.

ك	ل	هـ	و	د	ر	ط	م	ص	س	ع	ح	أ
ڪ	ل	هـ	و	د	ر	ط	م	ص	س	ع	ح	ا

The un-dotted Arabic Geometric letters

ضظغ			ثخذ			قرشت			سغفص			كلمن			حطي			هوز			أجد					
غ	ظ	ض	ذ	خ	ث	ت	ش	ر	ق	ص	ف	ع	س	ن	م	ل	ك	ي	ط	ح	ز	و	هـ	د	ج	ب
غ	ظ	ض	ذ	خ	ث	ت	ش	ر	ق	ص	ف	ع	س	ن	م	ل	ك	ي	ط	ح	ز	و	هـ	د	ج	ب

Arabic Abjad Geometric letters

These Geometric letters can be enhanced further to contain additional optional forms of Arabic letters as the final Haa (ح) and the Taa Marbootah (ة) at the end of a word or Alif (ا) at the beginning of a word instead of Hamzah (أ). Latin letters missing in Arabic as (g, p, v, ch) {گ، پ، و، چ} are also included.