Ultimate Mathematics

by

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The author thanks the Initiator of all, the All Merciful God.

Contents

List of Tables

List of Figures

Chapter 1

Introduction

The chief aim of all investigations of the external world should be to discover the rational order and harmony which has been imposed on it by God and which He has revealed to us in the language of mathematics. - Johannes Kepler (1571-1630)

Over millennia humans were taught the science of mathematics by which they could understand the nature around them, or in other words, their own home as well as themselves. Our home happens to be so large and beautiful that a short-lived study does not yield much knowledge and it has taken us a long time to understand only a very minute amount about its structure. The problem is compounded by the fact that we can only look at our home from the inside and with a very limited view.

The fundamental tool at man's disposal is the tool of numbers. These numbers starting with integers, or whole numbers, seem to be the primary system describing nature in a very basic way. The old concept of the four (4) elements, wind, fire, water and earth is an example of assignment of numbers to objects. After John Dalton (1766 - 1844) suggested the atomic theory of matter,

a number system seemed to be the method of describing the different masses for different atoms. The learning process continued with Dmitriy Ivanovich Mendeleyev (1834 - 1907) who came up with the first Periodic Table of the Elements. Mendeleyev ordered the elements according to their increasing mass. The system had flaws because some isotopes of a given element were heavier than the next most abundant element. The problem was solved when Henry Moseley (1887 - 1915) arranged the elements according to their increasing electrical charge. This is so elegant and yet simple that even a child can utter the order of chemical elements by simply counting numbers. So, when a child counts from 1 to 10, he or she, in effect, says Hydrogen, Helium, Lithium, Beryllium, Boron, Carbon, Nitrogen, Oxygen, Florine, and Neon.

In the early 20^{th} century the concept of Quantum Theory and discreteness of mass and energy as in the case of electric charge, necessitated the proposal of yet another number system known as Quantum numbers. These quantum numbers such as spin, angular momentum, isospin, hyper-charge, flavor, and color do not seem as elegant and simple as those generating the periodic table of elements, however, they have provided us with tools to design and manufacture many new systems we utilize in our modern life.

Our ability to count and assign numbers to various objects which were previously unknown to us, stems from the fact that numbers pre-existed everything else. Therefore, numbers provide the tools by which we analyze and recognize everything.

The eternal aspect of numbers and their independence of the physical universe or ultimately the multiverse suggests that physical existence has a

design and a purpose emanating from intelligence and therefore can be called "creation". In this book, we will witness a manifestation of mathematics never seen before and which without a doubt can be called "Ultimate Mathematics".

Chapter 2

Ultimate Mathematics

In this chapter the reader will be introduced to a mathematics which I have called Ultimate Mathematics. The reason for this choice of words will become clear later on, but as a start I must say that this is a mathematics which unveils secret properties of numbers and how primes, twin primes, composites, Gaussian primes, Mersenne primes and other types of primes, which will be introduced later, relate to their indices as well as how their indices relate to one another. The mathematics uses sophisticated relations in number systems, all unknown to us, crosses number bases and has formidable group structure. The mathematics of primes, twin primes, composites, twin prime companions and their relations to their respective indices as well as index relations to groups and each other are well beyond human knowledge. The study of these mathematical relations constitute a first time investigation of such number properties and should be considered a historical event in our understanding of numbers.

2.1 Prime Numbers

The mathematics of prime numbers has fascinated mathematicians since humans started to count. Prime numbers are a class of integers that are only divisible

Index	Prime
1	2
2	3
3	5
4	7
”	”
8	19
”	”
19	67
”	”
114	619
”	”
619	4567
”	”
1187	9619

Table 2.1: Some prime numbers with their positional indices

by themselves and one. The number one itself is not considered a prime. Some prime numbers and their indices are shown in table 2.1.

The first order of business is to simply look at a number and decide whether or not it is a prime. This is a monumental task since there is no algebraic equation generating prime numbers.

The second order of business seems to be to determine if there are infinitely many primes. This task was achieved long ago by Euclid (325BC-265BC) who proved it in a most elegant way. This is one of the early proofs known which utilizes the method of contradiction to establish a result.

This method of contradiction is described as following. Let us assume that we have found the largest prime number P, we then can construct a composite C that is the product of all prime numbers up to and including P. In other words,

$$C = 2 \times 3 \times 5 \times 7 \times 11 \times 13 \times 17 \times 19 \times ..... \times P. \tag{2.1}$$

Then (C + 1) is either a prime or a composite. If it is prime, then it is by far larger than P. If it is a composite, it cannot be divisible by any of the primes in the above product; however, it has to be factorized into primes and these prime numbers have to be larger than the primes in the above product. We, therefore, can always find a prime larger than an existing prime and consequently we have infinitely many primes.

A third immediate challenge is to obtain a relation between the left and the right numbers in table 2.1. We refer to a number in the left column of table 2.1 as the index of a prime. The index of a prime is simply its ascending positional rank. We could, for example, ask the following question:

What is the 98^{th} prime number?

We would not be able to spontaneously say 521, unless we generate all prime numbers from the first prime number which is 2 to the 98^{th} prime which is 521. There is, however, an approximate answer to the above question. This is due to Gauss' prime number theorem that relates a prime to its index through the following relation;

$$i = \frac{p}{\ln p} \tag{2.2}$$

where the symbol 'ln' denotes the natural logarithm. The above theorem was proven in the 20^{th} century. The above relation actually links the index and its corresponding prime in an asymptotic manner and the index and the prime approach the actual values as they tend to infinity. I must, however, emphasize again that there is no known relation that gives the exact values of the prime and its corresponding index.

An analytic relation of a quadratic form $n^2 - n + 41$ generates primes for values of n in the range of $0 < n < 40$. Are there infinitely many primes of this form? The same question applies to $n^2 - 79n + 1601$ which again generates primes for $0 < n < 79$. Note, although these quadratic expressions generate primes for a given n, they do not generate the indices of these primes. In other words, n is not the index of a generated prime.

2.2 Composites

Now let us explore another class of numbers known as composites. If we remove all of the prime numbers from the group of integer numbers, then we are left with composites. Composites are numbers that can be factored into primes. For example the number 341 is a composite because

$$341 = 11 \times 31. \tag{2.3}$$

Euclid also gives a proof of the Fundamental Theorem of Arithmetic: Every integer can be written as a product of primes in an essentially unique way. Table 2.2 shows some composites with their positional indices. Is there an exact relation connecting a composite number to its index? The answer again, just as in the case of primes is NO. This is because composites and primes are connected. If we denote the index of the composite with i_c and that of the prime with i_p then the relation would be in the following manner;

$$i_c = p - i_p - 1. \tag{2.4}$$

Since we do not know the exact relation between prime numbers and their indices

Index	Composite
1	4
2	6
3	8
4	9
”	”
8	15
”	”
19	30
”	”
114	150
”	”
619	753
”	”
1187	1411

Table 2.2: Some composite numbers with their positional indices

in the above equation, we are unable to establish a one-to-one correspondence between composite numbers and their indices.

2.3 Twin Primes

There is yet another class of prime numbers, differing in magnitude by ”two”, known as twin primes. Some twin prime pairs are tabulated below in table 2.3.

Again, the first order of business is to determine if there are infinitely many twin primes. To date, this proof is beyond our capability. Although it makes sense that there are infinitely many twin primes, the proof has eluded mathematicians so far. This makes the handling of twin primes a step more formidable than primes.

Is there an approximate relation between twin primes and their indices? The answer is yes and this relation is due to Hardy and Littlewood[1].

Index	Twin Prime Pair
1	3,5
2	5,7
3	11,13
4	17,19
”	”
8	71,73
”	”
19	281,283
”	”
114	4271,4273
”	”
619	42569,42571
”	”
1187	96797,96799

Table 2.3: Twin prime pairs with their positional indices

$$i = 1.32 \times \int \frac{x}{(\ln x)^2 dx}. \tag{2.5}$$

Where x is any of the two twin primes.

The reader should note that the above relation does not assign a given twin prime to its index exactly, but rather predicts the general trend of twin primes.

There is also another approximate relation by the author [2] relating twin primes and their indices.

$$i = \frac{x}{\ln i \ln x} \tag{2.6}$$

This relation does not have a constant and it is very good for predicting the proximity of small twin primes relative to their indices.

Is there an exact relation between twin primes and their indices? The answer again is NO. Therefore, a one-to-one correspondence between twin primes and

Index	Twin Prime
1	3
2	5
3	7
4	11
”	”
8	29
”	”
19	109
”	”
227	4271
”	”
1237	42569
”	”
2354	96797

Table 2.4: Twin primes individually with their positional indices

their indices is only possible by generating them and tabulating them as in table 2.3.

We can also display twin primes individually with a given index. The relation between these indices and those of table 2.3 is:

$$j = 2i - 1. \tag{2.7}$$

Therefore, the twin primes individually can be listed as in table 2.4.
The reason for tabulating these numbers in such a way is to point out some of the relations which exist among the indices of these different types of primes and composites and will become clear later in this book.

2.4 Twin Prime Companions

Let us look at the special composites bracketed by a pair of twin primes. We have coined the name Twin Prime Companion, or TPC, for this class of composites. For example, consider the three numbers 3, 4 and 5, where 3 and 5 are a pair of

Index	TPC
1	4
2	6
3	12
4	18
”	”
8	72
”	”
19	282
”	”
114	4272
”	”
619	42570
”	”
1187	96798

Table 2.5: Twin prime companions with their positional indices

twin primes and 4 is their companion, therefore, the first TPC is 4. The indices of these composites are exactly the same as those of the twin prime pairs. Table 2.5 shows a few TPCs with their associated indices.

A close inspection of table 2.5 reveals that all these numbers, except for the first one, that is 4, are divisible by 6 and they all end with 0, 2, and 8 except for the first two, 4 and 6. This specific property of these numbers offers a unique opportunity to generate twin primes without generating the primes first.

In our studies of the primes, twin primes, TPCs and their respective indices, we found an approximate relation which we refer to as ”the index of the index relation” between twin primes and primes and their indices. For example the 25^{th} twin prime pair is 521 and 523, however, the indices of primes 521 and 523 are 98 and 99, respectively and there are 25 primes below 98 and 99 which is the index of the twin prime pair (521, 523).[2]

Index	Prime
1	2
2	23
3	37
4	47
”	”
8	83
”	”
19	223
”	”
114	1187
”	”
619	677
”	”
790	9619

Table 2.6: Lonely prime numbers with their positional indices

2.5 Lonely Primes

Now let us remove all twin primes from the list of primes and what we are left with are the lonely primes, a name we have given to these primes. Since it is proven that there are infinitely many primes, we can then safely conclude that there are also infinitely many lonely primes. Again, there is no known relation between lonely primes and their respective indices. Table 2.6 shows a few lonely primes and their indices.

2.6 Prime-Index Additive Primes

Now let us look at another class of primes. These primes are the sum of a prime and its index. These are a subset of primes, but a lot less common than ordinary primes. Table 2.7 shows the first 19 such primes.

Index		Prime
1	1 + 2	3
2	2 + 3	5
3	4 + 7	11
4	6 + 13	19
5	18 + 61	79
6	22 + 79	101
7	24 + 89	113
8	26 + 101	127
9	32 + 131	163
10	34 + 139	173
11	42 + 181	223
12	48 + 223	271
13	66 + 317	383
14	70 + 349	419
15	72 + 359	431
16	82 + 421	503
17	92 + 479	571
18	96 + 503	599
19	98 + 521	619

Table 2.7: Some positionally additive prime numbers with their positional indices

2.7 Prime-Index Additive Composites

This is yet another class of numbers, more specifically another set of composites where the composite is partitionable into a prime and its index or in other words the addition of a prime and its index yields a composite number. Table 2.8 shows the first 19 positionally additive composites with their associated indices.

2.8 Same-Rank Composite + Prime = Prime

There is a class of prime numbers that are partitionable into a composite plus a prime with the same positional rank. For example, the 3^{rd} composite is 8 and the 3^{rd} prime is 5, and $8 + 5 = 13$ which is another prime. We tabulate these prime numbers in table 2.9 with their associated indices or positional ranks.

Index		Composite
1	3 + 5	8
2	5 + 11	16
3	7 + 17	24
4	8 + 19	27
5	9 + 23	32
6	10 + 29	39
7	11 + 31	42
8	12 + 37	49
9	13 + 41	54
10	14 + 43	57
11	15 + 47	62
12	16 + 53	69
13	17 + 59	76
14	19 + 67	86
15	20 + 71	91
16	21 + 73	94
17	23 + 83	106
18	25 + 97	122
19	27 + 103	130

Table 2.8: Some prime plus index positionally additive composites numbers with their positional indices

2.9 Mersenne Primes

A Mersenne prime is a prime number that is of the form $2^p - 1$ where the exponent p is itself a prime number. For example, 31 is a Mersenne prime because it can be written as $2^5 - 1$, which is equal to 32 - 1. Not every prime in the exponent produces a Mersenne prime.

Mersenne primes are related to perfect numbers. Perfect numbers are numbers that are equal to the sum of all their proper divisors. Historically, the study of Mersenne primes was originally motivated by this relation. Euclid discovered that the first four perfect numbers are generated by

$$P_n = 2^{p-1}(2^p - 1) \tag{2.8}$$

In the 18^{th} century, Euler proved that all even perfect numbers have this form.

Index	Index of Prime and Composite		Prime
1	3	5 + 8	13
2	7	17 + 14	31
3	10	29 + 18	47
4	14	43 + 24	67
5	16	53 + 26	79
6	18	61 + 28	89
7	19	67 + 30	97
8	20	71 + 32	103
9	22	79 + 34	113
10	28	107 + 42	149
11	31	127 + 46	173
12	32	131 + 48	179
13	37	157 + 54	211
14	39	167 + 56	223
15	42	181 + 60	241
16	47	211 + 66	277
17	52	239 + 74	313
18	57	269 + 80	349
19	59	277 + 82	359

Table 2.9: Some prime plus composite positionally additive prime numbers with their positional indices

No odd perfect number has ever been discovered. Note we also can write perfect numbers as

$$P_n = \frac{M(M+1)}{2} \tag{2.9}$$

In the above equation $\frac{M(M+1)}{2}$ is the arithmetic series of M. Number 6 is the smallest perfect number. All perfect numbers, except 6, have a digital root of 1. Digital root refers to consecutive additions of digits in a number. For example; the digital root of the perfect number 28 is $2 + 8 = 10; 1 + 0 = 1$.

In table 2.10, we show some exponents of the Mersenne primes and their number of digits as well as the number of digits of the corresponding perfect number. This is because the numbers themselves grow very fast and are two large to tabulate.

Table 2.10: Exponents of Mersenne Primes and their positional indices

Index	Exponent	M_p Number of digits	P_p Number of digits	Year of discovery	Discoverer
1	2	1	1	—	—
2	3	1	2	—	—
3	5	2	3	—	—
4	7	3	4	—	—
5	13	4	8	1456	anonymous
6	17	6	10	1588	Cataldi
7	19	6	12	1588	Cataldi
8	31	10	19	1772	Euler
9	61	19	37	1883	Pervushin
10	89	27	54	1911	Powers
11	107	33	65	1914	Powers
12	127	39	77	1876	Lucas
13	521	157	314	1952	Robinson
14	607	183	366	1952	Robinson
15	1279	386	770	1952	Robinson
16	2203	664	1327	1952	Robinson
17	2281	687	1373	1952	Robinson
18	3217	969	1937	1957	Riesel
19	4253	1281	2561	1961	Hurwitz

2.10 Gaussian Primes

Carl Friedrich Gauss was born in Brunswick (Germany) on April 30^{th}, 1777 and was the only son of poor lower-class parents. A popular story about his early education demonstrates his unique gifts. While in elementary school his teacher tried to occupy naughty pupils by making them add up the integers from 1 to 100. Little Gauss who misbehaved one day, was assigned this arduous task. Carl, however, produced the correct answer within seconds by a flash of mathematical genius, to the surprise of all. Gauss had figured out that pairwise addition of terms from opposite ends of the list yielded identical intermediate sums: $1 + 100 = 101, 2 + 99 = 101, 3 + 98 = 101$, and so on, for a total sum of $50 \times 101 = 5050$.

Gauss' contributions to the field of number theory and electromagnetism are invaluable. Without complex numbers, we would not have the knowledge to build any of the modern electronic devices.

If you pick up your calculator and punch in -1 and then punch the *sqrt* button, you will get an error. This is because the square root of a negative number is not defined for real numbers. However, in the complex plane we can draw an imaginary axis and have imaginary numbers such as i, 2i, 3i, and so on. A complex number is the sum of a real number and an imaginary number, such as (4 + i) or (5 + 3i).

A Gaussian prime is a prime that could either be complex or real and it is only divisible by itself, 1, -1 or i, -i. A complex number of the form (a + bi) is a Gaussian prime if and only if $a^2 + b^2$ is a prime. Therefore, (4 + i) is a Gaussian prime, however, (4 + 3i) is not. The first five real Gaussian primes are 3, 7, 11,

Table 2.11: Some real Gaussian primes with their positional indices

Gaussian Prime index	Ordinary Prime index	Real Gaussian Prime
1	2	3
2	4	7
3	5	11
4	8	19
5	9	23
6	11	31
7	14	43
8	15	47
9	17	59
10	19	67
11	20	71
12	22	79
13	23	83
14	27	103
15	28	107
16	31	127
17	32	131
18	34	139
19	36	151
”	”	”
47	92	479

19, and 23; and are of the form $(4n + 3)$, where n is any integer including 0.

Real Gaussian primes cannot be factored out into complex numbers. The prime number 17, for example, is not a Gaussian prime, since it can be factored out into $(4 + i)(4 - i) = 17$.

Now let us tabulate all real Gaussian primes. Table 2.11 shows real Gaussian prime numbers with their associated indices as well as their indices for ordinary primes.

2.11 Factorizing Primes in the Complex Domain

As it is mentioned above, Quran's system is formidable beyond our wildest imagination. We know that primes can not be factorized in the domain of real numbers. As a matter of fact prime numbers form a basis on which all composites are built. In other words, every composite number can be factored out into primes. This is mathematical rule. Factorization is not a trivial task and it is a formidable number crunching task. Some primes can be factored out only in the complex domain. This, known as "unique factorization domain" can be thought of a prime number being a sophisticated complex polynomial that may or may not be factorized into complex numbers. These sets of complex numbers have to be integers and are usually known, or referred to, as Gaussian integers. An easy example of a prime factoring into Gaussian integers is the case of primes with the following form. Fermat primes can be considered as a subset of these primes:

$$p = n^2 + 1 \tag{2.10}$$

Some examples of Fermat primes are 5, 17, 37, 101, and 257. Note;

$$i \times i = -1 \tag{2.11}$$

2.12 Group Structure

Group properties of numbers can also be studied and sometimes they seem to have connections with prime numbers and their indices. We demonstrate this relation with a specific prime number 9127.

Table 2.12: Permutation group elements of 1279 with their ascending positional indices

index	group element	index	group element
1	1279	13	7129
2	1297	14	7192
3	1729	15	7219
4	1792	16	7291
5	1927	17	7912
6	1972	18	7921
7	2179	19	9127
8	2197	20	9172
9	2719	21	9217
10	2791	22	9271
11	2917	23	9712
12	2971	24	9721

Let us look at the permutation group properties of the four digits 1, 2, 7, and 9. We can make 4! or 24, 4-digit numbers. These are tabulated in table 2.12.

It is noteworthy that 11 numbers in the above table are prime numbers. We will see later on in this book that there are relations between specific group indices and primes, as well as twin primes and their respective indices.

2.13 TPC - Index Positionally Additive Primes

These primes are a class of primes that are partitionable into a TPC and its index. They are very rare and some are tabulated below in table 2.13.

2.14 Index, TPC Concatenated Prime

These primes are a class of primes that are the result of the concatenation of a TPC and its index. They are extremely rare and some are tabulated below in table 2.14.

Index	TPC Idx + TPC	Prime
1	1 + 4	5
2	7 + 60	67
3	11 + 138	149
4	13 + 180	193
5	17 + 240	257
6	25 + 522	547
7	37 + 1032	1069
8	41 + 1152	1193
9	43 + 1278	1321
10	49 + 1482	1531
11	53 + 1668	1721
12	55 + 1722	1777
13	71 + 2340	2411
14	77 + 2712	2789
15	83 + 3120	3203
16	89 + 3360	3449
17	113 + 4260	4373
18	145 + 6132	6277
19	151 + 6552	6793

Table 2.13: Some TPC + index positionally additive primes with their positional indices

Index	TPC Idx	Prime
1	1	41
2	7	607
3	13	18013
4	19	28219
5	23	43223
6	31	81031
7	37	103237
8	43	127843
9	49	148249
10	53	166853
11	77	271277
12	83	312083
13	91	339091
14	97	358297
15	109	4158109
16	139	5658139
17	143	5880143
18	149	6360149
19	151	6552151

Table 2.14: Some TPC-index positionally concatenated primes with their positional indices

Index	TPC Idx	Twin TPC
1	(2, 3)	(6, 12)
2	(3, 4)	(12, 18)
3	(9, 10)	(102, 108)
4	(14, 15)	(192, 198)
5	(32, 33)	(822, 828)
6	(49, 50)	(1482, 1488)
7	(57, 58)	(1872, 1878)
8	(63, 64)	(2082, 2088)
9	(85, 86)	(3252, 3258)
10	(92, 93)	(3462, 3468)
11	(138, 139)	(5652, 5658)
12	(197, 198)	(9432, 9438)
13	(247, 248)	(13002, 13008)
14	(279, 280)	(15642, 15648)
15	(281, 282)	(15732, 15738)
16	(285, 286)	(16062, 16068)
17	(316, 317)	(18042, 18048)
18	(326, 327)	(18912, 18918)
19	(333, 334)	(19422, 19428)

Table 2.15: Some Twin TPCs with their positional indices

2.15 Twin TPC

Twin TPCs are a pair of consecutive TPCs, differing in magnitude by 6, such as (6,12), (12,18), (102, 108) and so on. These numbers grow very rapidly in magnitude. It is very instructive to study these numbers and their indexal relations. Table 2.15 shows some of these twin TPCs.

2.16 Summary

These specific numbers and their respective indices constitute numerical relations and properties never studied before. In chapter 4 of this book we will witness a literary work called the Quran which is a manifestation of the mathematics I have described in this chapter.

Chapter 3

The Quran, an Introduction

The Quran, meaning "recitation" in Arabic, was revealed on the 27^{th} night of the 9^{th} month, Ramadan, of the lunar calendar in the year 610 AD. The first verse of the Quran is; بِسمِ اللهِ الرَّحمٰنِ الرَّحِيمِ meaning "In the name of God, The All Gracious, The All Merciful". This verse is at the beginning of every sura or chapter, except for sura 9 and it is mentioned twice in sura 27. Throughout this book, I refer to this verse as "Bismallah".

The Quran has 114 chapters or suras, 6234 numbered verses, and 6346 total verses. The 112 un-numbered verses are the Bismallah's starting each sura except for sura 9 as mentioned above, sura one which is verse number one, and sura 27 where it is mentioned in verse 30. At a quick glance, the number of verses in each sura and therefore their length do not seem to follow any particular pattern but the underlying structure becomes clear once the reader finishes this book.

A unique aspect of the Quran, never seen in any other book or work of literature, is that 29 of its suras are prefixed with a number of Arabic letters which do not make up any known word in the Arabic language. These Arabic

letters are referred to, first by R. Khalifa [3], as the Quranic initials, and the suras as the initialed suras. As we shall see from the mathematics described in the previous chapter, the Arabic letters in these Quranic initials and their respective frequency of their occurrence in these suras are generated by the Ultimate Mathematics described in chapter two. The eternal aspect of the mathematics points to the fact that God's system is immutable as the Quran asserts.

The total number of the word "God" or "Allah" in the Quran is 2698. The frequency of occurrence of every word in the Quran is mathematically generated and positioned in the specific sura or verse according to the generators in chapter two of this book. These parameters are based on sura 9 having 127 verses. We will see in this book that the mathematics described in chapter two of this book does not generate verses 9:128 and 9:129, and points to sura 9 having 127 verses only.

Another mathematical structure of the Quran, which again is generated by the Ultimate Mathematics, described in chapter two, is the order of the revelation of suras. This order is tabulated below in table 3.1 obtained from Appendix 23 of an English translation of the Quran by Rashad Khalifa.[3]
Table 3.1 also generates two more tables because of the unique structure of the Quran which contains the initialed suras. These suras and their un-initialed counterparts have a revelation and compilation order shown in the following two tables 3.2 and 3.3.

The literal Arabic structure of the Quran is a beautiful and concise collection of commandments, words of wisdom, good news, and warnings. It also contains

Table 3.1: Revelation and Compilation sura Numbers in the Quran

Revelation Order	Compilation Order	Revelation Order	Compilation Order	Revelation Order	Compilation Order
1	96	39	7	77	67
2	68	40	72	78	69
3	73	41	36	79	70
4	74	42	25	80	78
5	1	43	35	81	79
6	111	44	19	82	82
7	81	45	20	83	84
8	87	46	56	84	30
9	92	47	26	85	29
10	89	48	27	86	83
11	93	49	28	87	2
12	94	50	17	88	8
13	103	51	10	89	3
14	100	52	11	90	33
15	108	53	12	91	60
16	102	54	15	92	4
17	107	55	6	93	99
18	109	56	37	94	57
19	105	57	31	95	47
20	113	58	34	96	13
21	114	59	39	97	55
22	112	60	40	98	76
23	53	61	41	99	65
24	80	62	42	100	98
25	97	63	43	101	59
26	91	64	44	102	24
27	85	65	45	103	22
28	95	66	46	104	63
29	106	67	51	105	58
30	101	68	88	106	49
31	75	69	18	107	66
32	104	70	16	108	64
33	77	71	71	109	61
34	50	72	14	110	62
35	90	73	21	111	48
36	86	74	23	112	5
37	54	75	32	113	9
38	38	76	52	114	110

Table 3.2: Revelation and Compilation sura Numbers for the initialed suras in the Quran

Revelation Order	Compilation Order	Revelation Order	Compilation Order	Revelation Order	Compilation Order
1	68	11	10	21	45
2	50	12	11	22	46
3	38	13	12	23	14
4	7	14	15	24	32
5	36	15	31	25	30
6	19	16	40	26	29
7	20	17	41	27	2
8	26	18	42	28	3
9	27	19	43	29	13
10	28	20	44		

examples and narrations of historical events relating to Adam, Noah, Abraham, Moses, Jesus, Muhammad, and many other Prophets and Messengers such as Joseph, Jonah, Judah, Zachariah, John, and righteous women such as Mary and Pharaoh's wife as well as stories of the unfaithful such as Pharaoh, Abraham's father, Lot's wife, Noah's wife and many more.

For approximately 1350 solar years, this literary work stood the test of time by its shear literal beauty. Scholars and students of the Quran meticulously wrote down every word and counted the number of each letter and word in the Quran. These endeavors finally bore fruit in 1974, when Rashad Khalifa, a Ph.D. biochemist noted that a 19-based mathematical code governs the underlying structure of the Quran. His works were published in 1981 and were also referred to in an article in Scientific American by the noted number theorist Martin Gardner (1914 - 2010) in which he called Dr. Khalifa's work "an ingenuous study of the Quran."

The mathematics described in this book goes well beyond the work of Rashad

Table 3.3: Revelation and Compilation sura Numbers for un-initialed suras in the Quran

Revelation Order	Compilation Order	Revelation Order	Compilation Order	Revelation Order	Compilation Order
1	96	30	75	59	84
2	73	31	104	60	83
3	74	32	77	61	8
4	1	33	90	62	33
5	111	34	86	63	60
6	81	35	54	64	4
7	87	36	72	65	99
8	92	37	25	66	57
9	89	38	35	67	47
10	93	39	56	68	55
11	94	40	17	69	76
12	103	41	6	70	65
13	100	42	37	71	98
14	108	43	34	72	59
15	102	44	39	73	24
16	107	45	51	74	22
17	109	46	88	75	63
18	105	47	18	76	58
19	113	48	16	77	49
20	114	49	71	78	66
21	112	50	21	79	64
22	53	51	23	80	61
23	80	52	52	81	62
24	97	53	67	82	48
25	91	54	69	83	5
26	85	55	70	84	9
27	95	56	78	85	110
28	106	57	79		
29	101	58	82		

Khalifa and will offer clear evidence that not only is the Quran a manifestation of the mathematics described in chapter two, but it is impossible to be imitated since we have no knowledge of the primes, twin primes, composites, Gaussian primes, Mersenne primes, and their associated indices as well as relations among the indices of these primes. Furthermore, the reader should appreciate that the mathematics presented here, for the first time, reveals intricate relations between specific numbers and their positional index or rank and how they can be connected to number base systems and mathematical groups.

3.1 The Arabic Alphabet and Gematria

The Arabic language is one of the oldest languages derived from a Semitic root and is closely related to Hebrew both in semantics as well as grammatical structure. The Arabic alphabet has 28 letters and each letter has a "gematria" value assigned to it, very similar to Hebrew. Note that the Hebrew alphabet contains 22 letters, while the Greek alphabet has 24 letters and the classical Latin alphabet contains 23 letters. The gematria values of the Arabic alphabet is shown in the following table 3.4.

This number system provides a gematria value for every Arabic word. This word value is not unique to each word and more than one word can have the same gematria value. For example, the Arabic word وَاحِد meaning "one" has a gematria value of 19 as does هُدِي, meaning "guidance".

3.2 Numbers mentioned in the Quran

There are 30 integer numbers mentioned in the Quran, at least once. These numbers are tabulated in table 3.5. Thirteen numbers out of these thirty

Table 3.4: Sequential and Gematria Values of the Arabic alphabet

Arabic Alphabet	Ordinal Index	Gematria Value
ا	1	1
ب	2	2
ج	3	3
د	4	4
ه	5	5
و	6	6
ز	7	7
ح	8	8
ط	9	9
ي	10	10
ك	11	20
ل	12	30
م	13	40
ن	14	50
س	15	60
ع	16	70
ف	17	80
ص	18	90
ق	19	100
ر	20	200
ش	21	300
ت	22	400
ث	23	500
خ	24	600
ذ	25	700
ض	26	800
ظ	27	900
غ	28	1000

Table 3.5: Integer numbers in the Quran in ascending order

Index	Quranic numbers	Index	Quranic numbers
1	1	16	40
2	2	17	50
3	3	18	60
4	4	19	70
5	5	20	80
6	6	21	99
7	7	22	100
8	8	23	200
9	9	24	300
10	10	25	1,000
11	11	26	2,000
12	12	27	3,000
13	19	28	5,000
14	20	29	50,000
15	30	30	100,000

numbers are mentioned only once in the Quran, These are: 11, 19, 20, 50, 60, 80, 99, 300, 2,000, 3,000, 5,000, 50,000 and 100,000.

Note, six of these numbers are prime numbers. These numbers, their magnitudes and their positions and other properties are results of Ultimate Mathematics described in chapter two of this book.

There are also eight (8) fractions mentioned in the Quran, they are; $\frac{1}{10}$, $\frac{1}{8}$, $\frac{1}{6}$, $\frac{1}{5}$, $\frac{1}{4}$,$\frac{1}{3}$, $\frac{1}{2}$, and $\frac{2}{3}$. We can also make a table with all numbers mentioned in the Quran with their ascending values. Table 3.6 shows all 38 numbers in the Quran.

We will see later in this book that these numbers play an important role in the mathematical structure of the Quran based on the mathematics described in chapter two.

Table 3.6: All numbers in the Quran in ascending order

Index	Quranic numbers	Index	Quranic numbers
1	$\frac{1}{10}$	20	12
2	$\frac{1}{8}$	21	19
3	$\frac{1}{6}$	22	20
4	$\frac{1}{5}$	23	30
5	$\frac{1}{4}$	24	40
6	$\frac{1}{3}$	25	50
7	$\frac{1}{2}$	26	60
8	$\frac{2}{3}$	27	70
9	1	28	80
10	2	29	99
11	3	30	100
12	4	31	200
13	5	32	300
14	6	33	1,000
15	7	34	2,000
16	8	35	3,000
17	9	36	5,000
18	10	37	50,000
19	11	38	100,000

Chapter 4

Quran: Manifestation of the Ultimate Mathematics

4.1 Over it is 19

Chapter or sura 74, verse 30 of the Quran is the foundation upon which a humanly impossible mathematically coded literary work is built. This sura entitled "The Hidden Secret" informs us that those who claim the Quran is man-made will be proven wrong by the number 19.

The code is supportive and indicative of the underlying message of the Quran advocating worship of God alone.

The number 19 is acting as a beacon along the way to guide the reader through the maze of numbers lest one would never be able to decipher the intricate Ultimate Mathematics of the Quran.

The mathematics guaranties the fact that the Quran cannot be man-made and it cannot be altered, since it is not just "ink" and "paper". We shall see the mathematics described in chapter two of this book serves as the generator for the Quran. Therefore, since the mathematics of numbers is the eternal truth,

the Quran has to be the eternal truth. As Galileo stated, "mathematics is the language with which God has written the universe".

ACCORDING TO THE MATHEMATICS INTRODUCED IN CHAPTER TWO, THE QURAN HAS ALWAYS EXISTED AND IT IS OUTSIDE THE PHYSICAL DIMENSIONS OF THE UNIVERSE WE LIVE IN. ULTIMATE MATHEMATICS TOOK THE FORM OF A BOOK, CALLED THE QURAN, NEARLY 1400 SOLAR YEARS AGO. IT CAN SAFELY BE CONCLUDED THAT THE QURAN IS THE LITERAL EMBODIMENT OF THE ULTIMATE MATHEMATICS DESCRIBED IN CHAPTER TWO AND CAN ONLY BE AUTHORED BY GOD.

This is also a manifestation of an encompassing knowledge through the Ultimate Mathematics of primes numbers and their indices, and prime derivatives such as composites, twin primes, twin prime companions, partitionable numbers, lonely primes and their respective indices or positional ranks, TPCs, Twin TPCs, and Gaussian Primes. This is to inform us that not only is the Quran mathematically coded, but it is coded with a mathematics impossible for us to manipulate. The formidability of the code cannot be duplicated, imitated or emulated by anyone.

The function of Ultimate Mathematics, described in chapter two of this book, is to serve as the protected tablet for the Quran and is designed:

- to generate the counts of the Quranic initials,
- to generate the number of verses in each and every chapter of the Quran,
- and to prove that the Quran is a manifestation of the Ultimate

Mathematics.

The best way to introduce this formidable code is to show examples of how the mathematics described in chapter two generates the Quran.

4.2 Ultimate Mathematics Generates Six suras and their Number of Verses

Here are awesome mathematical relations based on the Ultimate Mathematics of Primes, Composites, their respective indices, group structures and number base systems providing proof that the Quran is the truth. To prove this, we start with the 19^{th} Mersenne Prime (MP). MPs are of the following form;

$$MP = 2^p - 1; \tag{4.1}$$

where the exponent p is a prime number. Note p is not just any prime number; only specific primes yield MPs. As described in chapter two, we find the exponent of the 19^{th} MP to be 4253. The MP itself is a very large number with 1281 digits and was discovered by Hurwitz in 1961.

Now let us look at the permutation group properties of the four digits 2, 3, 4, and 5 in table 4.1

The group element 19 is 5234 which is also a composite with an index of 4537. The group element 22 is 5342 and it is a composite with an index of 4635. Note, we started with 4253 as the exponent of the 19^{th} MP. The index of prime number 19 is 8. If we assume that 4253 is in base 8 then written in base 10 it will be 2219. That is why group elements 19 and 22 are important to look at.

Table 4.1: Permutation group elements of 2345 with their ascending positional indices

index	group element	index	group element
1	2345	13	4235
2	2354	14	4253
3	2435	15	4325
4	2453	16	4352
5	2534	17	4523
6	2543	18	4532
7	3245	19	5234
8	3254	20	5243
9	3425	21	5324
10	3452	22	5342
11	3524	23	5423
12	3542	24	5432

Table 4.1 has just generated the chapter or sura numbers and their associated number of verses for four suras in the Quran. 4253 is telling us that sura 42 has 53 verses, 4537 is telling us sura 45 has 37 verses, 4635 tells us that sura 46 has 35 verses and the 9^{th} group element in table 4.1 is 3425 which is the index of composite 3975 and it tells us that sura 39 has 75 verses. The 20^{th} group element 5243 is the index of 6123 and in the Quran the number of verses from 1:1 to 96:19 is exactly 6123. Also note that 6123 is the 19^{th} group element in the permutation of the 4 digits 1, 2, 3, and 6. Table 4.2 shows all the 24 permutation group elements of the above four digits.

Now let us see if we can generate 96 having 19 verses from the above two tables 4.1 and 4.2. First, we note that the index of composite 1362 is 1143 and

$$1143 = 9 \times 127. \tag{4.2}$$

We note that chapter 9 has 127 verses. But also the number of verses in the Quran from 1:1 to 9:127 is exactly 1362 [5]. Going back to the 19^{th} group

Table 4.2: Permutation group elements of 1236 with their ascending positional indices

index	group element	index	group element
1	1236	13	3126
2	1263	14	3162
3	1326	15	3216
4	1362	16	3261
5	1623	17	3612
6	1632	18	3621
7	2136	19	6123
8	2163	20	6132
9	2316	21	6213
10	2361	22	6231
11	2613	23	6312
12	2631	24	6321

elements in tables 4.1 and 4.2, we have 6123 and 5234. The difference between these two numbers is;

$$6123 - 5234 = 889. \tag{4.3}$$

Writing 889 in base 9 we have 1187, i.e., $(889)_{10} = (1187)_9$. We find the 1187^{th} prime number is 9619. This is telling us that sura 96 has 19 verses. Also, 1187 is a lonely prime and its index is 114, the number of suras in the Quran.

4.3 Ultimate Mathematics Generates the Number of Initials in the Quran

Here are awesome mathematical relations based on the Ultimate Mathematics of Primes, Composites, and their respective indices, group structures producing and proving the Quran as the manifestation of the Ultimate mathematics described in Chapter two of this book.

To prove this, we start with table 4.3.

Table 4.3: Positional additive primes

index	index + prime = prime
1	1 + 2 = 3
2	2 + 3 = 5
3	4 + 7 = 11
4	6 + 13 = 19
”	” ” ”
19	**98 + 521 = 619**
”	” ” ”
”	” ” ”
114	**808 + 6211 = 7019**
”	” ” ”

Remember our beacon is the number 19. Look at the 19^{th} positional additive prime highlighted in bold. We note immediately that sura 19 has 98 verses. Furthermore, 619 is the 114^{th} prime and 114 is exactly the number of chapters in the Quran. Now let us focus on the 114^{th} positional additive prime. We note that 6211 is a very important number in the Quran. The reader can verify that sura 62 has 11 verses. Table 4.3 has just generated chapter or sura numbers and their associated number of verses for two suras in the Quran, namely 19:98 and 62:11. Now let us see how 6211 generates the number of H.M.'s in the 7 H.M. initialed suras 40-46. The 6211^{th} composite is 7124. Table 4.4 shows the permutation group elements of 7, 1, 2, and 4.

Note 7124 is the 19^{th} group element in the permutation of the 4 digits 1, 2, 4, and 7.

Remember there are 7 حم-initialed chapters. The 7^{th} group element highlighted in boldface is 2147. The number

$$2147 = 19 \times 113, \tag{4.4}$$

Table 4.4: Permutation group elements of 1247 with their ascending positional indices

index	group element	index	group element
1	1247	13	4127 (p)
2	1274	14	4172
3	1427 (p)	15	4217 (p)
4	1472	16	4271 (p)
5	1724	17	4712
6	1742	18	4721 (p)
7	**2147**	19	7124
8	2174	20	7142
9	2417 (p)	21	7214
10	2471	22	7241
11	2714	23	7412
12	2741 (p)	24	7421

is exactly the number of the frequency of ح's + م's (H's + M's) in these 7 suras. The 7^{th} prime number is 17 and the 17^{th} group element is 4712. If we add these two numbers, we have

$$2147 + 4712 = 6859 = 19 \times 19 \times 19. \tag{4.5}$$

Group elements 15 and 16 are also important. 4217 is the number of verses from 1:1 to 41:1 and 4271 is the number of verses from 1:1 to 42:1 and 4271 belongs to the 114^{th} twin prime pair, i.e., (4271, 4273).

Therefore, these numbers already speak the Quran. The physical Quran is simply a written manifestation of the eternal laws of God.

4.4 Prime-Index Relation: "By the even and the odd", Quran, 89:3

The Quran's 19-based mathematical code manifests itself in different forms. It provides clear evidence that the Quran is an unaltered literary work and as it

is stated, no falsehood can enter it. The aspect that I will be explaining to the reader here is based on a single verse in the Quran which contains only two Arabic words! Translations to other languages may contain more than two, for example, the English translation of this verse would contain six words. The verse is in sura 89 called 'The Dawn'. In verse three (3) of this sura, God takes an oath by "THE EVEN AND THE ODD." At first, this may sound meaningless to the casual reader of the Quran. However, by studying the numbers, we realize this is truly a profound oath. Let me explain how. Note that the concatenation of sura number and verse number is 893 which is a multiple of 19. As a matter of fact, it is $893 = 47 \times 19$. We would like to focus on the properties of the integer 47. The number 47 happens to also be a prime number. The number 47 can be partitioned into $19 + 28$. The number 28 is another interesting number mathematically because it is the second "Perfect" number in the number system. The first perfect number is 6. Remember the number of chapters in the Quran is $114 = 6 \times 19$. What are perfect numbers? A perfect number is a number for which the sum and the multiples of its factors are equal to itself. For example, $6 = 1 + 2 + 3$ and also $6 = 1 \times 2 \times 3$. As I mentioned above, the second perfect number is 28 and the third is 496 and so on. Remember that God created the skies and the land in "6 Days". He sent the Quran in a PERFECT ARABIC TONGUE. The second perfect number 28 happens to be the number of characters in the Arabic alphabet.

Let me now go back to the EVEN and the ODD. Let us look at the number of verses in each chapter and see if it is odd or even? If we do this, we find that there are 60 chapters in the Quran which possess an even number of verses

and 54 which possess an odd number of verses. Of course if you add these two numbers you obtain 114. However, the intricacy of the Quran's mathematical code becomes more overwhelming if we examine these numbers as the indices of Prime numbers. Therefore, the 54^{th} prime number is 251 and the 60^{th} prime number is 281. Now let us add them up.

$$251 + 281 = 532 \tag{4.6}$$

and,

$$532 = 28 \times 19. \tag{4.7}$$

We also note that there are 112 verses in the Quran which are not numbered. These are the opening statements, i.e., Bismallah's which are in the beginning of every chapter except for chapter 9. What happens if we include these verses in the total number of verses in each chapter? We obtain 52 even numbers and 62 odd numbers. The 52^{nd} prime number is 239 and the 62^{nd} prime number is 293. Let us add them up,

$$239 + 293 = 532 \tag{4.8}$$

and,

$$532 = 28 \times 19. \tag{4.9}$$

We have two pairs of prime numbers 251, 281 and 239, 293. Let us add all the digits in these two pairs.

$$2 + 5 + 1 + 2 + 8 + 1 = 19 \tag{4.10}$$

and,

$$2 + 3 + 9 + 2 + 9 + 3 = 28. \tag{4.11}$$

Again, we are back to 19 and 28.

4.4.1 The word اَللّٰه (Allah) or God

Shown in table 3.4 is the Arabic alphabet. There are two ways one can number them. One is sequentially, 1 through 28 and the other way is the universally known gematrical values. Both numbers are shown in table 3.4 next to the Arabic letters.

Now let us calculate the sum of letters in the word اَللّٰه (Allah), both sequentially and gematrically. They are 30 and 66, respectively. As we know 30 is the 19^{th} composite. There are 38 numbers in the Quran, including fractions. In ascending order 30 is the 23^{rd} number in the Quran. Again from table 3.4, if we spell out the word "Alone" or وحده, pronounced "Wahdahu", in both number systems, we get 23. Therefore, this number system in the Quran proclaims God Alone. It is interesting that since the word "alone" in Arabic is made up of the first 10 letters of the alphabet, it yields the same sum in both number systems. As we will see this has far reaching mathematical consequences. Look at chapter 30 and you see that the sum of the frequencies of the usages of the initials الٓمٓ is

$$1254 = 19 \times 66. \tag{4.12}$$

Note the sequential and the gematrical value of the word اَللّٰه pronounced 'Allah'. This chapter has 60 verses. Number 60 is the 42^{nd} composite and 42 is the 23^{rd}

initialed chapter or sura in the Quran. Remember that 30 is the 23^{rd} number in the Quran.

4.5 Guidance is from God Alone

It is repeated throughout the Quran that God is the "One" who guides. This is why Abraham, for example, was unable to guide his own father. Remember also the story of Lot's wife and Noah's wife and his presumed son. In the case of Abraham's father, Abraham went as far as making a mistake in praying for forgiveness on his father's behalf. The Arabic word for guidance is هدي, pronounced "huda" and it is one of the important keywords mentioned by God in the Quran right after the first sura, "The Opener". If you look at the second sura in the Quran, you find that it is the longest sura in the Quran and it is detailed with laws and commandments for the betterment of mankind, here now and forever. It is called "The Heifer", as a symbol of submission to God. It is the first initialed sura in the Quran and its second verse informs us that this scripture is infallible and it is a beacon هدي (huda) for the righteous. The word هدي in Arabic has three letters, ه, د and ي. The gematrical or the sequential values of these letters are 5, 4 and 10 and if you add them up you get 19. This is a mathematical confirmation that only God and God alone guides. It is noteworthy that since Arabic is written from right to left, if we write this word and concatenate the values of the letters we get 1045, which is equal to 55×19. Furthermore, the 5519^{th} composite is 6346 which is the total number of verses in the Quran. We note that sura 55 is called ٱلرَّحمٰن meaning "The All Gracious", and its second verse informs us that He teaches the Quran. Verse 55:19 is a

Table 4.5: Numbers in the Quran in ascending order

Index	Quranic numbers	Index	Quranic numbers
1	$\frac{1}{10}$	20	12
2	$\frac{1}{8}$	21	19
3	$\frac{1}{6}$	22	20
4	$\frac{1}{5}$	23	30
5	$\frac{1}{4}$	24	40
6	$\frac{1}{3}$	25	50
7	$\frac{1}{2}$	26	60
8	$\frac{2}{3}$	27	70
9	1	28	80
10	2	29	99
11	3	30	100
12	4	31	300
13	5	32	500
14	6	33	1,000
15	7	34	2,000
16	8	35	5,000
17	9	36	10,000
18	10	37	50,000
19	11	38	100,000

prime-numbered verse and it is the 1273^{rd} such verse from the beginning of the Quran which happens to be the frequency of the word God up to 9:127.

4.6 Number 100

Number 100 has a very special place in the Quran. For example, it tells us that 19, the Quran mathematical group generator, had to be mentioned in 74:30. If we look at all the numbers in the Quran we note that number 100 is the 30^{th} number. We know that 30 is the 19^{th} composite. Number 100 is also the 74^{th} composite and therefore we are back to 74:30 which tells us "OVER IT IS 19". Table 4.5 shows all numbers mentioned in the Quran.

THEOREM:

Assume we have a pair of two-digit numbers, ab and cd such that a, b, c and d

are nonzero. If ab + cd = 100, then a + b + c + d = 19

PROOF:

We can write two-digit numbers in polynomial form ax + b and cx + d; where in decimal number system $x = 10$. If $ax + b + cx + d = 100$, then we must have $b + d = 10$. This implies that $ax + cx = 90$. When we add the digits together, we actually ignore the base 10, and this implies that 90 will change to 9 and therefore, $10 + 9 = 19$. It is noteworthy that there are 72 such two-digit pairs and 72 is the 8^{th} TPC and 8 is the index of prime number 19. Chapter 72 has 28 verses and 72:28 is one of the numbers conforming to the above theorem, meaning that $72 + 28 = 100$ and $7 + 2 + 2 + 8 = 19$. Please read 72:28. In light of the above theorem, it is essential to analyze chapter 100 in the Quran. We note that it has 11 verses. If we concatenate 100 and 11 we get 10011 which is composed of 0s and 1s only. Therefore, we can think of it as a binary number. The number 10011 in the binary number system is 19 in decimal system. Note here the intricate mathematics, 11 is the 19^{th} number in the Quran, and we just saw the relation between 100 and 19. There is only one other chapter in the Quran such that when you concatenate the sura number and the number of verses you get a number which is composed of 0s and 1s and it is chapter 101 which also has 11 verses. The number 10111 in binary number system is 23 in decimal system. We know that the 23^{rd} number in the Quran is 30 and the 30^{th} number in the Quran is 100 and 30 is the 19^{th} composite and many more relations between 23 and 30 which were discussed previously.

4.7 Prime Numbers and the Quranic Initials

The counts of single letters in the Quranic initials are very interesting from the point of view of primes and signify important Quranic numbers. If we look at the counts of letters in the Quranic initials, we note that there are 14 prime numbers (excluding repetitions). This corresponds to the 14 sets of Quranic initials. These numbers are 19, 29, 31, 53, 97, 137, 173, 251, 257, 317, 347, 1249, 1319, 2521 [3]. Note that the smallest number is 19 and the largest number is 2521. Remember that chapter 2 has 19×521 usage of the Arabic letters ا (A), ل (L), and م (M).

One notes that three digits namely 0, 6 and 8 are excluded from the above list of numbers. Now if we add the above prime numbers, the sum is 6800, exclusively made up of the missing digits. Keep in mind that 68×100 tells us that the last initialed sura is 68 and 100 being the 74^{th} composite and the 30^{th} number in the Quran proclaims 74:30 which tells us about 19, by stating "over it is 19".

4.8 More "Ultimate Mathematics"

The fact that sura 2, the first initialed sura in the Quran has 9899 As + Ls + Ms or 19×521, is truly a numbering system beyond the capability of humans and jinns combined. What we are about to see is that the coefficient of 19 which is 521 actually predicts the last initialed sura which is 68. We note that the 521^{st} TPC is 33768. This is truly an amazing number, because it is the concatenation of the prime number 337 and 68 where 68 is the index of prime number 337. Furthermore, in decimal to octal base conversion, we have; $(337)_{10} = (521)_8$.

4.9 Sura 44, The Smoke

Chapter 44 in the Quran is called "The Smoke". Sura 44 is one of the حم (H.M.)-initialed suras. If we look at the counts of ح (Ha) and م (Meem), we find that there are 16 ح's, 150 م's and a total of 166 ح's + م's. All these numbers including the sura number are composites. The index of 44 is 29, the index of 16 is 9, the index of 150 is 114, the index of 166 is 127. These numbers in this sura are telling us mathematically that there is a book (Quran) with 114 chapters and 29 of them are initialed and its 9^{th} chapter has 127 verses.

4.10 Over It is Nineteen

The permutation group properties of Quranic numbers as it is related to specific primes and their indices constitute a major component of the Quran's Ultimate Mathematics. The 3^{rd} and the 16^{th} permutation group elements of 7430 (verse 74:30 tells us "over it is nineteen") are divisible by 19 and that $3 + 16 = 19$. There are six primes in these 24 permutations and their group elements add up to 67 which as we know by now is the 19^{th} prime number.[5]. After a careful look at these permutation group elements, we find that this group tells us a lot more! Let me make a table and try to explain it to you.

The 8^{th} prime number is 19 and let us add the 8^{th} group element and the 19^{th} group element. We have;

$$3074 + 7034 = 10108 = (19 \times 19 \times 28). \tag{4.13}$$

Where 28 is the second perfect number and the number of letters in the Arabic alphabet. In Table 4.6, six of the 24 numbers are prime numbers. If we add up

Table 4.6: Permutation group elements of 7430 with their ascending positional indices

index	group element	index	group element
1	347	13	4037
2	374	14	4073
3	437	15	4307
4	473	16	4370
5	734	17	4703
6	743	18	4730
7	3047	19	7034
8	3074	20	7043
9	3407	21	7304
10	3470	22	7340
11	3704	23	7403
12	3740	24	7430

the indices of the 6 primes you get;

$$69 + 132 + 479 + 561 + 635 + 906 = 2782. \tag{4.14}$$

Verse 27:82 states:

And when the promise comes to pass, We bring out a creature out of the ground that speaks to them, saying that indeed the people are not certain about Our signs.

Furthermore, if we count inclusively from 2782 to 9127, we get 6346, which is the number of verses in the Quran.

4.11 Ultimate Mathematics, Continued

With the Quranic importance of the "octal" or base eight number system, we have noted a few awesome mathematical relations between key Quranic numbers independent of a numerical base system. Let us focus on two numbers 114 (6×19) and 152 (8×19). Let us assume that someone comments that it is not

transparent, by looking at these numbers if they are written in base ten, eight or six. This is a valid comment and the burden of the proof is on us to show that no matter what base, these numbers are revealing key information about the Quran. Let us assume the following assumptions. We make these assumptions since the coefficients of 19 are 6 and 8:

- Assume both 114 and 152 are written in base 6, then in base 10 we have 46 and 68.

$$46 + 68 = 114 \tag{4.15}$$

- Assume that 114 is in base 6 and 152 is in base 8, then in base 10 we have 46 and 106, respectively. Note that:

$$46 + 106 = 152 \tag{4.16}$$

- Let us assume that both are in base 8, then in base 10 we have 76 and 106, respectively. Note that,

$$76 + 106 = 182 \tag{4.17}$$

182 is a very important number in Quran's Ultimate Mathematics. It is the index of prime number 1091. Number 1091 is the gematrical value of the word Ramadan, the month the Quran was revealed. Furthermore, 1091 is the number of the word اَللّٰه (Allah) or God in the initialed suras. If we add 1091 to its index 182 we get 1273 (19×67). We know that 19 is the index of prime number 67. We also know that 67 is the number of times the word صلوة (pronounced "salaat" meaning contact prayer) has been mentioned in the Quran. A very important

role of 1273 is to keep the number of the word اَللّٰه (Allah) or God in check up to the end of chapter 9, or 9:127.

4.12 Chapters 9 and 27, Missing Bismallah and the Extra Bismallah

Base eight showed us that, although it is not transparent from a number which base it is written in, the key Quranic numbers such as 19, 76, 114, 152, 337, 352, 431, 521, etc... transform in a way to preserve Quranic facts. Let me repeat what we already know about chapters 9 and 27, with regards to the missing Opening Statement (Bismallah) and the extra Bismallah. We know that from 9 to 27 there are 19 chapters, inclusively. We also know that;

$$9 + 10 + 11 + 12 + 13 + 14 + 15 + 16 + 17 + 18 + 19 + 20 + 21 \tag{4.18}$$

$$+22 + 23 + 24 + 25 + 26 + 27 = 342 \tag{4.19}$$

And $342 = 18 \times 19$. Furthermore, 342 is exactly the number of Arabic words between the first and the second Bismallah in sura 27[3]. We also know that number 9 is explicitly mentioned twice in chapter 27, namely 27:12 and 27:48. The proximity of these two verses with respect to the extra Bismallah in 27:30 is designed such that from 12 to 30 there are 19 verses inclusively and also between 30 and 48. Moreover, $27 + 12 + 27 + 30 + 27 + 48 = 171 = 9 \times 19$ [4]. Again we see that the coefficient of 19 is 9. All these are pointing to the direction of some mathematical relation between 9 and 342. Now, let us assume that 342 was actually in base 9 instead of base 10. If we were to transform 342 from base 9 to base 10 we get 281, or;

$$(342)_9 = (281)_{10}. \tag{4.20}$$

The reader may verify that 281 belongs to the 19^{th} twin prime pair and it is the index of composite 352 which is the gematrical value of the word قرآن (Quran) and if written in octal it is 431, or

$$(281)_{10} = (431)_8. \tag{4.21}$$

Note 431 is the gematrical value of the word فرقَان (Furqan) meaning statute book. Also, 352 written in base 9 is 431; i.e.,

$$(352)_{10} = (431)_9. \tag{4.22}$$

Note Ramadan is the 9^{th} month of the Hijri lunar calendar and Quran was revealed in Ramadan.

4.13 Counts of Letters, Manifestation of Ultimate Mathematics

Let us look at the number of initials الٓمٓ (a.L.M.) in suras 29 and 31. These two suras are twin primes and their indices are 10 and 11, respectively. What we are about to discover together is that every digit assigned to a number in the Quran is designed according to the Ultimate Mathematics described in chapter two, and if the Quran mentions 2 for example, it means 2 and not 1 + 1. Table 4.7 shows the counts of ا, ل, and م (A's, L's and M's) in suras 29 and 31 and the counts of ا, ل, and ر (A, L and R) in chapters 10 and 11 are shown in table 4.8.

Note that both 10 and 11 contain the same number of initials. There are several awesome mathematical relations in table 4.8 as was mentioned previously. Now let us look deeper into tables 4.7 and 4.8, and sum up the

Sura Number	Frequency of ا	Frequency of ل	Frequency of م	Sum
29	774	554	344	$1672 = 19 \times 88$
31	347	297	173	$817 = 19 \times 43$

Table 4.7: Frequencies of the usage of letters ا, ل, and م in suras 29 and 31

Sura Number	Frequency of ا	Frequency of ل	Frequency of ر	Sum
10	1319	913	257	$2489 = 19 \times 131$
11	1370	794	325	$2489 = 19 \times 131$

Table 4.8: Frequencies of the usage of letters ا, ل, and ر in suras 10 and 11

digits of the initials. We have:

$$(sura29)7 + 7 + 4 + 5 + 5 + 4 + 3 + 4 + 4 = 43 \tag{4.23}$$

$$(sura31)3 + 4 + 7 + 2 + 9 + 7 + 1 + 7 + 3 = 43 \tag{4.24}$$

$$(sura10)1 + 3 + 1 + 9 + 9 + 1 + 3 + 2 + 5 + 7 = 41 \tag{4.25}$$

$$(sura11)1 + 3 + 7 + 0 + 7 + 9 + 4 + 3 + 2 + 5 = 41 \tag{4.26}$$

Just the fact that we started with the twin primes 29 and 31 and ended up with 41 and 43 the next twin primes, is amazing; but there is a lot more. Number 43 is the key. This number is related to 2489. Sura 43 is the 24^{th} initialed sura and sura 43 has 89 verses and note that the 24^{th} prime number is 89. Furthermore, 41 is the 13^{th} prime number and sura 13 has 43 verses. Also note that the total frequency of the Arabic letter م in the حم initialed chapters, from 43 to 46, is $899 = 29 \times 31$ [4] which goes back to suras 29 and 31 which we started with. The number of ح is 127 which is the 31^{st} prime number. We already know that $127 + 899 = 1026 = 19 \times 54$ where 54 is the sum of all digits making up the

frequencies of ح and م from sura 43 to 46 [5].

Now, let us concatenate 899 and 127, we get 899127. Remember we started with 43, therefore, if we further concatenate 43 and 899127, we get: 43899127. One would recognize this as the reaffirmation that sura or chapter 43 has 89 verses and sura or chapter 9 has 127 verses. Note here that a concatenation of 899 and 127 in the above manner is only possible for a language which is written from right to left such as Arabic.

4.14 Awesome Mathematical Relation

Chapter 36 of the Quran has a special place in the Quran. It is an initialed sura and it is the 19^{th} initialed sura in the Quran. The count of the frequencies of the letters ي (ya) plus س (seen) in this chapter is $285 = 19 \times 15$. But why 15 as the coefficient of 19? This all goes back to the Ultimate Mathematics of the Quran. Let me recap what we already know. Number 19 is the 8^{th} prime number and 15 is the 8^{th} composite. We also know that 36 is the sum of all integers up to and including 8 or the arithmetic series of numbers up to 8. This means:

$$1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 = 36. \tag{4.27}$$

If we concatenate 19 and its index 8 we get 198. The 152^{nd} composite happens to be 198 and $152 = 19 \times 8$. If we concatenate 15 and its index 8 we get 158 which is the 120^{th} composite and $120 = 15 \times 8$ [5]. The uniqueness of this mathematics is mind boggling. Let us look at the relation between chapter 8 and chapter 36 in the Quran. A concatenation of 8 and 36 yields $836 = 19 \times 44$. We note that the 44^{th} revelation is sura 19. The number of verses in chapter 8

is 75 and the number of verses in chapter 36 is 83.

$$83 + 75 = 158. \tag{4.28}$$

Number 158 is the 120^{th} composite and $120 = 15 \times 8$. The same is true for the case of the 19^{th} un-initialed sura which is 39. Sura 39 also has 75 verses. The 15^{th} initialed sura in the Quran is 29 and it has 69 verses. The 19^{th} initialed sura 36 has 83 verses. We therefore have;

$$69 + 83 = 152 \tag{4.29}$$

and

$$152 = 19 \times 8 \tag{4.30}$$

and the 152^{nd} composite is 198.

4.15 Counts of Letters are Connected to the Frequency of the Word God

We looked at the number of initials الٓمٓ (A.L.M.) in suras 29 and 31. What we discovered is that every digit assigned to a number in the Quran is a manifestation of the Ultimate mathematics described in chapter two, and if the Quran mentions 2 for example, it means 2 and not 1 + 1. Above, I described the awesome connection between the counts of ا, ل, and م (A, L, and M) in suras 29 and 31 and the counts of ا, ل, and م (A, L, and M) in chapters l0 and 11. We noted that both 10 and 11 contain the same number of initials. When we looked deeper into these numbers, and summed up the digits of the initials, we

found:

$$(sura29)7+7+4+5+5+4+3+4+4=43 \tag{4.31}$$

$$(sura31)3+4+7+2+9+7+1+7+3=43 \tag{4.32}$$

$$(sura10)1+3+1+9+9+1+3+2+5+7=41 \tag{4.33}$$

$$(sura11)1+3+7+0+7+9+4+3+2+5=41. \tag{4.34}$$

Note here that 41 is a prime number and its index is 13 and chapter 13 has 43 verses. If we look at the frequency of the word God in the Quran we reach the 2489^{th} word God in chapter 58. We note that chapter 58 is the only sura in the Quran in which the word God is mentioned in every verse at least once. We know that the number of ا, ل, and م (A, L, and M) in suras l0 and 11 are $2489 = 19 \times 131$. The 2489^{th} frequency of the word God is the last word God mentioned in the last verse, 58:22. But how is this connected to chapters 10 and 11? Note both 58 and 22 are composites. They happen to be the 41^{st} and 13^{th} composites respectively, and the 13^{th} prime is 41 and sura 13 has 43 verses, thus we are back to suras 10, 11, 29 and 31.

4.16 Number of Verses and Sura Numbers

There are mathematical relations amongst four suras in the Quran that absolutely overwhelms the mind. These four suras are 8, 19, 36 and 39. The first property of these suras is that they are all somehow related to 19. First, 8 is the index of prime number 19. Sura 36 is the 19^{th} initialed sura in the Quran. Sura 39 is the 19^{th} un-initialed sura in the Quran. In table 4.9, we show these suras with their corresponding number of verses.

Now let us do the following exercise on the sura number and the number of

Sura number	Number of verses
8	75
19	98
36	83
39	75

Table 4.9: Sura numbers with their corresponding number of verses

verses for each sura. Sura number plus number of verses and number of verses minus sura number.

$$8 + 75 = 83 \tag{4.35}$$

$$75 - 8 = 67 \tag{4.36}$$

Note that 67 is the 19^{th} prime and 83 is the 23^{rd} prime. Furthermore, 19 written in octal or base 8 is 23 or $(19)_{10} = (23)_8$. Again, the same exercise as above, sura number plus number of verses and number of verses minus sura number,

$$19 + 98 = 117 \tag{4.37}$$

$$98 - 19 = 79. \tag{4.38}$$

Note that 79 written in octal is 117. In sura 19, the word God has been mentioned 8 times. If we concatenate 79, 98 and 117 with 8 we get; $798 = 19 \times 42$, $988 = 19 \times 52$, and $1178 = 19 \times 62$. Note that 798 is the total frequency of the usage of the initials كهيعص composed of five Arabic letters and pronounced Kaaf, Ha, Ya, Ain, Saad in sura 19. Once more, sura number plus number of verses and number of verses minus sura number,

$$36 + 83 = 119 \tag{4.39}$$

$$83 - 36 = 47. \tag{4.40}$$

We already know that sura 36 called يس (YaSeen) has 285 usage of the letter

ي plus the letter س and $285 = 19 \times 15$ and that 19 is the 8^{th} prime number and l5 is the 8^{th} composite number. We also know that the arithmetic series of sequential integers until 8 is 36, in other words,

$$36 = 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8. \tag{4.41}$$

The equation for the arithmetic series for any number n is;

$$S = \frac{n(n+1)}{2}. \tag{4.42}$$

It happens that 47 is 39 written in base 8 and 119 is 167 written in base 8. Furthermore, the 39^{th} prime number is 167. Again sura number plus number of verses and number of verses minus sura number we get;

$$39 + 75 = 114 \tag{4.43}$$

$$75 - 39 = 36 \tag{4.44}$$

Now 39 goes back to the Quran containing 114 suras and the 19^{th} initialed sura, 36.

4.17 The Extra "Opening Statement" in Sura 27

If we count all the verses that contain the word God from 27:30 where the second Bismallah is mentioned in sura 27, there are 19 such verses to the end of this sura. These verses are 30, 36, 43, 44, 45, 46, 47, 49, 59, 60, 61, 62, 63, 64, 65, 79, 87, 88, and 93. If we add these verse numbers we get;

$$1121 = 19 \times 59. \tag{4.45}$$

Note that l9 is the 8^{th} prime and 59 is the $l7^{th}$ prime number. Verse 8:l7 in the Quran emphasizes that everything is controlled by God.[4]

4.18 God is "The One": Awesome Mathematics

The Quran asserts (74:31) that the implementation of the most sophisticated mathematical system in the Quran is to establish reassurance in the mind of those who sincerely seek the truth. The word وَحد pronounced "wahid" and meaning "one" referring to the "Oneness" of God has been mentioned in the Quran 19 times. One can verify this in any of the concordances of the Quran. However, I should emphasize that the word "one" is not one of God's most beautiful names, because of its generality. God has reserved for Himself the word "The One" or in Arabic اَلوَحد pronounced "Al-wahid" as one of His attributes. We know that every letter in the Quran is there for a reason and it has been supported with the exact science of mathematics. Out of the 19 times that the word one refers to the Oneness of God, 6 times are "The One" referring directly as one of God's most beautiful names. We therefore have a case of 6 out of 19 times and I want to remind the reader to focus on 619 which is the 114^{th} prime number and $114 = 6 \times 19$. The word, "The One" is mentioned in 12:39, 13:16, 14:48, 38:65, 39:4, and 40:16. If we add all these sura numbers and verse numbers, we get:

$$12 + 39 + 13 + 16 + 14 + 48 + 38 + 65 + 39 + 4 + 40 + 16 = 344. \quad (4.46)$$

The number 344, since it is an even number, is easy to recognize as a composite and it happens to be the 275^{th} composite. If we add 344 to its index 275, we get;

$$275 + 344 = 619, \quad (4.47)$$

Index	Initialed sura
1	2
2	3
3	7
4	10
5	11
6	12
7	13
8	14
9	15
10	19
11	20
12	26
13	27

Table 4.10: Initialed suras up to and including sura 27

which is the 114^{th} prime number.

4.19 Ultimate Mathematics: Another Awesome Mathematical Relation

The mathematical structure we are about to learn together is in conjunction with sura 19, the only sura in the Quran with five (5) Arabic letters in its set of initials كهيعص, pronounced Kaaf, Ha, Ya, Ain, Saad. Table 4.10 shows the initialed suras up to and including sura 27.

If you count all the numbered verses up to and including sura 19 we get 2346 which is the 1998^{th} composite and we know that chapter 19 has 98 verses [5]. Now further proof is how 2346 breaks down into initialed and un-initialed verses from the beginning of the Quran. We refer to all of the verses in the initialed suras as initialed verses and all of the verses in the un-initialed suras as un-initialed verses. Therefore, the sum of the verses in the un-initialed suras

up to sura 19 is;

$$7 + 176 + 120 + 165 + 75 + 127 + 128 + 111 + 110 = 1019. \tag{4.48}$$

From table 4.10, we note that 10^{th} initialed sura is number 19. If we do the same exercise on the initialed verses we get;

$$286 + 200 + 206 + 109 + 123 + 111 + 43 + 52 + 99 + 98 = 1327. \tag{4.49}$$

Again, from Table 4.10, note that the 13^{th} initialed sura is number 27. These numbers are fixing the position of suras 19 and 27 (note, sura 27 is the only sura with two opening statements or Bismallah's) and relating them to the number of initialed and un-initialed verses up to sura 19 which is the base of the Quranic mathematical code. Note that these numbers also generate 127 verses for chapter or sura 9.

4.20 Ultimate Mathematics: More Structure

Sura 42 is the only sura in the Quran with two sets of initials. The second verse contains 3 initials عسق, pronounced Ayn-Seen-Qaaf, and there are 209 frequencies of ع + س + ق in this sura which is 19×11. Counting all the verses in this sura where all three letters are utilized, we found that there are 19 such verses. Readers who are familiar with the Arabic language can easily verify this property of the Quran for themselves. The first 8 verse numbers where all three initials are mentioned add up to 98 and the total number of such verses is 19. Remember that sura 19 has 98 verses and the 8^{th} prime is number 19 and that there are 8 mentions of the word ٱللّٰه (Allah) or God in sura 19. Furthermore, sura 98 has 8 verses. Also note that the letter ق (Qaaf), sequentially, is the 19^{th} Arabic letter[4].

4.21 God's Most Beautiful Names are Mathematically Coded

God's most beautiful names are mathematically coded in the Quran, sequentially beyond our capabilities. This mathematics insures that the combinations of God's most beautiful names in certain verses in the Quran are mathematically controlled. For example, we see throughout the Quran in some verses God refers to Himself as ٱلعزيز ٱلحكيم "The Almighty, The All Wise". This mathematics tells us that in these verses, we could not have, for instance, "The Almighty, The All Merciful", because this combination belongs to other verses. Let us look at some examples. The 19^{th} word "All Merciful" is mentioned in 4:23, which refers to the 513^{th} frequency of the word God. Note that $513 = 19 \times 27$. The 83^{rd} frequency of the word "All Merciful" occurs in 30:5. This is the only time that this word is mentioned in chapter 30. We already know the relation between 83 and 30, note 83 is the 23^{rd} prime number and the 23^{rd} number in the Quran is 30. Furthermore the 83^{rd} composite is 114 (the number of chapters in the Quran). Note that 83 is the 19^{th} relative prime of 30 which is the 19^{th} composite and $83 + 30 = 113$ which is the 30^{th} prime number.

4.22 Ultimate Mathematics

Note the following awesome mathematical relations in the Quran are based on the Ultimate Mathematics, which we have been discussing, exclusively, here in this book. We count the number of verses between 9 and 13, inclusively, and make table 4.11. Note that the missing opening statement, i.e., Bismallah of

Table 4.11: Mathematical Properties of sura 9, 10 , 11, 12, 13

Sura Number	Number of Verses	Index of the sura number	Sum of Digits in the number of verses	Sum of Digits of number of verses
9	127	31	9	10
10	109	29	1	10
11	123	92	2	6
12	111	81	3	3
13	43	14	4	7
Sum 55	513	247	19	36

sura 9 has been compensated for in sura 27, verse 30. It happens that the 13^{th} initialed sura is chapter 27 [4].

Columns 1 and 2 are chapters and their corresponding number of verses. Column 3 is the prime/composite indices of column 2. Column 4 is the sum of digits of column 1 and column 5 is the sum of digits of column 2. The 1^{st} three numbers in column 3 correspond to chapters 9, 10 and 11 (11 is the 19^{th} number in the Quran) and; $31 + 29 + 92 = 152 = 8 \times 19$. From 9 to 13 there are 5 suras and $513 = 27 \times 19$. Chapter 27 is the 13^{th} initialed chapter and is initialized with طس, pronounced TaSeen; the gematrical value of ط (Ta) is 9, and its frequency in sura 27 is also 27. It provides another connection to chapter 9. The indices in column 3 are corresponding to prime verses in column 2; $31 + 29 + 14 = 74$ (sura 74 is where the number l9 is mentioned), and their number of verses; $127 + 109 + 43 = 279$, a concatenation of 27 and 9. All indices add up to $247 = 13 \times 19$. 36 is the 19^{th} initialed sura. The count of their initials are 798 and 285 respectively, and $798 - 285 = 513 = 27 \times 19$. Verse 13 of chapter 9 is the 9^{th} verse in which God has been mentioned, and it is also the 13^{th} word God from the beginning of this chapter. The 1^{st} number 9 in chapter 27 is

mentioned in verse 12, and $912 = 48 \times 19$. This pins down the location of the other number 9 in verse 48, which is symmetrically placed around 27:30. The sum of verses from chapter 11 to chapter 19 is 875; (sura 8 has 75 verses) and the 875^{th} word God is mentioned in verse 6:19. If we add up the sura numbers from 9 to 13, we get: $9 + 10 + 11 + 12 + 13 = 55$. We know from table 4.11 that the sum of the digits in these numbers adds up to 19. The number 5519 happens to be the index of composite 6346, which is the total number of verses in the Quran.

Although to God belongs the most beautiful names (Quran 7:180), in the very first verse of the Quran, God has been introduced as الـرَّحمٰـنِ الـرَّحِـيم meaning The All Gracious, The All Merciful. We see the mentions of these attributes of God are positioned throughout the Quran according to the mathematics described in chapter two. We noted before that God's most beautiful names or attributes do also conform with the sophisticated Quranic mathematics. The words, ٱلرَّحمٰن (The All Gracious) and رَحِيم (All Merciful) or ٱلرَّحِيم (The All Merciful) have been mentioned in the Quran 57 and 114 times, respectively. Note that ٱلرَّحِيم (The All Merciful) has been mentioned 34 times and رَحِيم (All Merciful) is mentioned 80 times. The last frequency of the word ٱلرَّحمٰن (The All Gracious) is in sura 78, verse 38 and the last frequency of the word رَحِيم (All Merciful) is in sura 73 verse, 20. If we add these chapter numbers and verse numbers, we get; $78 + 38 + 73 + 20 = 209$ and $209 = 11 \times 19$. Note that 11 here is not by accident. It happens that the 19^{th} number in the Quran is number 11 which has been mentioned only once in the Quran in chapter 12, verse 4, in association with 11 planets and Joseph's dream. It is interesting if

we look at the frequency of the word اَلرَّحِيم, (The All Merciful), we find that the last such mention of this word occurs in sura 59 verse 22. If we add these numbers to 78:38 where the last occurrence of the word "The All Gracious" occurs, we obtain: $78 + 38 + 59 + 22 = 197$. The number 197 is the 45^{th} prime number but more importantly, it is the sum of a very interesting composite and its index. That composite happens to be 114, the number of chapters in the Quran. We then have: $114 + 83 = 197$.

4.23 The All Merciful, اَلرَّحِيم

As I mentioned in the previous section, the frequency of every word in the Quran is mathematically designed. This design, controls every aspect of the Quran and ensures its eternal aspect. There are 34 mentions of the word اَلرَّحِيم (The All Merciful) in the Quran. The 83^{rd} رَحِيم (All Merciful) or اَلرَّحِيم (The All Merciful) counted as though they were the same, occurs in chapter 30. Now, we examine the frequency of اَلرَّحِيم (The All Merciful) up to chapter 30. Remember that 30 is the 19^{th} composite. If we do this, we find that the 24^{th} اَلرَّحِيم (The All Merciful), occurs in chapter 30, verse 5. In this verse, we also find the 1906^{th} frequency of the word God. If we add the numbers for the frequencies of the word God and the word اَلرَّحِيم (The All Merciful) we get: $1906 + 24 = 1930$. Note that the 19^{th} composite is number 30 and اَلرَّحِيم (The All Merciful) has been mentioned only once in sura 30.

4.24 Ultimate Mathematics Generates Sura 9 Having 127 Verses

Ultimate Mathematics declares again as in so many ways that sura 9 has only 127 verses. If we look at the number of verses from sura 9, where the missing opening statement occurs to the end of sura 27, where the missing opening statement is compensated for, we have the following numbers; $127+109+123+111+43+52+99+128+111+110+98+135+112+78+118+64+77+227+93 = 2015$. Note here that 2015 is a composite number and its index is 1709. Remember that 1709 is the total gematrical value of all of the initials in the Quran. Furthermore, the Quran narrates explicitly God's conversation with Moses;

20:15 - The Hour is surely coming, I keep it almost hidden, for each soul must be paid for its work.

4.25 Relation between 19 and 68

The last initialed sura in the Quran is sura 68. If we add up all the sura numbers up to and including sura 68 we get 2346. This is called the "arithmetic progression" from 1 to 68. I show how one can calculate it for any number. Assume the number for which you wish to calculate the arithmetic series is N, then the sum of all the numbers from 1 to N is;

$$S = \frac{N \times (N + l)}{2}. \tag{4.50}$$

For example for N = 68, we have;

$$S = \frac{68 \times (68 + l)}{2} = 2346. \tag{4.51}$$

We also know that the sum of the verses from chapter 1 to 19 is 2346. The

index of composite 2346 is 1998 and sura 19 has 98 verses [5]. Note here again that the number of numbered verses up to and including chapter 19 signifies 68 as a special sum, which we know as being the last initialed sura.

4.26 The Faith

The Quran emphasizes that the only religion acceptable to God is submission. It also tells us that submission is the religion of Abraham, father of all those who submit to God, and God was the one who called us submitters originally. This information is contained in the last verse of sura 22 or 22:78. The number 2278 happens to be the arithmetic progression of 67 which is the 19^{th} prime number.

$$1 + 2 + 3 + 4 + 5.... + 17.... + 67 = 2278. \tag{4.52}$$

Or as we note from the above equation;

$$S = 67 \times \frac{68}{2} = 2278. \tag{4.53}$$

It is interesting that the word اَلدين or "The Faith" is mentioned in this verse in the context that God has not put any burden on us in practicing our faith. This word اَلدين or the faith happens to be the 19^{th} frequency of this word from the beginning of the Quran. Now we have seen that everything in the Quran has been designed and intricately put together. The reader can verify this Quranic fact from any of the published concordances of the Quran.

4.27 The Unfaithful, اَلكَافرون

The Quran tells us in sura 74 verse 30 that, "Over it is 19". It gives us 5 reasons as to why the number 19 was chosen. The fifth or the last reason given

is to expose the people who harbor doubt and "The Unfaithful", for they say; "what did God mean by this allegory?" (Quran, 74:31). There are several ways one can make Arabic nouns plural. For example, the word "The Unfaithful" can be either ٱلكَافرون "Al-Kaferoon" or ٱلكَافرين "Al-Kafereen". We know that every word in the Quran is mathematically composed in order to prove to us that the Quran is the unaltered word of our Creator. It happens that the word "Al-Kaferoon" used here in conjunction with the 19-based mathematical code of the Quran is the 19^{th} such word from the beginning of the Quran. The reader can verify this from any of the published concordances of the Quran.

4.28 Ultimate Mathematics

Every word in the Quran is numbered and according to the Quran, God has counted the number of all things and has assigned a number to everything. The Quran informs us that the Sun and Moon are perfectly calculated. Remember that the Quran's mathematical structure is based on the number 19. If we count the number of the word ٱلقمر, pronounced "Al-Qamar" or "The Moon" from the beginning of the Quran we find the 19^{th} such word in 54:1. In 54:2 God tells us about the 19-based mathematical code of the Quran and how people ignored it and called it old magic. Verse 54:1 is connected to 74:30 where we find the number 19 explicitly mentioned. Note that number 541 is a prime number and it happens to be the 100^{th} prime number. Number 100 happens to be the 74^{th} composite (non-prime) number and it is the 30^{th} number mentioned in the Quran. Therefore, God mathematically guides us to the 74:30 and the number 19. Note that 30 is the 19^{th} composite.

In 74:31 the Quran tells us why the number 19 was assigned by God. The last reason is given to expose the doubters and the unfaithful. Again the word اَلكَفرون pronounced "Al Kaferoon" meaning "the unfaithful" mentioned in this verse is the 19^{th} such word from the beginning of the Quran. In 74:32 God takes an oath by "The Moon". If you read sura 54, it keeps repeating that God has made the Quran easy to learn, does any one wish to learn? The 19^{th} frequency of the word اَلشمس, pronounced "AShams" meaning "The Sun" coincides with the 11^{th} frequency of the word اَلقمر or "The Moon" in 29:61. Remember that 11 is the 19^{th} number mentioned in the Quran. The number 11 mentioned in sura 12 verse 4, is in conjunction with Joseph's dream and the eleven planets.

When we look at all the verses where the words اَلشمس و اَلقمر, meaning "the Sun and the Moon", are mentioned together we find 18 such verses. These verses are tabulated in table 4.12.

Note that although there are only 18 verses, there are 19 frequencies of اَلقمر و اَلشمس. Note from the above paragraph that the 19^{th} frequency of the Sun and the 11^{th} frequency of the Moon are in 29:61. From table 4.12, we see that the 10^{th} frequency of the Sun and the Moon mentioned together, is in 29:61. Note that the 10^{th} prime is 29 and 61 is the 18^{th} prime, hence the 18 verses in table 4.12. Note that in verse 6:96, where the first "the Sun and the Moon" is mentioned, the Quran tells us that these heavenly bodies are calculation devices and the last mention in 75:9 is when the cosmos expires and the Sun and the Moon expire.

Table 4.12: Frequency of "the Sun" and "the Moon"

Frequency	Sura:Verse
1	6:96
2	7:54
3	10:5
4	12:4
5	13:2
6	14:33
7	16:12
8	21:33
9	22:18
10	29:61
11	31:29
12	35:13
13	36:40
14	39:5
15	41:37
16	41:37
17	55:5
18	71:16
19	75:9

4.29 54:1 Ultimate Mathematics, Continued

We note the following properties of 2961 and its relation to key Quranic numbers such as 9127.

- Number 1911^{th} "Positionally Partitionable" number is 1931 and 29:61 is the 1931^{st} initialed verse.
- In the 9 verses where "the sun" is mentioned by itself (up to 29:61), the sura numbers add up to 151 and the verse numbers add up to 806. Note that $806 = 13 \times 62$. Furthermore, the 1362^{nd} numbered verse is 9:127 and 9127 is the 1131^{st} prime number, finally, the 1131^{st} initialed verse is 15:1. Therefore, we are back to 151, which is the sum of the sura numbers.
- "The sun" and "the moon" are mentioned together in 10 verses (up to and including 29:61). The 10^{th} initialed sura is sura 19, which has 798 initials, and the 798^{th} Positionally Partitionable number is 806. Note the sum of the verse numbers from the first item.
- When we add up all the sura and verse numbers where "the sun" and "the moon" have been mentioned up to 29:61, we get 1508, which is the 1490^{th} Positionally Partitionable number and the 1490^{th} numbered verse is 11:19. [5]

4.30 A Criterion

In verse 39:45 of the Quran, the Quran has provided a litmus test in order to expose people who do not believe in the hereafter. Verse 39:45 tells us that the hearts of this group shrink with aversion when God alone is mentioned, but

when others are mentioned besides Him, they rejoice. Every new mathematical fact in the Quran carries with it great responsibility and forces us to pay more attention to its content. If we count all the verses in sura 39 where the word God has been mentioned only once, we find that verse 39:45 is the 19^{th} such verse. We can verify quickly that sura 39 is the 19^{th} un-initialed sura and the 45^{th} un-initialed sura is chapter 74 and that 74 is the chapter where the number 19 has been mentioned [4].

4.31 Ultimate Mathematics, Continued

The count of verses where the word God has been mentioned only once, plays an important role in the second sura. The 19^{th} such verse is number 67 and 67 is the 19^{th} prime. Note that 2 is the first prime and 2:67 is a concatenation of the first prime and the 19^{th} prime. The 267^{th} prime happens to be 1709 which coincides with the gematrical values of the Quranic initials. The 23^{rd} such verse is verse 74. Remember that the 74^{th} sura revealed is sura 23. The 23^{rd} number in the Quran is number 30 and 74:30 is where the number 19 is mentioned.

- The 267^{th} prime is 1709, their sum is 1976, and the 1976^{th} "Positionally Partitionable" number is 1998. The 1998^{th} composite is 2346, and 19:98 is the 2346^{th} numbered verse, 2346 is the 2321^{st} Positionally Partitionable number, 2321 is the 1976^{th} composite, 1976 is the 1677^{th} composite, and 16:77 is the 1976^{th} numbered verse.

- 2:67 is the 74^{th} numbered verse, and $267 + 74 = 341$, 2:67 is the 67^{th} numbered verse in sura 2, and $267 + 67 = 334$, and 3:41 is the 334^{th} numbered verse, and $19 \times 334 = 6346$, which is the total number of verses

in the Quran.

- The sura numbers and the verse numbers of these 19 verses add up to 638, 6:38 is the 341^{st} un-initialed numbered verse, and God says that "We did not leave anything out of this book." Note that $341 = 11 \times 31$ and the 1131^{st} prime is 9127.

- When we add the sura and the verse numbers where God is mentioned twice in the verse, they add up to 821, which is the index of composite 988 (sura 98 called Al-Bayeenah or "the proof" has 8 verses), $988+821 = 1809$ and the 1809^{th} numbered verse is 15:9, which says that God will "protect" the Quran.

- 821 is the 142^{nd} prime, $821 - 142 = 679$, and $679 \times 19 = 12901$. When we add up the numbers of all 114 suras in the Quran and the number of verses in each of these suras, we get 12901, which is 679×19.[5]

4.32 Ultimate Mathematics: Awesome Mathematical Relation

Quran with its amazing expanse of mathematical code glorifies and magnifies its Author, The Almighty, who speaks to us through a mathematics beyond our capability, yet simple to understand. Again, we must remember, according to 72:28, God has counted the number of all things or has assigned a number to everything. The mathematical proofs we are about to learn are in conjunction with sura 42, the only sura in the Quran with two sets of initials. Shown in table 4.13 are the sums of ح + م (H's + M's) in the seven حم (H.M.)-initialed suras.

Table 4.13: Frequency of the initials ح (Ha) and م (Meem) in suras 40 through 46

Sura Number	Sum of Frequencies of حم (HaMeem)
40	444
41	324
42	353
43	368
44	166
45	231
46	261
Total	$2147 = 19 \times 113$

Note that chapter 42 is the only chapter where the sum of حم (H's + M's = 353) is a prime number. This prime is the 71^{st} prime number. Therefore, we get the number 4271, which is simply a permutation of 2147. We already knew these mathematical relations, however, what we did not know is the first verse in sura 42 which is حم (H.M.) is the 4271^{st} numbered verse from the beginning of the Quran. Note that 4271 is a twin prime and it is the 114^{th} twin prime, which is the number of chapters in the Quran. Furthermore, $42 + 71 = 113$ which is the coefficient of 19 for the sum total of the seven حم (H.M.)-initialed suras that is $2147 = 19 \times 113$. Because 4271 is a permutation of 2147, let us look at the permutation group properties of the four digits 1, 2, 4 and 7. We display these numbers in table 4.14.

Note there are seven prime numbers in table 4.14, referring to the seven حم-initialed suras. There are two numbers in the table 4.14 that are divisible by 19. These are 2147 and 4712; group elements number 7 and 17. Note that 17 is the 7^{th} prime. If we add these group elements, we get;

$$2147 + 4712 = 6859 = 19 \times 19 \times 19. \tag{4.54}$$

Table 4.14: Permutation group elements of 1247 with their ascending positional indices

index	group element	index	group element
1	1247	13	4127 (p)
2	1274	14	4172
3	1427 (p)	15	4217 (p)
4	1472	16	4271 (p)
5	1724	17	4712
6	1742	18	4721 (p)
7	2147	19	7124
8	2174	20	7142
9	2417 (p)	21	7214
10	2471	22	7241
11	2714	23	7412
12	2741 (p)	24	7421

4.33 Ultimate Mathematics: Another Awesome Mathematical Relation

This mathematics is beyond our capability and yet simple to understand. Again, the mathematical structure we are about to learn together are in conjunction with sura 19, the only sura in the Quran with five (5) letters in its set of initials كهيعص (K.H.Y.A.S). Note again that the base of these Ultimate Mathematics is the number 19 as it is described in the Quran. In table 4.15, the initialed suras are shown up to and including sura 19 and their corresponding number of numbered verses are also listed.

If we add all the numbered verses up to and including verse 19:1 we get 1230, which is the 42^{nd} Twin Prime Companion (TPC). Remember, TPCs are the composites sandwiched between a pair of twin primes. Note, the total number of all initial letters in chapter 19, i.e. ك's + ه's + ي's + ع's + ص's (K's + H's + Y's + A's + S's) utilized in sura 19 is $798 = 19 \times 42$. Note here, a

Table 4.15: Sura numbers and their number of verses in initialed suras from 2 to 19

Initialed Sura Number	Number of Numbered Verses
2	286
3	200
7	206
10	109
11	123
12	111
13	43
14	52
15	99
19	98 كهيعص (K.H.Y.A.S)

purely mathematical relation such as the index of a specific TPC, is generating this important property of the Quran.

4.34 More Ultimate Mathematics

Sura 42 is the only sura in the Quran with two sets of initials. In previous sections, we mentioned that the 4271^{st} numbered verse from the beginning of the Quran, is the حم (H.M.) verse of chapter 42 which is the very first verse of this sura. We also noted that the total frequency of all H's and M's utilized in sura 42 is 353 which is the 71^{st} prime and hence, 4271. This is a formidable proof by itself, however proofs are multi-faceted. We know that 42 is related to 19, since there are $798 = 42 \times 19$ total frequency of the initial letters كهيعص (K.H.Y.A.S) in sura 19. If we look at all the "positionally partitionable numbers", we find that 4271 is the 4219^{th} positionally partitionable number. This takes us back to 42 and 19.

4.35 More Ultimate Mathematics

Chapter 40 is the first of the seven حم (H.M.)-initialed suras, and the only sura in the Quran where the phrase اللّهُ وحدهُ, pronounced "Allahu Wahdahu", meaning "God alone" has been mentioned twice in 40:12 and 40:84. In 40:12, the verse ends with the phrase that the "Judgment is with God, The All High, The Supreme". In Arabic it is فَلحكم لّله العلي الكبير, pronounced "Falhukmu Lellahe Al-Alee Al-Kabeer". We see that this important verse is mathematically positioned to control the total number of ح (H's) and م (M's) in all seven حم-initialed chapters which we know is $2147 = 19 \times 113$. If we count all the numbered verses from the beginning of the Quran, we find that 40:12 is the 4143^{rd} numbered verse. We know that there are 8 mentions of the word اَلكبير (Al-Kabeer) in the entire Quran. It turns out that 4143 is 2147 written in base 8, or;

$$(2147)_{10} = (4143)_8. \tag{4.55}$$

These are controlling mechanisms put in place by the Ultimate Mathematics.

4.36 Awesomeness of the Mathematics

Sura 13 has a very unique position in the Quran. We know that the 13^{th} integer in the Quran is 19 and we study all the mathematical proofs associated with it controlling the number of verses in sura 9. This sura is related to chapter 22 and actually controlling the number of verses in that chapter. Remember that the sum of frequencies of the initials اَلمر (pronounced "alif, "laam", "meem", "raa") in chapter 13 is $1482 = 19 \times 78$, and that the 13^{th} composite is 22 and sura 22 has 78 verses. If we count the number of verses from 13:1 to 22:43 (remember

that sura 13 has 43 verses) there are $931 = 19 \times 49$. Note chapter 49 is the 22^{nd} un-initialed sura in the Quran. Furthermore, the 931^{st} composite is 1119. Note the 19^{th} number (including fractions) in the Quran is 11, which is mentioned in chapter 12, verse 4. Verse 11:19 is the 1343^{rd} frequency of the word God signifying that sura 13 has 43 verses. Furthermore, as described above, sura 13 is related in a multi-dimensional way to sura 22 in the Quran. Note sura 13 is an initialed sura and the number of initials is 1482. This number is a "twin prime companion" (TPC) and it happens to be the 49^{th} TPC. Sura 49 is the 22^{nd} un-initialed sura in the Quran.

4.37 More Ultimate Mathematics

Chapter 13 called "The Thunder" talks about how the thunder glorifies and praises God and so do the Angels out of reverence for Him. Here we discuss the number of verses, where the verse number is a prime number and the method by which it connects sura 13 to 22. If we count the number of verses where the verse number is a prime up to the end of sura 13 we find 419 such verses. Number 419 happens to be the 22^{nd} twin prime. We find there is only one chapter in the Quran, which has 13 verses and it is chapter 60. If we continue counting the number of verses where the verse number is a prime up to the end of chapter 60 (60:13), we find there are 1343 such verses. Note sura 13 has 43 verses.

4.38 Awesome Mathematical Proofs

Let the order of a verse be the number of times God is mentioned in that verse. (e.g., verses of order 0, have 0 frequencies of the word God.) These proofs again

are in connection with chapter 9 and the number of its actual verses which is 127. Starting with verse 126 in sura 9, the last 0-ordered verse (a verse where the word God is not mentioned) and counting backwards, we find that the 12^{th} such verse is verse 73; pointing to 1273, which is the frequency of the word God until the end of chapter 9. Now we do the same exercise with the ordered verses (the verses where the word God has been mentioned at least once) starting with verse 127 in sura 9 and counting towards the beginning, we find the following simple facts: the 36^{th} such verse is 83, the 63^{rd} such verse is 46, and the 76^{th} such verse is 31.

These are controlling parameters telling us that chapter 36 has 83 verses; total number of verses in the entire Quran is 6346, and chapter 76 has 31 verses.[4]

4.39 Awesome Mathematical Fact

I have been explaining above specific details about sura 13 (the 13^{th} integer in the Quran is 19) in the Quran and all the mathematical facts associated with it controlling the number of verses in sura 9. Sura 13 is related to chapter 27, because the 13^{th} initialed sura is 27. Remember that sura 27 is the only chapter in the Quran where the opening statement of the Quran, i.e. Bismallah, which is mentioned in the beginning of every chapter except for chapter 9; has been mentioned twice, thereby compensating for the missing opening statement of sura 9. The number of verses from the beginning of sura 9 to the end of sura 13 is $513 = 19 \times 27$. Shown in table 4.16 are the number of verses in chapters 9, 10, 11, 12, and 13. Some of these numbers are primes and some are composites.

Table 4.16: Mathematical structure of chapters 9 through 13

Sura number	Number of verses	Prime-numbered verses
9	127	31
10	109	29
11	123	30
12	111	29
13	43	14

You also see their respective indices.[4]

The sum of numbers in the third column of table 4.16 is $133 = 7 \times 19$. Note here that the coefficient of 19 is 7 and we further note that the 7^{th} initialed sura in the Quran is chapter 13.

4.40 Another Mathematical Fact

The following mathematical fact has to do with the sequence of the suras where the number of verses is a prime in the Quran. In table 4.17, suras where the number of verses are prime numbers are tabulated. In the first column, the sequence of such suras is listed.

Note here again in table 4.17, the 19^{th} sura in the Quran with a prime number as its number of verses is 82 which happens to be the first chapter in the Quran with 19 as its number of verses.

We also note there is one word God mentioned in sura 82 and it is the 19^{th} frequency of the word God from the end of the Quran. Note also that this word God is mentioned in verse 19 of this chapter [4].

Table 4.17: Mathematical structure of chapters with a prime as their number of verses

Sequence number	Sura number	Number of verses
1	1, 107	7
2	9	127
3	10	109
4	13	43
5	26	227
6	33	73
7	36	83
8	42	53
9	43	89
10	44	59
11	45	37
12	48, 57, 81	29
13	60	13
14	62, 63, 93, 100, 101	11
15	76	31
16	82, 87, 96	19
17	86	17
18	97, 105, 111, 113	5
19	103,108, 110	3

4.41 Awesome Mathematical Fact: Sura 9 has 127 Verses

The Quran has many features by which it mathematically dictates how many verses each chapter must have. We know that, for example, chapter 9 is of special interest because two verses 128 and 129 have always been suspect. However, every sura in the Quran is mathematically guarded to contain specific number of verses and nothing else but those specific numbers. The proof, I am about to introduce to you, is about the positions of initialed suras or chapters in the Quran. There are many ways to connect chapter 9, 13, 22, and 27. We further note relations among 9, 13, 19 and 22 and how the number of verses in 9 is controlled by the position of initialed suras in the Quran. The reader should note that 22 is the 13^{th} composite and if we tabulate all the initialed suras in the Quran, we note that chapter 41 is the 22^{nd} such chapter. It is very easy for the reader to verify that the 13^{th} prime number is 41 and that the 13^{th} integer in the Quran, in ascending magnitude is 19. If we count all the numbered verses from 9:127 to 22:41 we find that there are 1273 verses. Note that $1273 = 19 \times 67$, where 67 is the 19^{th} prime, but more important is that 1273 is the number of frequency of the word اَللّٰه (Allah) or God from the beginning of the Quran to the end of chapter 9, or verse 127. As I have been stressing, the importance of verse 17:88 becomes clear, which states:

17:88 - Say; "If all the humans and the jinns band together to produce a Quran like this, they could never produce one like it, no matter how much assistance they lend one another."

4.42 Awesome Mathematical Fact: Lonely Primes Control Number of Verses

The number of verses in each and every sura in the Quran must be exactly what they are and nothing else. Let us look at sura 13 and 31. We note immediately that 31 is the reverse of 13. We find that chapter 13 has 43 verses and that chapter 31 has 34 verses. We note that 43 is also the reverse of 34. These are simple observations that one can readily make. Now if we look at the position of un-initialed suras in the Quran, we note that the 13^{th} un-initialed sura is chapter 24 and the 31^{st} un-initialed sura is 59. If we look at sura 59, we note that it has 24 verses. Now, if we count all the verses from 13:1 to 59:24, we see that there are 3443 verses. Note from the above that 13 has 43 verses and 31 has 34 verses. If we count the number of verses from 13:1 to 24:59, we note that there are 1143 verses and $1143 = 9 \times 127$. We know that chapter 9 has 127 verses. Furthermore, 1143 is the index of composite 1362. Verse 9:127 is the 1362^{nd} numbered verse from the beginning of the Quran. Now this is also connected to chapter 19. We note that the 13^{th} integer in the Quran is 19 and 191 (191 referring to 19:1) is the 43^{rd} prime number and chapter 13 has 43 verses. We also can verify that the 191^{st} lonely prime is 2137, which is the 322^{nd} prime and if we add it to its index we get;

$$2137 + 322 = 2459. \tag{4.56}$$

The number 2459 is another lonely prime and it happens to the 221^{st} such prime. These numbers directly connect verses 19:1 to 22:1. As described in chapter two, lonely primes are the primes left of the integers when we remove all twin primes from the set of primes. Therefore, the first lonely prime is 2,

the second is 23 and the third is 37 and so on.

4.43 Awesome Mathematical Facts

Every chapter in the Quran must have the number of verses as is forced by the Ultimate Mathematics. Let us look at chapter 43 and chapter 24. We see that chapter 43 is the 24^{th} initialed sura and the 24^{th} prime is 89 and we know that chapter 43 has 89 verses. Chapter 52 is the 24^{th} un-initialed sura in the Quran. Number 24 is the 14^{th} composite and chapter 14 has 52 verses. Chapter 52 is the 24^{th} un-initialed sura and 24 is the 13^{th} un-initialed sura. Chapter 49 is the 22^{nd} un-initialed sura and 22 is the 13^{th} composite. Note, sura 52 has 49 verses. These simple but fundamental loops control the number of verses in different suras in the Quran.

4.44 Awesome Mathematical Facts

We note the following awesome mathematical fact, further proving that the total number of حم initials in chapters 40 through 46 must be 2147. The key again is chapter 42, the only sura or chapter in the Quran where the first two verses are composed of initials. In this sura, if we count the verses where the word God is mentioned, we find that the 21^{st} such occurrence is verse number 47, therefore we are back to 2147. We also look at chapter 47, and we find that there are 21 verses where the word God is mentioned. We are again back to 2147 [4].

4.45 Number of Initials in Sura 13 Confirms that Sura 9 has 127 Verses

The mathematical fact, I am about to introduce to you, is about the positions of verses in certain initialed suras or chapters in the Quran and how these are connected to the frequency of initials and number of verses in different suras. I have shown you many mathematical links between chapters 9 and 13. This time, we note further relations between chapters 9 and 13 and how the number of verses in sura 9 is controlled by the position of certain verses in initialed suras in the Quran. The reader should remember that sura 13 is an initialed sura and its initials are composed of four different Arabic letters, الٓمٓرٰ (A.L.M.R.). The total frequency of all these letters in chapter 13 is 1482. If we look at the 1482^{nd} numbered verse from the beginning of the Quran, we find that it is the 11^{th} verse of chapter 11. Now let us look only at the total number of verses in the initialed suras up to and including 11:11. We find that 11:11 is the 812^{th} such verse. On the other hand, if we count all of the numbered verses in the un-initialed suras up to the end of chapter 9 we note that there are 670 such verses. Obviously, if one adds 670 and 812 one obtains 1482, however, the intricacy of the Quran is revealed when we note that 812 is a composite number and it happens to be the 670^{th} composite. In other words, 1482 is partitionable into a composite and its index. Note that if you count all the verses including the un-numbered opening statements, i.e., Bismallah's, in the initialed suras up to and including 11:11, one finds that there are 817 such verses. Note that $817 = 19 \times 43$ and that chapter 13 has 43 verses. I remind the reader that 11:11 is the 1482^{nd} numbered verse from the beginning of the Quran and this is the number of the

frequency of the usage of the initials in chapter 13. This design is only possible by God and no one else. It is befitting to stress the importance of verse 17:88, which states:

17:88 - Say, "If all the humans and the jinns band together to produce a Quran like this, they could never produce one like it, no matter how much assistance they lend one another."

4.46 Awesome Mathematical Fact: Primes and Number of حم and Number of Verses are Controlled

We note the following property in sura 42. Sura 42 is the only sura in the Quran where the first two numbered verses are composed entirely of initials. This fact is connected to the first set of initials, namely, حم (HaMeem) and where the two letters ح (H) and م (M) are utilized in verses with a prime number as the verse number. As mentioned above, the reader should keep in mind that verse 42:2 is also composed entirely of initials عسق (A.S.Q.). When we count all the ح's (H's) and م's (M's) up to the end of verse 13, we find that the total frequency of usage of H's + M's in verses with primes as their number is 43. Note that sura 13 has 43 verses. If we continue counting until the end of the 13^{th} prime which is verse 41, we find that there are 78 usages of H's + M's in the prime numbered verses. Note that 41 is the 22^{nd} initialed sura and we know that sura 22 has 78 verses. The reader should note that sura 13 has 19×78 A's + L's + M's + R's used in the entire sura. If we keep counting the number of usage of H's and M's in prime-numbered verses, the next one is verse 43 which is the 14^{th} prime and we note that the number of H's + M's up to and including verse

43 is 82. Therefore, we are back to 1482 and we know that this is the number of frequency of usage of the initials A's + L's + M's + R's in chapter 13 and that this chapter has 43 verses. If we keep counting until the end of this chapter, we find that there are 15 verses with primes as their verse number, the number of frequency of usage of H's + M's is 99. One can easily verify that sura 15 has 99 verses. [4]

4.47 Awesome Mathematical Fact: Number of Initials in Sura 43

The mathematical facts, I am introducing to you, is about the frequency of occurrence of ح and م (H's and M's) in the حم (H.M.)-initialed chapter 43. We focus on the verses with a prime number assigned to them and contain both usages of the Arabic letters ح (H) and م (M). We find that there are 11 such verses. Now what immediately comes to mind is that the number $1143 = 9 \times 127$. The total sum of the frequency of ح + م (H's + M's) up to and including verse 89 is 59. Note that 89 is the 24^{th} prime number and chapter 59 in the Quran is the only chapter which contains 24 verses. It is noteworthy that 43 is the 24 initialed sura and the first verse in this chapter happens to be the 4324^{th} numbered verse from the beginning of the Quran. Now if we subtract 4324 from 8959, we get 4635. Note that chapter 46, the last حم (H.M.)-initialed sura, has 35 verses.

4.48 Number of Verses Are Controlled by the Positions of Suras

A sophisticated, yet simple, mathematical connection controls the number of verses in suras in the Quran to their position in the domain of initialed or un-initialed chapters and their indices in the prime and composite universe. I bring you a few examples, by which we see these awesome mathematical relations. These examples are easy to verify and can be checked very easily. The 13^{th} un-initialed sura is 24, the 24^{th} initialed sura is 43 and sura 43 has 89 verses. So we have, 13, 24, 43, 89.

Note 13 has 43 verses and the 24^{th} prime number is 89. If we add this prime to its index we get $24 + 89 = 113$. Number 113 is the 30^{th} prime and sura 89 has 30 verses. Note also that, $43 + 24 = 67$ and $43 - 24 = 19$. We know that 67 is the 19^{th} prime. Note also that sura 67 has 30 verses and 30 is the 19^{th} composite. Chapter 43 is the only chapter in the Quran with such a mathematical property. Sura 78 is the 49^{th} un-initialed sura in the Quran. Sura 49 is the 22^{nd} un-initialed sura. Sura 22 has 78 verses.

4.49 Awesome Mathematics: Chapter 9 has 127 Verses

By now, we know that sura or chapter 9 in the Quran has 127 verses. We have also learned, that not only the chapter 9 has to have 127 verses, but that every sura or chapter in the Quran must have a specific number of verses. Now, here are more mathematical facts as to why 9 has to have 127 verses. Let us recap some of the many mathematical facts why sura 9 must have 127 verses. We know that verse 9:127 is the 1362^{nd} verse from the beginning of the Quran and

that 1362 is the 1143^{rd} composite and we have; [5]

$$1143 = 9 \times 127. \tag{4.57}$$

Note that sura 9 is an un-initialed sura and 9:127 happens to be the 670^{th} un-initialed verse from the beginning of the Quran. If we subtract this number from 1362 which is the total number verses up to and including 9:127 we get 692 which is the number of initialed verses, as we would expect. But, if we subtract 670 from 1143 which is the index of 1362:

$$1143 - 670 = 473 \tag{4.58}$$

and we find that;

$$473 = 11 \times 43. \tag{4.59}$$

Furthermore, verse 11:43 in the Quran is the 1514^{th} numbered verse from the beginning of the Quran. Obviously, because 1514 is an even number, it is a composite and it happens to be the 1273^{rd} composite. The reader should note that the 1273^{rd} frequency of the word ٱللَّٰه (Allah) or God occurs in 9:127.

4.50 More Mathematical Facts

So far, I have been showing the reader that it is not only the literal sense of the Quran, or its mathematical composition which can not be imitated, but that the mathematics that generated the Quran is beyond our capability. Let me give you another example besides the many examples given before. The number of verses from the beginning of the Quran to 19:98 which is the end of sura 19 is 2346 and 1998 is the index of 2346. If we count the number of verses from 9:1 to

19:98 we find that there are 1111 verses and if we do the same exercise and count the number of verses from 9:1 to 23:46, we find that there are 1482 verses. The intricacy of the mathematics becomes evident when we note that verse 11:11 is the 1482^{nd} verse from the beginning of the Quran. We also learned, if we look at the initialed verses up to and including 11:11, we find that this verse is the 812^{th} such verse. This number is a composite and its index is 670. We also note that the 670^{th} un-initialed verse from the beginning of the Quran is 9:127. Therefore, 1482 is partitionable into a composite and its index such that the index is referring to sura 9 having 127 verses. Note that 1482 is the number of frequency of the initials in sura 13.

4.50.1 Primes and Lonely Primes and Number Base System Produce the Quran

96:1 - Read in the name of your Lord who created.

The above verse, namely 96:1, was the very first verse ever revealed. Sura 96, therefore, constitutes the very first sura in the chronological order of revelation of the Quran. We know today, that the Quran is mathematically generated beyond our capability. In sura 74 verse 30, the Quran tells us; "Over it is 19". Accordingly, this first revelation contains 19 verses. Now, let us look at the awesome mathematical properties of the number 9619 and how this number controls the number of suras or chapters in the Quran by the manifestation of the Ultimate Mathematics.

Number 9619 is a prime number and its index is 1187. In other words, the 1187^{th} prime number is 9619. Number 1187 is also a prime number, however, it is a special prime, called a "lonely" prime. We introduced the lonely primes in

chapter two of this book, as a part of the Ultimate Mathematics of the Quran. I will refresh the reader's memory by saying that a lonely prime is obtained once the twin primes are removed from the set of the prime numbers. Therefore, the first ten (10) lonely primes are 2, 23, 37, 47, 53, 67, 79, 83, 89, and 97. Now, if we look at the index of the lonely prime 1187, we note that it is the 114^{th} lonely prime. Note that 114 is the number of suras or chapters in the Quran. I want to stress that these mathematical relations are not known to mathematicians. This mathematics is beyond the capability of humans and jinns together, no matter how much assistance they give to one another, as it is stated by God in 17:88. These are manifestations of the Ultimate Mathematics, described in chapter two, as it shaped a scripture called the Quran.

4.51 Ultimate Mathematics: Awesomeness Pure Mathematical Facts

The basic message of the Quran is that there is no god but God. As mentioned previously, the Quran is a unique book, having a property never seen in any other literary work, with 29 chapters starting with letters that do not make up any Arabic word, as the first verse and in one case also as the second verse. These chapters are referred to as the "initialed" suras[3]. These letters constitute a mathematical code and they are part of the proof of the Quran's eternal aspect. The revelation of the Quran chronologically was not the same as its compiled version. For example, the first sura revealed was 96 and the last sura was 110. Sura 96 has 19 verses and the number 9619 generates parameters of the Quran in a way that is truly amazing. The number 9619 is a prime number and its index is 1187. Number 1187 is also a prime and, as mentioned above, belongs

to a group of unique primes that we have called "lonely" primes. Now if look at the index of 1187 in the domain of lonely primes, we note that it is the 114^{th} such prime. The reader notes that 114 is the number of chapters in the Quran. Prime 9619 is also a lonely prime and it happens to be the 790^{th} lonely prime. At first glance, the number 790 does not tell us anything pertaining to any of the parameters of the Quran, however, it would, if we look at it in a different light. If we assume that 790 is written in base 19 and we were to convert it into base 10, then we have;

$$7 \times 19^2 + 9 \times 19 + 0 = 2698. \tag{4.60}$$

It can be easily verified that the number 2698 is the frequency of the word اَللّٰه (Allah) or God in the Quran. Just imagine a book that tells its reader, in such a unique and humanly impossible way, how many chapters it has and how many times the name of its author has been mentioned in it.

4.52 Ultimate Mathematics: Awesomeness of the Quran

I must say, that there is no end to this structure. Let me now explain the following mathematical fact. Sura 27 in the Quran, called "The Ant", is an initialed sura. It happens to be the 13^{th} initialed sura in the Quran. Sura 13 is also an initialed sura and the sum of the total frequency of the four initials in this chapter is 1482. The number 1482 is a TPC and it is the 49^{th} such number and 1482 is also equal to 19×78. Note that the 49^{th} un-initialed sura is sura 78. The number 1482 written in base 19 is 420 and 420 happens to be another TPC and it is the 22^{nd} such number. Note that the 22^{nd} un-initialed sura in the

Table 4.18: Frequency of the initials ح (Ha) and م (Meem) in suras 43 through 46

Sura Number	Frequency of م	Frequency of ح
43	324	44
44	150	16
45	200	31
46	225	36
Total	899	127

Quran is 49 and chapter 22 has 78 verses. Note also that the 2249^{th} numbered verse from the beginning of the Quran is 19:1. Also 22 is the 13^{th} composite and 22 written in base 19 is 13 and the 13^{th} integer in the Quran is 19. Verse 4:20 is the 513^{th} numbered verse from the beginning of the Quran and $513 = 19 \times 27$. Note that the 13^{th} initialed sura is 27.

4.53 Ultimate Mathematics: Awesome Mathematical Facts

In this section, I introduce you to a mathematical fact which explains one of the many reasons, why Arabic was chosen as the language of the Quran, and how this confirms the number of verses in three suras of the Quran and emphasizes that since Muhammad was the recipient of the Quran, then sura 9 has to have 127 verses.

Let us look at suras 43 through 46. Remember that seven suras in the Quran, namely 40 through 46 are initialed with the two Arabic letters ح (Ha) and م (Meem). Table 4.18 shows the frequency of these letters from sura 43 to sura 46. Note that the sequence of حم (Ha) and (Meem) is from right to left as in the Arabic text. The reason for this will become apparent as we proceed.

From table 4.18, we note that the sum of م's (M's)is 899 and the sum of ح's (H's) is 127. If we put number 43, the sura number we started with, in front of 899 127, we get 43899127. This number tells us that sura 43 has 89 verses and sura 9 has 127 verses. If we perform the following operation;

$$9127 - 4389 = 4738. \tag{4.61}$$

Note also that 4738 tells us that sura 47 has 38 verses. Furthermore,

$$4738 = 23 \times 2 \times 103. \tag{4.62}$$

The indices of these prime factors are 9, 1 and 27. We, therefore, are back to sura 9 having 127 verses. Also, please note that sura 47 is called Muhammad. Therefore, sura 47 by having 38 verses is telling us that the Quran which was revealed to Muhammad had 127 verses in sura 9. Remember, the order of writing prime factors in the above equation is based on the fact that 9127 is the 19^{th} permutation of 1279 and the order is forced by verse 74:30, "Over it is 19".

4.54 Ultimate Mathematics: Over it is 19

17:88 - Say; "If all the humans and the jinns band together to produce a Quran like this, they could never produce one like it, no matter how much assistance they lend one another."

In this section, I will introduce you to a mathematical fact which generates many parameters of the Quran. Let us look at chapter 19 and count all the numbered verses until the end of this chapter or sura, namely from 1:1 to 19:98. We find that there are 2346 such verses. The number 2346 is a composite and

Table 4.19: Permutation group elements of 2346 with their ascending positional indices

index	group element	index	group element
1	2346	13	4236
2	2364	14	4263
3	2436	15	4326
4	2463	16	4362
5	2634	17	4623
6	2643	18	4632
7	3246	19	6234
8	3264	20	6243
9	3426	21	6324
10	3462	22	6342
11	3624	23	6423
12	3642	24	6432

it is the 1998^{th} composite and we note that the last verse in sura 19 is 98 [5]. This should be enough to bring clear evidence of the uniqueness of the Quran as a literary piece of work. This is only part of the story. Let us look at all the permutation group elements of 2346 in ascending order. Table 4.19 illustrates this facet of the Ultimate Mathematics in the best manner.

We plainly see that the 19^{th} index corresponds to group element 6234. The number, 6234, is the total number of "numbered verses" in the entire Quran. This is why, in 74:30, God says "Over it is 19". Note, this is only possible if and only if sura 9 has 127 verses. Remember, we started with 2346 and obtained the number of verses in the entire Quran. Let us do the following operation.

$$6234 - 2346 = 3888. \tag{4.63}$$

Note, sura 38 has 88 verses.

Sura Number	Frequency of م	Frequency of ح	م + ح
44	150	16	166

Table 4.20: Frequency of the initials حم in sura 44

Index of Sura Number	Index of Frequency of م	Index of Frequency of ح	Index of م + ح
29	114	9	127

Table 4.21: Index of Frequency of the initials حم in sura 44

4.55 Ultimate Mathematics Links the Number of ح (Ha) and م (Meem) in Sura 44 to Sura 9

Chapter or sura 44 in the Quran is one of the seven حم (H.M.)-initialed chapters in the Quran. We shall see here that the frequency of the usage of the Arabic letters ح and م (H and M) and their sum actually links these Arabic letters to the number of chapters in the Quran, the number of initialed suras in the Quran and the number of verses in sura 9.

Let us look at table 4.20.

A simple look at the numbers in table 4.20 reveals that all are even and therefore all are composites. A simple operation of composite-index relation will reveal astonishing information regarding the Quran. Let us look at table 4.21.

Numbers in table 4.21 tell us that there are 29 initialed suras in the Quran, and that the Quran has 114 suras and that sura 9 has 127 verses.

Table 4.22: Permutation group elements of 1482 with their ascending positional indices

index	group element	index	group element
1	1248	13	4128
2	1284	14	4182
3	1428	15	4218
4	1482	16	4281
5	1824	17	4812
6	1842	18	4821
7	2148	19	8124
8	2184	20	8142
9	2418	21	8214
10	2481	22	8241
11	2814	23	8412
12	2841	24	8421

4.56 Ultimate Mathematics: Over it is 19

17:88 - Say; "If all the humans and the jinns band together to produce a Quran like this, they could never produce one like it, no matter how much assistance they lend one another."

Let us look at chapter 11 and 13 and the frequency of the number of initials in these two suras. We have 2489 ا + ل + ر, A's + L's + R's utilized in chapter 11 and 1482 ا + ل + م + ر or A's + L's + M's + R's utilized in chapter 13. There are awesome relations between these numbers and the number of verses and the position of the word اَللّٰه (Allah) or God in the Quran which are independent of language. Let us look at all the permutation group elements of 1482 in ascending order. Table 4.22 illustrates this manifestation of the Ultimate Mathematics in the best possible way.

We see that the 19^{th} index corresponds to the group element 8124. Now, let us count all the verses from 1:1 to 81:24; there are 5822 numbered verses. One

notes that sura 58 has 22 verses. Furthermore, the last frequency of the word ٱللّٰه (Allah) or God in 58:22 is 2489. Note that 2489 is the frequency of ٱ′s + ل′s + ر′s (A's + L's + R's) in sura 11. Remember, we started with 1482 and obtained the number of verses in sura 58 and connected this to the frequency of initials in sura 11. Verse 11:11 in the Quran is the 1482^{nd} verse from the beginning of the Quran and from 58:22 to the end of the Quran there are exactly 1111 verses.

Verse 11:11 is the 812^{th} initialed verse from the beginning of the Quran and 812 is the 670^{th} composite. The sum of $670 + 812 = 1482$ and 11:11, as mentioned above is the 1482^{nd} verse from the beginning of the Quran. More importantly, the 670^{th} un-initialed verse from the beginning of the Quran is 9:127.

4.57 Ultimate Mathematics Connecting Sura 13 and Sura 19

The sum of frequencies of the usage of the initials ٱلمر in sura 13, as seen above, is 1482. We also know that the 13^{th} integer in the Quran is 19. Now, let us see how one can generate the number of the frequencies of كهيعص composed of five Arabic letters and pronounced Kaaf, Ha, Ya, Ain, Saad in sura 19. The number 1482 has four digits, 1, 2, 4 and 8. The first prime is 2, the second prime is 3, the 4^{th} is 7 and the 8^{th} prime is 19. Let us assume these are the factors of a composite number, then we have;

$$2 \times 3 \times 7 \times 19 = 798. \tag{4.64}$$

The number 798 is the sum of the frequencies of the initials كهيعص in sura

19.

4.58 Ultimate Mathematics: Revelation and Compilation Connection of Suras

As we have seen before, the number of verses from 1:1 to 19:98 is 2346. The number 2346 is a composite and it is the 1998^{th} composite and we can verify that sura 19 has 98 verses. This is the way the Quran is put together in its compiled version, however, in its revelation order as shown in table 3.1, 19:98 happens to be the 1365^{th} verse that was revealed. The index of composite 1365 is 1146 and we note that sura 114 in the Quran has 6 verses. Furthermore,

$$1365 = 3 \times 5 \times 7 \times 13. \tag{4.65}$$

The indices of these prime factors are 2, 3, 4 and 6 and we are back to 2346 [5].

4.59 Ultimate Mathematics: Over it is 19

The function of the Ultimate Mathematics of prime numbers and their indices is to inform us that not only is the Quran mathematically generated, but it is generated with a mathematics far beyond our knowledge. The Quran challenges us to acquire knowledge about it and not to summarily dismiss it.

Let us look at the number 4567. It is a very easy number to remember because it is the combination of four consecutive digits. This number happens to be a prime number and is the 619^{th} prime number. We can verify that 619 is also a prime and it is the 114^{th} prime and 114 is the number of chapters in the Quran. Let us look at all the permutation group elements of 4567 in ascending

Table 4.23: Permutation group elements of 4567 with their ascending positional indices

index	group element	index	group element
1	4567	13	6457
2	4576	14	6475
3	4657	15	6547
4	4675	16	6574
5	4756	17	6745
6	4765	18	6754
7	5467	19	7456
8	5476	20	7465
9	5647	21	7546
10	5674	22	7564
11	5746	23	7645
12	5764	24	7654

order. Table 4.23 illustrates this group of numbers the best way.

We see that the 19^{th} index corresponds to the group element 7456. Now let us look at chapter 74 in the Quran, we note that 74:56 is the last verse in this sura. In other words, sura 74 has 56 verses. Remember that this chapter is the only sura where the number 19 is mentioned. The number 7456 is a composite and it is the 6512^{th} composite and a quick look at the Quran reveals that chapter 65 has 12 verses. Note that chapters 74 and 65 are un-initialed suras and they are the 45^{th} and 37^{th} un-initialed suras in the Quran, respectively. Another quick look at the Quran reveals that chapter 45 has 37 verses.

Furthermore, 6512 and 7456 are the 23^{rd} and the 19^{th} elements in the permutation group of 1256 and 4567, respectively. It happens that 2319 is the 1974^{th} composite and we know that number 19 is mentioned in chapter 74.

Table 4.24: Frequency of the initials حم (H.M.) in Suras 43 through 46

Sura Number	Frequency of م	Frequency of ح	Sum of Frequencies (حم
43	324	44	368
44	150	16	166
45	200	31	231
46	225	36	261
Total	899	127	1026

4.60 Number of Initials in Chapter 29 and 31 and 43 and their Relation to Ultimate Mathematics

Let us look at the number of initials حم (H.M.) in chapter 43 to 46. Table 4.24 makes it easy to see these counts [3]

Note the total frequency of the letter م (Meem) in these four حم-initialed suras is 899. We have;

$$899 = 29 \times 31. \tag{4.66}$$

Remember, we started with sura 43. Now look at 43^{rd} TPC which is 1278. Verse 12:78 is 1672^{nd} verse from the beginning of the Quran and

$$1672 = 19 \times 88. \tag{4.67}$$

The two numbers 43 and 88 are the key connectors. Let us do this:

$$19 \times 88 = 1672, \tag{4.68}$$

and,

$$19 \times 43 = 817. \tag{4.69}$$

These two numbers 1672 and 817 are the number of frequencies of الٓمٓ (A.L.M.) in chapters 29 and 31.

We also note that the number of frequency ح + م (H + M) in sura 43 is 368. Number 368 is the index of composite 456 and $456 = 19 \times 24$. Note that 43 is the 24 initialed sura in the Quran and verse 43:1 حٰمٓ is the 4324^{th} verse from the beginning of the Quran. Furthermore, 456 is the index of composite 559 and

$$559 = 13 \times 43. \tag{4.70}$$

Note, chapter 13 has 43 verses. We also note that the 13^{th} un-initialed sura is sura 24 and the 24^{th} prime number is 89 and chapter 43 has 89 verses. Furthermore, 559^{th} composite is 684 and;

$$684 = 19 \times 36. \tag{4.71}$$

Note, sura 36 is the 19^{th} initialed sura in the Quran.

4.61 More Quranic Facts Based on Ultimate Mathematics

The Quran informs us that God revealed His final scripture, the Quran, during the month of Ramadan. As I mentioned previously, the Quran is a unique book having a property, never seen in any other literary work with 29 chapters having letters as first verse and in one case second verse, referred to as "initialed" suras. These letters constitute a mathematical code connecting the Ultimate Mathematics to the literal structure of the Quran. As we have seen, this mathematical code is based on the number 19. The first initialed sura is number 2 and the last one is sura 68. The number of verses in

every sura is mathematically coded and the positions and number of verses are mathematically controlled.

Let us count all the initialed verses from 19:1 to 68:52, we find that there are 1514 such verses. The number 1514 is a composite and it is the 1273^{rd} composite. Note that 1273 is the frequency of word اَللّٰه (Allah) or God until the end of sura 9. Furthermore, 1514 numbered verse from the beginning of the Quran is verse 11:43. Remember that:

$$1143 = 9 \times 127. \tag{4.72}$$

Note also 1143^{rd} composite is 1362 and 1362 is the number of verses from the beginning of the Quran to 9:127. Therefore, the number of initialed verses from 19:1 to 68:52 which is the last verse in the last initialed sura points to the fact that sura 9 has 127 verses. This takes us back to chapter 9 having 127 verses. In sura 74 verse 30, God tells us "Over it is 19". Accordingly, the order of writing the digits 9, 1, 2 and 7 happens to be the 19^{th} group element for the permutation of these four digits in ascending order.

4.62 Ultimate Mathematics: Awesomeness of the Quran

I have been explaining the Quran and its mathematical structure, based on the Ultimate Mathematics of primes and their indices. I must say that there is no end to the formidability of this structure. Let me now explain the following mathematical fact from the Quran. Sura 38 in the Quran is called "Saad" which is an Arabic letter and it is initialed with the same letter. It happens to be the 20^{th} initialed sura in the Quran. Sura 47 is called "Muhammad", and it is

the 20^{th} un-initialed chapter in the Quran. Note that sura 47 has 38 verses. Verse 38:1 is the 2147^{th} initialed verse from the beginning of the Quran and the number of un-initialed verses up to this point is 1822 and 1822^{nd} composite is 2147. On the other hand, if we count the number of un-initialed verses up to 18:22, we find that there are 931 verses. The number 931 is 19×49 and note that 49 is the 22^{nd} un-initialed sura in the Quran and 18 is the number of verses in chapter 49.

4.63 Number of Verses in each Sura is Mathematically Controlled: Over it is 19

I will introduce here an awesome mathematical structure and how the Ultimate Mathematics, described in chapter two of this book, generates the Quran. Chapter 42 has 53 verses and we shall see how the number 4253 is designed beyond our imagination and how this number controls the number of verses in chapters 45 and 46, the last two حم (H.M.)-initialed suras. Let us look at the number 4253. We know that this number is a prime number and it generates a special class of primes known as Mersenne primes. A Mersenne prime, as described in chapter two, is of the form $(2^p - 1)$, where the power or the exponent p is a prime number. If we raise 2 to the power of 4253 and subtract one from the result, we obtain the 19^{th} Mersenne prime. Let us look at all the permutation group elements of 4253 in ascending order. Table 4.25 illustrates this numerical property the best way.

We see that the 19^{th} index corresponds to the group element 5234. Now let us look at the index of composite 5234, we find that it is 4537. If you look at chapter 45, you note that it has 37 verses. The 22^{nd} index in table 4.25

Table 4.25: Permutation group elements of 2345 with their ascending positional indices

index	group element	index	group element
1	2345	13	4235
2	2354	14	4253
3	2435	15	4325
4	2453	16	4352
5	2534	17	4523
6	2543	18	4532
7	3245	19	5234
8	3254	20	5243
9	3425	21	5324
10	3452	22	5342
11	3524	23	5423
12	3542	24	5432

is number 5342 and again it is a composite. The index of this composite is 4635 and a quick look in the Quran reveals that chapter 46 has 35 verses. Note that 4253, signifying sura number 42 and its number of verses 53, controls the number of verses in the last two حم (H.M.)-initialed suras, namely 45 and 46. Note that we started with 4253 and if we assume that 4253 is written in octal or base 8, then if we convert it to decimal or base 10 we get 2219. Note that the group elements where we found the number of verses in suras 45 and 46 are 19 and 22.

4.64 Ultimate Mathematics

Again more proofs that the Quran is designed through the Ultimate Mathematics of prime numbers and their indices. Many mathematical facts are connected to sura 13 in the Quran and it was puzzling as to why 13? It is a superstition in many cultures that the number 13 is an unlucky number.

Through these mathematical facts, we find that number 13 is another number created by God. The 13^{th} integer in ascending order in the Quran is 19. Moreover, sura 13 is one of the initialed suras in the Quran and although it is amongst a set of suras with الر (A.L.R.) initials, its initials are unique in the Quran and they are الر (A.L.M.R.). This is like a hint to us that there are profound proofs associated with this chapter. I should emphasize that the mathematics introduced here is not the ordinary mathematics of elementary level but a mathematics unknown to man and only known to God. This is to again tell us that not only the Quran is mathematically coded, but it is coded with a mathematics impossible for us to even imagine. I remind the reader that proofs are formidable and cannot be performed, imitated or emulated by any one except by God alone. Chapter 13 has 43 verses and we shall see how the number 1343 and its associated number 419 are designed beyond our imagination and how this number generates the number of verses in the entire Quran.

Let us look at the number of verses that are prime in each sura and count them. What do I mean by that? For example, sura 1 has 7 verses and there are 4 verses that possess a prime number as their verse number. These are verses 2, 3, 5, and 7. We continue to chapter 2 and we find that there are 61 verses that have a prime number as their verse number. If we continue until the end of chapter 13 we find that there are 419 verses with a prime number as their verse number. In other words, 13:43 is the 419^{th} verse in the Quran that has a prime number assigned to it as verse number. The number 419 belongs to the twin prime pair (419, 421) and it is the 22^{nd} twin prime. The number 419 also happens to be the sum of the 78^{th} prime and the index of the twin prime 419,

22, i.e. $397 + 22 = 419$. One immediately makes a connection between 22 and 78 where Sura or chapter 22 has 78 verses. Note also that if you multiply 78 by 19 you get 1482 which is the number of initials in sura 13. If we continue counting the verses with a prime number as their verse number, we get to the end of sura 60, the only sura in the Quran, which has 13 verses, we find that the number is 1343. Remember that sura 13 has 43 verses. We knew this before, but what we did not know is that if we look at the 419^{th} lonely prime, we find it to be 5003. I remind the reader that a lonely prime is obtained when the twin primes are removed from the set of prime numbers. Therefore, the first ten lonely primes are 2, 23, 37, 47, 53, 67, 79, 83, 89, and 97. Now if we add 419^{th} lonely prime 5003 to 1343 we get: $5003 + 1343 = 6346$. The student of the Quran recognizes that 6346 is the total number of verses in the Quran, including the 112 un-numbered opening statement, i.e., Bismallah. Note that 5003 is also the 670^{th} prime number. If we count all the un-initialed verses until the end of sura 9, that is 9:127, we find that this verse is the 670^{th} such verse from the beginning of the Quran. Let us count all the verses with a prime as their verse number from the end of chapter 13 to the end of chapter 60, the only chapter with 13 verses, we get 924. The number 924 is the index of composite 1111 and verse 11:11 is the 1482^{nd} verse from the beginning of the Quran and 1482 is the frequency of the initials الٓمٓر (A.L.M.R.) in chapter 13. If we count all the verses from 13:1 to 27:30 where the missing opening statement of chapter 9 is compensated, we find that there are 1482 verses. Again 1482 is the number of frequency of initials in chapter 13. Remember as we previously mentioned 2730

is a TPC and it is the 78^{th} such number and that

$$1482 = 19 \times 78. \tag{4.73}$$

Note also that 1482 is a twin prime companion and its index is 49 and the 49^{th} un-initialed sura is chapter or sura 78. Now if we count the number of initialed verses from 13:1 to 27:30, we find that there are 684 such verses and $684 = 19 \times 36$ and chapter 36 is the 19^{th} initialed sura. However, more importantly, the index of composite 684 is 559 and

$$559 = 13 \times 43, \tag{4.74}$$

and we know that chapter 13 has 43 verses. If we subtract 684 from 1482 we get 798 indicating the number of un-initialed verses between 13:1 and 27:30, but more importantly, $798 = 19 \times 42$ is the number of initials in sura 19.

4.65 Ultimate Mathematics, Digit Reproduction of 9:127

The design of the Quran through the Ultimate Mathematics Master Tablet has shown us again all things are exact and there are no "probabilities and statistics". I have referred to this mathematics as Ultimate Mathematics and the number system of the Quran keeps it intact. Let me explain how this is done. The number of verses where the word God has been mentioned until 9:127 is 790. The number 790 is 2698 written in base 19, i.e., $(790)_{19} = (2698)_{10}$. We know that 2698 is the frequency of the word God in the entire Quran. The number of verses until the end of sura 9 is 1362. The index of composite 1362 is 1143 and

$$1143 = 9 \times 127. \tag{4.75}$$

The number of verses with a prime number as the verse number until 9:127 is 317 and,

$$790 - 317 = 473 = 11 \times 43. \tag{4.76}$$

The number 9127 is a prime and its index is 1131. If we subtract 790 from 1131 we get:

$$1131 - 790 = 341 = 11 \times 31. \tag{4.77}$$

4.66 Ultimate Mathematics generates 127 Verses for Sura 9

I should emphasize that the mathematics introduced here is not the ordinary mathematics but a mathematics unknown to man and only known to God. In order to better understand this mathematics, please spend some time and study about prime numbers. The first time one comes across prime numbers and their properties is usually in the seventh grade. I remind the reader again that Ultimate Mathematics cannot be performed, imitated or emulated by anyone, but God. We look at all verses where the word اَللّٰه (Allah) is mentioned. We record all the verse numbers with the word God and add them up. When we reach 2:83, the sum of the verse numbers with the word God is 1362. This number is exactly the total number of numbered verses from the beginning of the Quran to 9:127. We know that the index of composite 1362 is 1143 and that:

$$1143 = 9 \times 127. \tag{4.78}$$

This is only half of the story as it was previously known to us. If we count the number of verses from 2:83 to 9:127, we find there are 1273 verses. Remember

that $1273 = 19 \times 67$ is the number of word God mentioned from the beginning of the Quran to 9:127.[4]

4.67 Ultimate Mathematics Generates 127 Verses for Sura 9

According to 34:45 of the Quran, the mathematical structure of the Quran is ten times greater than all the signs shown to the previous generations. I am going to repeat this again that the mathematics presented here is based on the Ultimate Mathematics of primes, composites, twin primes, TPCs and their respective indices. The mathematics becomes more complex as primes and composites that are partitionable into numbers with specific mathematical properties, such as a prime and its index adding up to yield another prime. The mathematics also transcends across number bases and other overwhelming phenomena. This mathematics then generates the Quranic structure such as number of verses, position of initialed and un-initialed suras, the verses containing the word God, and many other Quranic structures, including positions of single letters.

Let me now tell you about a mechanism based on the Ultimate Mathematics that preserves the Quran as it has been promised in the Quran by God.

15:9 – Surely, We have revealed the reminder and indeed We are its protector.

The mathematics again preserves the number of verses in the Quran and points to chapter 9 having 127 verses. The frequency of the word God until 9:127 is 1273. Now we count the number of all verses where the verse number is a prime number. For example, in chapter one, we have verses 2, 3, 5, and 7

as verses with a prime number as the verse number. Therefore, there are four such verses in sura one. We then continue counting these verses until we reach 1273^{rd} such verse. This verse happens to be 55:19. It is also happens to be that 5519^{th} composite is 6346 which is the total number of verses in the entire Quran.

4.68 Ultimate Mathematics Generates 127 Verses for Sura 9

15:9 – Surely, We have revealed the reminder and indeed We are its protector.

The mathematics again preserve the number of verses in the Quran and points to chapter 9 having 127 verses. The number of the verses where the word اَللّٰه (Allah) or God has been mentioned until 9:127 is 790. I also remind the reader about what we know concerning 790. If you assume that the number 790 is written in base 19, then if we write it in base 10 it will be 2698. In other words,

$$(790)_{19} = (2698)_{10}. \tag{4.79}$$

The number 2698 is the total number of word اَللّٰه (Allah) in the entire Quran. The 790^{th} lonely prime is 9619. The reader immediately recognizes that chapter 96, the first revealed sura, has 19 verses. Furthermore, 9619 is the 1187^{th} prime number and 1187 happens to be a lonely prime as well, and it happens to be the 114^{th} "lonely prime". You recognize that 114 is the number of suras or chapters in the Quran. The 1131^{st} prime number is 9127, and $1131 - 790 = 341$ and $341 = 11 \times 31$. These are some of the mathematical facts associated with the

number 790 in the Quran in order to refresh your memory. Now let us look at sura number 7 and 13 in the Quran and how God has given us a hint and how He relates these two suras through number 790. The first observation one makes about sura 7 and 13 is that both these suras start with the initials الٓمٓ (A.L.M.) but do not belong to the six الٓمٓ (A.L.M.)-initialed suras. Sura 7 includes the letter ص pronounced "Saad" and sura 13 includes the letter ر pronounced "Raa" in their initials. Furthermore, the 7^{th} initialed sura is sura 13. We know that the total frequency of the initials الٓمٓر (A.L.M.R.) usage in sura 13 is 1482. The total number of verses in the initialed suras to the end of chapter 7 is 692 and, $1482 - 692 = 790$. We see that we are back to the number 790 which is the number of verses where the word اَللّٰه (Allah) is mentioned until 9:127.

4.69 Ultimate Mathematics Generates Sura 9 Having 127 Verses

15:9 - Surely, We have revealed the reminder and indeed We are its protector.

The mathematics again preserves the count of verses and points to chapter nine having 127 verses. This time the mathematics crosses across number bases and glorifies God by absolute submission to Him. The number of the numbered verses in the un-initialed chapters up to 9:127 is 670. The total number of numbered verses up to 9:127 is 1362, it is the 1143^{rd} composite, and we already know that; $1143 = 9 \times 127$ and $1143 - 670 = 473$ and $473 = 11 \times 43$. Now, let us examine the verse 11:43. This verse is the 1514^{th} numbered verse from the beginning of the Quran. The index of the composite 1514 is $1273 = 19 \times 67$ is exactly the total frequency of the word اَللّٰه (Allah) or God up to 9:127. We know that the 8^{th} prime number is 19 and now let us assume that 1514 is written in

octal or base 8. If we write it in decimal or 10, that everyone is used to, we obtain the number 844, i.e. $(1514)_8 = (844)_{10}$. The number 844 is exactly the number of verses in the initialed chapters up to verse 11:43.

4.70 Another Mathematical Fact

The number of suras in the Quran is 114 in which 29 of them are initialed. This leaves us with 85 un-initialed suras in the Quran. There is a unique mathematical property associated with the composite number 2985, as we will see below. We know that every composite number can be factored out into prime numbers. Therefore:

$$2985 = 3 \times 5 \times 199. \tag{4.80}$$

The indices of the prime numbers 3, 5, and 199 are 2, 3, and 46. The number 2346 is the exact count of numbered verses until the end of chapter 19. We have known this for a few years that the index of composite 2346 is 1998 and that sura 19 has 98 verses and that

$$2346 = 23 \times 2 \times 3 \times 17, \tag{4.81}$$

where the indices of these primes are 9, 1, 2, 7. This again tells us that sura 9 has 127 verses.

4.71 Ultimate Mathematics; Sura 9 has 127 Verses

15:9 - Surely, We have revealed the reminder and indeed We are its protector.

The mathematics again preserves the number of verses in sura 9 as being 127 verses and this time points to the very first sura in order of revelation, chapter 96. Again the mathematics crosses number bases and glorifies God by absolute submission to Him. Let us study the first sura ever revealed, which is chapter 96. The number 9619 is a very interesting prime. It is a lonely prime and its index is 1187 which also happens to be a lonely prime. The index of 1187 in the domain of lonely primes is 114, the number of chapters in the Quran. As I mentioned, 9619 is a lonely prime and it is the 790^{th} such prime and $(790)_{19} = (2698)_{10}$. Remember that 2698 is the number of times the word ٱللَّه (Allah) or God appears in the entire Quran. Therefore, verse 96:19 possesses a pivotal role in the Quranic mathematical structure. Now, let us review the verse 9:127 and its mathematical properties. The number of the numbered verses in the un-initialed chapters up to 9:127 is 670. The total number of numbered verses up to 9:127 is 1362 which is the 1143^{rd} composite and we already know that

$$1143 = 9 \times 127, \tag{4.82}$$

and;

$$1143 - 670 = 473 = 11 \times 43. \tag{4.83}$$

Now, let us examine the permutation group properties of the number 1362. We can make 24, 4-digit numbers as shown in table 4.26.

Let us look at the group elements with indices of 1, 4, 9 and 19. The index number 1 is 1236 and it is the number of numbered verses up to and including 9:1, and $(1236)_8 = (670)_{10}$. As mentioned above, 670 is the number of verses

Table 4.26: Permutation group elements of 1236 with their ascending positional indices

index	group element	index	group element
1	1236	13	3126
2	1263	14	3162
3	1326	15	3216
4	1362	16	3261
5	1623	17	3612
6	1632	18	3621
7	2136	19	6123
8	2163	20	6132
9	2316	21	6213
10	2361	22	6231
11	2613	23	6312
12	2631	24	6321

in the un-initialed suras up to and including 9:127. Therefore, 1236 signifies the beginning and ending of sura 9. Index 4, 1362, is the number of numbered verses up to and including 9:127. The group element with index 9 is 2316. If one assumes that 2316 is written in base 8 or octal, then is converted to the decimal base it is 1230, i.e., $(2316)_8) = (1230)_{10}$. The number 1230 is the number of verses in the initialed verses up to and including 19:1. Number 1230 is also a TPC and happens to be the 42^{nd} TPC. Number of initials in sura 19 is $798 = 19 \times 42$.

4.72 Ultimate Mathematics

We have seen so many times proofs of the counts of verses in the Quran and that every sura is to have a specific number of verses and God has promised that He has revealed the Quran and that He protects it.

15:9 – Indeed we have revealed the reminder and indeed we are its protector.

The Quran has been designed by a built-in internal self consistency check based on mathematics of primes and their indices well beyond our knowledge.

There are two orders to the suras and verses in the Quran. One is the order of revelation and the other is the conventional order. The order of revelation places sura 96 as the first sura and the last sura as 110. The conventional order is the compiled form as we see it today with sura one being "the Opener" and the last sura being "the People". Accordingly, when we talk about verse 19 of chapter 96, we should note that this is the 19^{th} verse that was revealed. We shall see that this verse has a pivotal role in generating the number of verses in sura 9. Therefore, when we count the number of verses in the Quran, we are really counting them in two orders, conventional and revelation. We will see an awesome proof of how these two orders of counting coincide to keep the count of verses in sura 9 as 127. The count of verses from the beginning of the Quran until 9:127 in the conventional order is 1362. The index of composite 1362 is 1143 and we know that $1143 = 9 \times 127$. Now if we count only the number of verses in the un-initialed suras until 9:127 in the conventional order we get 670 and we have the following relation between 670 and 1143; $1143 - 670 = 473$ and $473 = 11 \times 43$. Now, let us concentrate on 11 and 43, which are the indices of primes 31 and 191 and multiplying 31 and 191 will get us $31 \times 191 = 5921$. Keeping the two numbers 473 and 5921 in mind, the 5921^{st} verse in the conventional order is the same as the 473^{rd} verse in the revelation order.

Table 4.27: Permutation group elements of 1236 with their ascending positional indices

index	group element	index	group element
1	1236	13	3126
2	1263	14	3162
3	1326	15	3216
4	1362	16	3261
5	1623	17	3612
6	1632	18	3621
7	2136	19	6123
8	2163	20	6132
9	2316	21	6213
10	2361	22	6231
11	2613	23	6312
12	2631	24	6321

4.73 Ultimate Mathematics: Sura 9 has 127 Verses

The mathematics of the Quran is stressing the fact that natural laws must not be violated lest we will have to suffer the consequences. Remember these laws are based on mathematical equations and they create a perfect balance. Any disturbance of this delicate order in the algebraic equation will be compensated and equalized. Here again are proofs pointing to the fact that chapter 9 has 127 verses.

The new item about sura 9 having 127 verses is based on the permutation group properties of the digits 1, 2, 3, and 6. Table 4.27 shows all 24-group elements.

The first group element is exactly the number of verses from the beginning of the Quran to 9:1. The 4^{th} group element 1362 is the number of verses from the beginning of the Quran to 9:127. The 19^{th} group element is the number of

verses from the beginning of the Quran to 96:19. Note that 96:19 was the 19^{th} verse revealed by God. These mathematical facts were mentioned above. Let us now focus on the 22^{nd} group element, 6231. This is exactly the number of verses in the revelation order up to and including 9:127. The 6231^{st} verse from the beginning of the Quran is 114:3. Remember, 1143^{rd} composite is 1362 and $1143 = 9 \times 127$.

4.74 Ultimate Mathematics Generates 127 Verses for Sura 9

Once again, we provide irrefutable mathematical proof, that chapter 9 has 127 verses. Let us look at the frequency of the word اَللّٰه (Allah) or God in the Quran. We note that in the compilation form of the Quran, the last usage of the word God or its 2698^{th} frequency is in verse 112:2. Now if we look at the order of revelation of the verse 112:2, we find that it is the 333^{rd} revealed verse. Number 333 is 1143 written in base 19, i.e., $(333)_{19} = (1143)_{10}$ and $1143 = 9 \times 127$. From 1:1 to 9:127, there are 1362 verses and this number is a composite and it is the 1143^{rd} composite.

The positional difference of 1362 and 1143 is: $1362 - 1143 = 219$. The number 219 written in base 8 or octal is 333 and 333 is 1143 written in base 19. So we are back to $1143 = 9 \times 127$. Note also that the 8^{th} prime is 19.

4.75 Ultimate Mathematics: Sura 9 has 127 Verses

The revelation the Quran occurred more than 1400 years ago. The order of revelation was not the same as the compiled version that we have today.

This sophisticated system of two different numbering system is to preserve the authenticity of the Quran and especially the number of verses in the Quran. Indeed both the revelation and the compilation of the Quran are mathematically designed and are the manifestation of the Ultimate Mathematics of chapter two and they tell us that Quran is an eternal book. Let us see how Quran was collected as the Quran which we have the privilege of reading.

75:16 – Do not move your tongue to rush it. 75:17 – Indeed, it is Us who collects and makes it a Quran.

Now let us look at sura 92, called "The Night". This sura has 21 verse. Note that 92 is the gematrical value of the word "Mohammad" and chapter or sura 21 is called "The Prophets". This is another Quranic numerical assertion that the final prophet was Prophet Mohammad (33:40). A prophet, by Quranic definition is a scripture-bearing messenger of God, therefore, Quran is the last scripture revealed by God. Sura 92 was the 9^{th} sura revealed and remember that the Quran was revealed in one night in the 9^{th} month of the lunar calendar called Ramadan, again according to the Quran. The number 9221 is prime number and its index is 1143 and as we have seen previously, $1143 = 9 \times 127$ and 1143^{rd} composite is 1362 and that 1362 is the total number of numbered verses until 9:127.

4.76 Ultimate Mathematics: Mary and Jesus

We study the mathematics of the Quran looking for the proof that we are dealing with the truth. The mathematics described in this section is from sura 19 in the Quran. We have seen that the order of revelation of the Quran and

the corresponding compositional order of the Quran has an awesome intricate relation that could only be authored by God alone. Sura 19 is called "Mary" and it has 98 verses and the word اَللّٰه (Allah) or God has been mentioned in it only 8 times. Note that 8^{th} prime number is 19. Sura 19 is also the 6^{th} initialed sura that was revealed. Note that 619 is a prime number and its index is 114 and $114 = 6 \times 19$. I remind the reader that 114 is the number of suras in the Quran. The word اَللّٰه (Allah) or God is mentioned for the first time in verse 30 of sura 19. Note that 30 is the 19^{th} composite. This verse refers to a great proof or sign from God regarding the new-born baby Jesus speaking in the crib, and it follows,

19:30 – He said: " Indeed I am a servant of God. He has given me the scripture and has made me a prophet."

Again note, this is the new-born baby Jesus talking, by God's command. He is speaking to his mother's accusers. According to the mathematics of the Quran this verse has an important position, in order to show us and to prove to us that this event actually happened. Verse 19:30 is the 114^{th} verse containing the word اَللّٰه (Allah) or God in the revelation order of the Quran. The number 114 is the number of chapters in the Quran. These awesome mathematical facts are proofs that the Quran is the narration of God and these events actually did occur, but since you and I were not there, God gives us the assurance in the Quran and proves it to us by the Ultimate Mathematics, the master tablet of the Quran.

4.77 True History of Jesus Supported by Ultimate Mathematics

One of the themes of this Ultimate Mathematics is not to say that God has begotten a son.

God is informing us in the Quran that the creation of Adam and Jesus is the same. This is stated in sura 3, verse 59.

3:59 – Surely, the example of Jesus as far as God is concerned is just like the example of Adam. He created him from clay and said to it, be, and it then came into existence.

Accordingly, the frequencies of the words "Adam" and "Jesus" are the same and both have been mentioned 25 times in the Quran. However, God has placed an awesome code based on the number 19, further advising people not to say that God has begotten a son.

If we look for the 19^{th} frequency of the word "Jesus", we do not have to look long, it is mentioned in chapter 19, which is named after his mother, Mary. Jesus is mentioned in verse 34 of chapter 19. Let us see what 19:34 states.

19:34 – Such is Jesus, son of Mary. This is the true narration about which they are in doubt.

If we look for the 19^{th} frequency of the word "Adam", again we do not have to look long, it is also mentioned in chapter 19. It is mentioned in verse 58 of chapter 19. Let us see what verse 19:58 states.

19:58 – These are some of the prophets whom God blessed, amongst the descendants of Adam and the descendants of those whom We carried with Noah, and the descendants of Abraham and Israel and from among those whom We guided and chose. When the revelations of The All Gracious is recited to them, they fall prostrate, weeping.

The sum of these two verses, 34 and 58 is 92, and if inspect verse 92 of sura 19, we find the 19^{th} frequency of the word ٱلرَّحمٰن (The All Gracious). Let us see what this verse states.

19:92 – It is not befitting for The All Gracious to beget a son.

This admonishment is backed by the mathematical code based on the Ultimate Mathematics of the Quran.

4.78 Ultimate Mathematics: Sura 9 has 127 Verses

‘ *9:1 – A reprieve has been issued from God and His messenger to those who assign partners for Him who enter into an agreement with you.*

The Quran warns the people who set up partners for God. This is also the theme of the previous scriptures. The Quran was therefore revealed more than 1400 years ago and its order of revelation was in a specific order different from the compiled version that we have today. These two sophisticated different numbering systems are a direct result of the Ultimate Mathematics of primes and

their indices and reveal eternal mathematical guards to preserve the authenticity of the Quran, such as the number of verses in each sura of the Quran. The mathematical fact that I am about to explain, again assigns 127 verses to sura 9. Let us look at sura 9 and find out its order of revelation. We find it to be the 113^{th} sura that was revealed. Therefore, verse 9:1 in the compilation order is 113:1 in the order of revelation. However, we know that 1131^{st} prime is 9127. This again in a very straight-forward way tells us that sura 9 has 127 verses.

4.79 Ultimate Mathematics generates Sura 9 with 127 Verses

Sura 110, The Triumph

1 – When God's support comes and the victory.

2 – You will see the people embracing God's religion in waves.

3 – You shall praise the glory your Lord and ask Him for forgiveness, indeed He is the Redeemer.

This chapter is the very last chapter revealed. Therefore, in the order of revelation, it is the 114^{th} sura. We see that it has 3 verses and we then have 1143. We know that; $1143 = 9 \times 127$, thus proclaiming that sura 9 has 127 verses. Remember also that from 1:1 to 9:127, there are 1362 verses and the index of this composite is $1143 = 9 \times 127$. Note, this mathematics existed before the physical existence of our universe and will outlast it.

4.80 Ultimate Mathematics Generates Suras 63 and 98 Having 11 and 8 Verses, Respectively

Tabulating the primes and composites reveals that 821^{st} prime is 6311 and 821^{st} composite is 988. Note, sura 63 has 11 verses and sura 98 has 8 verses. The three digits of 821 namely 8, 2 and 1 are the indices of prime numbers 19, 3 and 2. These are the prime factors of 114. In other words,

$$2 \times 3 \times 19 = 114. \tag{4.84}$$

Note, 114 is the number of suras or chapters in the Quran. Furthermore, 6311 is the 419^{th} Gaussian prime and the 419^{th} lonely prime is 5003. The 419^{th} prime numbered verse from the beginning of the Quran is 13:43. Note $1343 + 5003 = 6346$ which is the total number of verses in the Quran, including the 112 un-numbered opening verses i.e., Bismallah's.

4.81 Ultimate Mathematics Generates Quranic Parameters

A look at the 9^{th} prime 23 and the 9^{th} TPC 102 reveals a profound mathematical relation generating the number of verses in suras 19 and 9 of the Quran. The TPC 102 can be factored out into its prime factors in the following manner

$$102 = 2 \times 3 \times 17. \tag{4.85}$$

Now let us look at numbers 23, 2 ,3 , and 17. The indices of these primes are 9, 1, 2, and 7. We are back to 9127.

The product of these prime factors are;

$$2 \times 3 \times 17 \times 23 = 2346. \tag{4.86}$$

The index of the composite 2346 is 1998 and sura 19 has 98 verses.

A concatenation of the two numbers we started with, namely 23 and 102 yields the prime number 10223. The index of this prime number is 1254 which is equal to 19×66. But more importantly, 1254 is the sum of the frequencies of the three Arabic letters ا, ل, and م in the الٓمٓ (A.L.M.)-initialed sura, 30. Note 30 is the 19^{th} composite. Furthermore, if we assume that 1254 is in decimal, then it is 2346 in octal, i.e., $(1254)_{10} = (2346)_8$. We also note that 2346 is the 1998^{th} composite. We also see that

$$(1254)_8 = (684)_{10}. \tag{4.87}$$

The number $684 = 19 \times 36$ and sura 36 is the 19^{th} initialed sura in the Quran. Furthermore, the index of composite 684 is $559 = 13 \times 43$ and sura 13 has 43 verses. The index of composite 559 is $456 = 19 \times 24$ and sura 43 is the 19^{th} initialed sura revealed and it is the 24^{th} initialed sura in the Quran. The index of composite 456 is 368 and 368 is the number of frequencies of the initials حم (H.M.) in sura 43. The 9^{th} prime is 23 and the 9^{th} composite is 16. These two numbers are the factors of 368, i.e., $23 \times 16 = 368$. The 9^{th} lonely prime is 89 and sura 43 has 89 verses. The 9^{th} prime plus composite additive prime is $79(22) + 34(22) = 113$ and the 9^{th} individual twin prime is 31, and sura 31 has 34 verses. The 9^{th} prime is 23 and the 9^{th} composite is 16. The number 2316 is the 9^{th} permutation of 1236. Table 4.28 shows all 24 permutations of 1236.

1236 is the number of verses from the beginning of the Quran to 9:1. The 4^{th} group element is 1362 and 1362 is the number of verses from the beginning of the Quran to 9:127. The index of the composite 1362 is $1143 = 9 \times 127$. The 19^{th} group element is 6123 and 6123 is the number of verses from the beginning

Table 4.28: Permutation group elements of 1236 with their ascending positional indices

index	group element	index	group element
1	1236	13	3126
2	1263	14	3162
3	1326	15	3216
4	1362	16	3261
5	1623	17	3612
6	1632	18	3621
7	2136	19	6123
8	2163	20	6132
9	2316	21	6213
10	2361	22	6231
11	2613	23	6312
12	2631	24	6321

of the Quran to 96:19. Note, sura 96 was the first sura revealed, which makes 96:19 the 19^{th} verse revealed.

Recapping the above observations we can summarize;

- sura 13 has 43 verses
- sura 31 has 34 verses
- sura 36 is the 19^{th} initialed sura
- sura 43 has 89 verses
- the frequency of the initials in sura 43 is 368
- sura 43 is the 24^{th} initialed sura
- sura 43 is the 19^{th} initialed sura revealed
- the frequency of the initials in sura 30 is 1254

- sura 19 has 98 verses
- sura 9 has 127 verses
- the number of verses from the beginning of the Quran to 19:98 is 2346
- the number of verses from the beginning of the Quran to 9:1 is 1236
- the number of verses from the beginning of the Quran to 9:127 is 1362
- the number of verses from the beginning of the Quran to 96:19 is 6123

These are some of exampless of Ultimate Mathematics generating the Quran.

4.82 Ultimate Mathematics Generates Number of Initials and Verses in Suras 36 and 43

The 8^{th} prime number is 19 and the 8^{th} composite is 15 and $19 \times 15 = 285$ happens to be the number of frequencies of the letters ي (Y) and س (S) in sura 36 called يس, pronounced, YaSeen. The 8^{th} lonely prime is 83 and sura 36 has 83 verses. Note, sura 36 is the 19^{th} initialed sura in the Quran.

The 9^{th} prime number is 23 and the 9^{th} composite is 16 and $23 \times 16 = 368$ happens to be the number of frequencies of the letters ح (H) and م (M) in sura 43. The 9^{th} lonely prime is 89 and sura 43 has 89 verses. Note, sura 43 is the 19^{th} initialed sura revealed in the Quran.

4.83 Ultimate Mathematics Generates 19:98 and 20:135, as well as the Frequencies of Initials in Suras 10, 11, 29, 31 and 43

The 8^{th} and the 9^{th} individual twin primes are 29 and 31 which happen to be the 10^{th} and 11^{th} ordinary primes. The 10^{th} and the 11^{th} initialed suras in the

Quran are sura 19 and sura 20. The 8^{th} and 9^{th} TPCs are 72 and 102 which are the indices of composites 98 and 135. Chapters 19 and 20 have 98 and 135 verses, respectively.

Note, the 9^{th} lonely prime is 89 which is the 24^{th} ordinary prime. A concatenation of index-prime yields the number 2489. Both chapters 10 and 11 are initialed with الر (A.L.R.) and have the same frequencies of ا(A) + ل(L) + ر(R) = 2489 = 19 × 131. The 9^{th} prime 23 and the 9^{th} composite 16 are the factors of 368, which is the number of frequencies of initials حم (H.M.) in chapter 43. The 9^{th} individual twin prime is 31 and when we look into the number of initials الم (A.L.M.) in sura 31, we find that the frequencies of الم in 31 is 817 = 19 × 43. We further discover that the frequencies of the initials الم (A.L.M.) in sura 29 which is the 8^{th} individual twin prime is 1672. Note, 1672 + 817 = 2489 which is the number of frequencies of الر in suras 10 and 11.

4.84 Ultimate Mathematics Generates Quranic Parameters

We have learned so far that if we line up all primes and composites of various kinds, such as primes, composites, positionally additive/subtractive primes, twin prime pairs, exponents of Mersenne primes, Gaussian primes and so on, with the same positional rank or index, these numbers generate sura numbers with associated number of verses, as well as the frequency of number of initials in the Quran.

With this in mind, let us look at the 7^{th} such numbers. The 7^{th} prime is 17, the 7^{th} composite is 14, the 7^{th} prime plus composite with the same index is the 19^{th} prime and the 19^{th} composite, i.e., 67 + 30 = 97, the 7^{th} positionally

Table 4.29: Permutation group elements of 1247 with their ascending positional indices

index	group element	index	group element
1	1247	13	4127 (p)
2	1274	14	4172
3	1427 (p)	15	4217 (p)
4	1472	16	4271 (p)
5	1724	17	4712
6	1742	18	4721 (p)
7	2147	19	7124
8	2174	20	7142
9	2417 (p)	21	7214
10	2471	22	7241
11	2714	23	7412
12	2741 (p)	24	7421

additive prime is $24 + 89 = 113$, the 7^{th} twin prime pair are (59, 61), the 7^{th} TPC is 60, the 7^{th} Gaussian prime is 43, the 7^{th} individual twin prime is 19, and so is the 7^{th} exponent of Mersenne prime.

These numbers now generate various parameters of the Quran. 113 and 19 are the factors of composite 2147, i.e., $19 \times 113 = 2147$. 2147 is the number of frequencies of initials حم in the 7 حم (H.M.)-initialed suras 40 through 46. Table 4.29 shows all 24 permutations of 2147.

Note in table 4.29, 2147 is the 7^{th} permutation and there are 7 primes, denoted by (p). There are only two numbers in table 4.29 that are divisible of 19, and they are the 7^{th} and the 17^{th} group elements. Note, the 17^{th} prime is 17. The sum of these two numbers is;

$$2147 + 4712 = 6859 = 19 \times 19 \times 19. \tag{4.88}$$

The 19^{th} group element is 7124 and the index of this composite is 6211. Note

chapter 62 has 11 verses. Verse 71:24 is the 2698^{th} verse in the un-initialed suras and 2698 is the total number of frequency of the word اَللّٰه (Allah) or God in the Quran. Verse 71:24 is also the 1824^{th} verse revealed in the un-initialed suras and $1824 = 96 \times 19$ and sura 96 has 19 verses.

The 7^{th} twin prime pair is (59, 61) and the 7^{th} exponent of Mersenne prime is 19, as well as the 7^{th} individual twin prime, and $59 \times 19 = 1121$ is the number of initials in sura 40 through 42. The 7^{th} positionally subtractive prime is $53 - 16 = 37$ and sura 42 has 53 verses.

The 7^{th} initialed sura in the Quran is 13, and the first group element in table **??** is 1247, which is the index of composite 1482 and $1482 = 19 \times 78$ is the frequency of the initials اَلٓمٓرٰ (A.L.M.R.) in sura 13. Note, sura 13 is the 7^{th} initialed sura in the Quran. Furthermore, $1247 = 29 \times 43$ and sura 13 is the 29^{th} initialed sura revealed and sura 13 has 43 verses.

The 7^{th} composite is 14 and the 7^{th} twin prime pair is (59, 61) and sura 61 has 14 verses. The 7^{th} prime is 17 and the 7^{th} lonely prime is 79 and $17 \times 79 = 1343$ and sura 13 has 43 verses.

The 7^{th} prime partitionable into a prime plus a composite with the same index is the sum of the 19^{th} prime and the 19^{th} composite, i.e., $67 + 30 = 97$, and sura 67 has 30 verses. $19 \times 67 = 1273$ and 1273 is the number of frequency of the word اَللّٰه (Allah) or God from the beginning of the Quran to 9:127. The 1273^{rd} composite is 1514 and the 1514^{th} verse is 11:43 and $1143 = 9 \times 127$. Furthermore, 1143^{rd} composite is 1362 and 1362 is the number of verses from the beginning of the Quran to 9:127.

Focusing on prime, i.e., $67 + 30 = 97$, we find that $30 \times 19 = 570$ which is

the number of frequency of initials الٓمٓ (A.L.M.) in sura 32 and sura 32 has 30 verses.

The 7^{th} Gaussian prime is 43, the 7^{th} individual twin prime is 19 and $19 \times 43 = 817$ which is the number of frequency of the initials الٓمٓ (A.L.M.) in sura 31.

The 7^{th} positionally additive prime is $24 + 89 = 113$ and the frequency of the initials الٓرٰ (A.L.R.) in both suras 10 and 11 is 2489. Note, the 11^{th} prime is 31 and the 10^{th} prime is 29, and $2489 - 817 = 1672 = 19 \times 88$. It happens that 1672 is the frequency of the initials الٓمٓ (A.L.M.) in sura 29.

The 7^{th} Gaussian prime is 43, the 7^{th} individual twin prime is 19 and the 7^{th} positionally additive prime is $24 + 89 = 113$. Sura 43 has 89 verses and 43 is the 24^{th} initialed sura in the Quran and it is the 19^{th} initialed sura which was revealed. Furthermore, $19 \times 24 = 456$, and the index of composite 456 is 368 which happens to be the frequency of initials حٰمٓ (H.M.) in sura 43.

The 7^{th} prime partitionable into a prime plus a composite with the same index is the sum of the 19^{th} prime and the 19^{th} composite, i.e., $67 + 30 = 97$, and the 7^{th} positionally additive prime is $24 + 89 = 113$. Note, sura 89 has 30 verses. The 7^{th} TPC is 60 and sura 89 is the 60^{th} un-initialed sura in the Quran. Sura 30 has 60 verses and sura 89 has 30 verses.

The 7^{th} positionally additive prime is $24 + 89 = 113$ and the 7^{th} positionally subtractive prime is $53 - 16 = 37$. Sura 30 is the 16^{th} initialed sura and the 24^{th} initialed sura revealed.

The 7^{th} individual twin prime number is 19 and so is the exponent of the 7^{th} Mersenne prime. $7 \times 19 = 133$, which is the frequency of the initial ن in

sura 68 called "The Pen". Note, sura 68 is the the 29^{th} and therefore, the last initialed sura in the Quran.

Let us recap and see what Quranic parameters were generated.

- Sura 13 has 43 verses
- Sura 13 is the 7^{th} initialed sura
- Sura 13 is the 29^{th} initialed sura revealed
- The frequency of the initials in sura 13 is 1482
- The frequency of the initials in the 7 حم (H.M.)-initialed suras is 2147
- Sura 43 has 89 verses
- Sura 59 has 24 verses
- Sura 61 has 14 verses
- Sura 67 has 30 verses
- Sura 89 has 30 verses
- Sura 43 has 89 verses
- Sura 96 has 19 verses
- Sura 42 has 53 verses
- Sura 30 has 60 verses
- Sura 32 has 30 verses
- Sura 89 is the 60^{th} un-initialed sura

- Sura 30 is the 16^{th} initialed sura and the 24^{th} initialed sura revealed
- The frequency of the initials in sura 32 is 570
- The frequency of the initials in suras 10 and 11 is 2489
- The frequency of the initials in sura 31 is 817
- The frequency of the initials in sura 29 is 1672
- The frequency of the initials حم (H.M.) in suras 40 through 42 is 1121
- The frequency of the initials in sura 68 is 133
- Only chapters 40 through 46 can be the 7 حم-initialed suras in the Quran

These are some of the eternal generators of the Quran.

4.85 Ultimate Mathematics Generates more Quranic Parameters

Again lining up index 8 for primes, composites, twin primes, etc, we find that the 8^{th} prime is 19 and the 8^{th} composite is 15. These two numbers, 19 and 15 are factors of 285 which happens to be the frequency of يس in sura 36 named يس (Y.S.).

The 8^{th} positionally additive prime is 127 and the 8^{th} individual twin prime is 29. These two numbers are the factors of composite 3683, in other words, $127 \times 29 = 3683$. Note, sura 36 has 83 verses.

The 8^{th} TPC is 72 and the 72^{nd} composite is 98. Note, sura 98 has 8 verses. Since the 8^{th} prime is 19, then one concludes the fact that sura 19 has 98 verses.

The 8^{th} lonely prime is 83 and the arithmetic series of numbers from 1 through 8 is 36, i.e., $1+2+3+4+5+6+7+8=36$ and sura 83 has 36 verses.

The 8^{th} prime partitionable into a prime plus a composite with the same index is $71(20) + 32(20) = 103$ and the 8^{th} twin prime pair is (71, 73). Note, sura 73 has 20 verses.

The 8^{th} prime is 19 and the 8^{th} positionally subtractive prime is 43 and the 8^{th} exponent of Mersenne prime is 31. Note 19 and 43 are the prime factors of 817 which is the frequency of the initials الٓمٓ (A.L.M.) in sura 31.

The 8^{th} composite is 15 and the 8^{th} twin prime pair is (71, 73) and the 73^{rd} composite is 99 and sura 15 has 99 verses and sura 99 has 8 verses. Concatenation of number of verses in suras 19 and 15 yields $9899 = 521 \times 19$, where 9899 is the frequency of the initials الٓمٓ (A.L.M.) in sura 2. Note, 521 is the 98^{th} prime and 19 has 98 verses, and 19 is the 8^{th} prime and sura 98 has 8 verses.

Let us recap and see what Quranic parameters were generated.

- The frequency of the initials in sura 36 is 285
- The frequency of the initials in sura 31 is 817
- The frequency of the initials in sura 2 is 9899
- Sura 36 has 83 verses
- Sura 83 has 36 verses
- Sura 15 has 99 verses
- Sura 19 has 98 verses
- Sura 98 has 8 verses
- Sura 99 has 8 verses

- Sura 73 has 20 verses

These are some of the eternal generators of the Quran.

4.86 Ultimate Mathematics Generates more Quranic Parameters

We line up index 19 for primes, composites, twin primes, etc, we find that the 19^{th} prime is 67 and the 19^{th} composite is 30. These two numbers, 67 and 30 signify that sura 67 has 30 verses.

The 19^{th} positionally additive prime is 619 which is the sum of prime number 521 and its index 98. Here, 19 and 98 signify that sura 19 has 98 verses. Prime number 619 is the 114^{th} prime number and 114 is the number of suras in the Quran. Prime numbers 19 and 521 are the factors of 9899 which is the total frequency of the usage of the Arabic letters ا, ل and م (A, L and M) in sura 2, the first initialed sura in the Quran. The 8^{th} prime number is 19 and sura 98 has 8 verses.

The 19^{th} lonely prime is 223 and the 19^{th} individual twin prime is 109. These two primes are the 48^{th} and the 29^{th} prime numbers, respectively. We can easily verify that sura 48 has 29 verses.

The 19^{th} positionally subtractive prime is 373, i.e., $463 - 90 = 373$ and the 19^{th} composite is 30. The index of prime number 373 is 74 and verse 74:30 is the only verse in the Quran where the number 19 is mentioned. As for the relevance of 90 and 463, the 90^{th} twin prime pair are (3371, 3373), and we note that sura 33 has 73 verses.

The exponent of the 19^{th} Mersenne prime is 4253 and sura 42 has 53 verses.

The 19^{th} Mersenne prime has 1281 digits and the 1281^{st} verse in the un-initialed suras corresponds to the 2743^{rd} verse from the beginning of the Quran and 2743 is exactly the number of verses in the initialed suras in the Quran.

The 19^{th} Gaussian prime is 151 which is the 36^{th} prime and sura 36 is the 19^{th} initialed sura in the Quran. The 19^{th} twin prime pair is (281, 283). The three digits in 283 are the indices of primes 3, 19 and 5. These are the factors of 285, i.e., $3 \times 19 \times 5 = 285$ which is the the frequency of the usage of the Arabic letters ي and س (Y and S) in sura 36 called يس (pronounced "YaSeen"). As for the other prime number 281, its digits are the indices of the prime numbers 3, 19, and 2. These are the factors of composite 114, i.e., $3 \times 19 \times 2 = 114$ which is the number of suras in the Quran.

Let us recap and see what Quranic parameters were generated.

- The frequency of the initials in sura 36 is 285
- The frequency of the initials in sura 2 is 9899
- Sura 36 is the 19^{th} initialed sura
- Sura 19 has 98 verses
- Sura 98 has 8 verses
- Sura 48 has 29 verses
- The Quran has 114 suras
- Sura 42 has 53 verses
- There are 2743 verses in the initialed suras in the Quran

These are some of the eternal generators of the Quran.

4.87 Ultimate Mathematics Generates more Quranic Parameters

We line up index 6 for primes, composites, twin primes, etc, we find that the 6^{th} prime is 13, the 6^{th} composite is 12, the 6^{th} prime partitionable into a prime plus a composite with the same index is $61_{18} + 28_{18} = 89$, the 6^{th} positionally additive prime is $22 + 79 = 101$ and the 6^{th} positionally subtractive prime is $43 - 14 = 29$. We see that sura 43 has 89 verses.

The 6^{th} twin prime pair is (41, 43) and the frequency of initials حم (H.M.) in sura 41 is $18 \times 18 = 324$. The 13^{th} prime is 41 and the 13^{th} prime, partitionable into a prime plus a composite with the same index, is $157_{37} + 54_{37} = 211$ and 41 has 54 verses.

The 6^{th} prime is 13, the 6^{th} individual twin prime is 17 and the 6^{th} positionally additive prime is $22 + 79 = 101$ and $17 \times 79 = 1343$ and sura 13 has 43 verses.

The 6^{th} prime is 13 and the 6^{th} twin TPC are (1482, 1488) and the frequency of the initials الٓمٓر (A.L.M.R.) in sura 13 is 1482.

The 6^{th} prime, partitionable into a prime plus a composite with the same index, is $61_{18} + 28_{18} = 89$, and the 6^{th} positionally subtractive prime is $43 - 14 = 29$. Note, sura 61 has 14 verses and sura 43 has 89 verses.

The 6^{th} exponent of the Mersenne prime is 17 and so is the 6^{th} individual twin prime. The 6^{th} Gaussian prime is 31 and sura 31 is the 17^{th} initialed sura in the Quran.

The 13^{th} prime is 41 and the 13^{th} composite is 22. Sura 41 is the 22^{nd} initialed sura in the Quran.

The 6^{th} prime is 13 and the 6^{th} twin prime pair is (41, 43), and sura 13 has 43 verses. 13 and 43 are the prime factors of 559 which is a composite with the index $456 = 24 \times 19$. Sura 43 is the 24^{th} initialed sura in the Quran and it is the 19^{th} initialed sura revealed.

The index of composite 456 is 368 and 368 is the frequency of the initials حم (H.M.) in sura 43.

The number 559 is the index of composite $684 = 36 \times 19$ and sura 36 is the 19^{th} initialed sura in the Quran.

Let us recap and see what Quranic parameters were generated.

- The frequency of the initials in sura 41 is 324
- Sura 31 is the 17^{th} initialed sura
- Sura 41 is the 22^{nd} initialed sura
- Sura 13 has 43 verses
- The frequency of the initials in sura 13 is 1482
- Sura 41 has 54 verses
- Sura 61 has 14 verses
- Sura 43 is the 24^{th} initialed sura
- Sura 43 is the 19^{th} initialed sura revealed
- The frequency of the initials in sura 43 is 368
- Sura 36 is the 19^{th} initialed sura

These are some of the eternal generators of the Quran's Master Tablet.

Chapter 5

God's Law

5.1 A Closer Look

The mathematics described in chapter two and its manifestation in the form of a book called the Quran described in chapter four, serves as a strong motivation to read the Quran and see what it actually says. The following two chapters reveal a snapshot of what the Quran can teach us. A more detailed understanding of the Quran is up to the reader and would only be possible through a careful study of the Quran.

5.2 Equivalence

The harmony of nature portrays perfection and an inherent balance in its system. The mathematics, described in chapters two and four, are a testament to this phenomenon. The beauty of the universe stems from the fact that it seems a single law can describe it and that it is governed by mathematical equations. Mathematical equations describe every aspect of our world from the tiniest subatomic particle to galaxies, the universe and the much theorized multiverse. The question is as to why this is the case. The answer lies with

the title of this chapter and it is the balance that has to be preserved and the balance itself establishes the "law" for nature and thus its description with mathematical equations.

Looking at a mathematical equation, we immediately recognize that in order to preserve the equality, we must respect the fact that any mathematical operation on one side requires the exact same mathematical operation on the other side. For example in chemistry, a chemical equation must be "balanced" in order for the chemical reaction to take place in nature. Laws of physics described by equations consistently point to conservation rules. Energy must be conserved; momentum must be conserved; electric charge must be conserved and so on. These conservation laws indicate consistency in nature's behavior and imply that God's laws are eternal and that His system is immutable.

Equivalence or the balance inherent in nature also points to the fact that forces exerted by various objects on each other in the universe are independent of their size or magnitude. The Sun exerts the same amount of gravitational force on the Earth or other planets as the Earth does on the Sun or other planets on the Sun. As a matter of fact this balance has to be maintained at all times for the orbit of the Earth to be stable. This property of nature governed by mathematical equations indicates a fundamental law applying a universal justice and equality across the board regardless of apparent power or magnitude.

A very small minority, namely humans are also an integral part of nature and therefore are bound and governed by its laws. These laws were inspired by God after creation of the physical existence we witness at the present time. These laws based on mathematics dictates our daily interaction with the environment

around us and with each other. The best teacher for us is the example of the nature we live in. Let us look at nature and see how it behaves. The Quran is encouraging us to find out our place in the universe by examining nature and learn about its conviction as it exactly obeys the laws inspired in it by God.

22:18 - Do you not see that to God prostrates everyone in the skies and everyone on the land, and the Sun and the Moon and the stars and the mountains and the trees and the animals and many people? However, many others have truly deserved torment. And whomever God insults, as a consequence, no one would respect him. Indeed God does whatever He wills.

Or;

81:15 - I therefore swear by the planets,-

81:16 - -perfectly moving in their orbits.

These verses clearly point to the fact of absolute obedience of God's laws by the entities who submit to Him. The warning in verse 22:18 highlights the consequence of disobedience of God's laws is continuous suffering and agony. This is easy to understand that once God's law is broken and the equivalence is disturbed, God must bring order back by enforcing His laws which demand re-establishment of the "balance". We see this clearly from the following verses.

55:7 - And He raised the sky and established the balance.

55:8 - Absolutely, do not violate the balance.

55:9 - And set the scales equitably and do not disturb the balance.

God emphasizes the importance of the balance and how important it is not to violate it or disturb it. Another way of thinking about this is that disobedience of God's laws amounts to going against our own nature.

God's will is to give us absolute freedom to choose our path. He wants us to learn and challenges us to examine the world around us by acquiring knowledge and understanding of its inner secrets. We have the option to seek His help to get an understanding of the world or to use our own methods with total disregard to the source of knowledge. We can try them both and a fair-minded, objective person would come to the conclusion that true knowledge only comes from God.

He also augments the true knowledge with an important ingredient called wisdom. Wisdom is the ability to use knowledge in the right way and not abuse it to attain worldly gain and position and domination.

5.3 Heaven and Hell

God consistently warns people of the consequences awaiting them if they disturb His balance. Scriptures such as the Bible and the Quran narrate allegorically of what it was like before man set foot on this world. God tells Adam and his mate that they can have everything except the forbidden tree. Although, they did not respect God's advice, it shows in a bigger picture that humans were not ready to have everything at their disposal.

The balance or the equilibrium which God has created in this universe is therefore not to our liking. The Quran as well as the Bible teach us that we come from a place where we had everything at our disposal, except "this one tree", which we were not to approach, but because of our lack of wisdom, we did. We therefore are spoiled and are not used to being rejected. In other words, we are not used to an "equal and opposite reaction" to our action. The universe we

were projected onto has "equilibrium" as its law and we must become content and choose our ways and methods with knowledge and wisdom.

Heaven or Paradise is where those who pass the test have everything they wish for. But this immense power is only given to those who have the knowledge, the wisdom, the kindness, the love, the faithfulness and all those God-like attributes that God tells about in the scripture. The empowerment of a group is only contingent upon them totally submitting themselves to God. This is a state of existence called Heaven. Lack of power and lack of possessing God-like qualities is the state of existence called Hell.

5.4 Quran, a Fully Detailed Book

According to what we have witnessed so far, the Quran being a fully detailed book is a statement of the "Truth" made by the "Author" of the Quran, God. Our creator has sent us a book with all the knowledge and information we require to lead a successful existence here, now and forever. This is to make sure we have the resources to maintain respect for the balance that God has created and gain wisdom to choose our path wisely. In studying the Quran, one should not rush trying to explain it or understand it fully in a short period of time. Sincerity is the key. A sincere approach to the Quran would ensure the correct understanding of the Quran at the proper time. Ignoring God's assertion that He has explained everything in the Quran will propel one to follow other sources for information. One would resort to history for historical facts, and to scientific books to obtain knowledge in order to explain the Quran. When students go to school and study different subjects, they generally do not ask

if the subject taught by the teacher is correct or the author of the book they study has understood the subject at hand and has explained the subject matter properly. For example, if one does not understand "tensor algebra" or "group theory", he or she usually blames him/herself for not being able to understand it, in other words, the book is always right. This situation is usually reversed for the Quran, in particular, or scriptures in general which are always blamed for not being detailed in spite of God's assertion to the contrary. God, on the other hand tells us that He is the one who gives true knowledge and wisdom. Obviously Solomon did not go to Harvard Law School to become a judge and neither did Zul Qarnain study engineering at MIT to manufacture steel. Both these men were given the correct understanding by God, for they knew that the correct understanding comes from God to His obedient and appreciative servants. These men as well as other examples we witness in the Quran were always grateful to God for His blessings and recognized God as the source of true knowledge and wisdom.

The case of Zul Qarnain is particularly interesting because God, in a very simple language, tells us how to manufacture "steel". In sura 18 of the Quran, God narrates the history of Zul Qarnain and his journey to a place between the two palisades. He meets people whom he can hardly understand. These people complain to him about the Gog and the Magog and how corrupt they are. They ask him if he can make a barrier between them and the Gog and the Magog. In verse 95 he says; "my Lord has given me many bounties.", therefore he immediately refers to the source of the "giving", God. Invaluable information on how to make an alloy with iron and carbon follows in verse 18:96

and has been at peoples disposal for almost 1,400 years. Today, we know from the science of metallurgy how to produce steel by mixing iron and carbon.

5.5 Studying God's Signs

I have been explaining to the reader that the Quran is composed according to a mathematics which is beyond our understanding of math and yet easy to explain to anyone who is willing to pay a bit of attention. Some people may say they were never good at math, although many people are very good in balancing their checkbook and remember many phone numbers including area codes, their social security number, driver's license number and many more numbers. Numbers we are dealing with here in the Quran are small enough and God, in the Quran, is challenging us in 27:83-84 to spend some time and pay attention, study them and try to learn.

27:83 The day will come when we summon from every community a group who rejected our Signs, forcibly.

27:84 When they arrive, He will say, "you have rejected My Signs, before acquiring knowledge about them. Is this not what you did?"

5.6 Happiness, Now and Forever

A serious and sincere study of the Quran will increase our knowledge and add to our wisdom. The path ahead of us is formidable. It is not easy to maintain respect for the the equilibrium that God has created. As mentioned above, we are not used to the type of limits imposed on us by mathematical equations. In

other words, we do not like to be told "no". Overcoming this instinct takes time, perseverance and strength of character and we eventually realize that none are achievable without God's help. The helping hand cones from God in the form of acts of worship and performing good deeds.

5.7 Five Daily Contact Prayers; a Gift from God

One of the most important acts of worship is observing the صلوة, pronounced salaat, or the contact prayer. This is a mechanism by which we think about God and we thus avoid breaking His laws. Once we choose to submit to God, out of His Infinite Mercy he inspires us to perform good deeds, and observe the contact prayer and to give the cleansing charity (Quran, 21:73). God further tells us in the Quran that the contact prayers must be performed in specific times. There has been disagreement, historically, when these times are to be. God, in the Quran, is very clear about these times and mentions these times in a most specific way. Let us look at them very carefully. In 24:58, where God talks about others requesting permission to enter one's room at private moments in their daily lives, He, specifically, mentions two contact prayers by name, "Assalat-Al-fajr" (the dawn contact prayer) and "Assalat-Al-esha" (the contact prayer at the time of the night when there is no light, i.e., after the twilight is gone). Note here that God does not mention the so-called noon contact prayer, although, He mentions "noon". This is because, there is no so-called "noon prayer", since "noon" is not a period of time, but rather an instant in time, and obviously, we can not finish our contact prayer in an "instant". God, however, tells us in 17:78 to perform the contact prayers in the period of the "declining sun".

This period starts immediately after "noon". The same is true, for the so-called sunset prayer. Sunset, again, is an instant in time and not a period of time. God, therefore, appropriately has called this, in 11:114, as "Zolafan min-al-lail", which is the period of the night closer to the day or the period of night right after the sunset. God tells us about the "middle contact prayer" in 2:238. He tells us that we should observe the "contact prayers", which in Arabic refers to more than two, as well as the "middle prayer". This tells us that the number of the rest of the contact prayers has to be "even" and it has to be more than two, so that the middle contact prayer would be the third one and there will be at least two remaining. The "middle contact prayer" is usually due before sunset in a time known as the late afternoon or "asr".

The awesomeness of the Quran is highlighted in 59:21. This verse is shown below with its sequential position as 5145.

59:21 - Had We revealed this Quran to a mountain, you would have seen it humbling itself reverently out of fear of God. And these are examples that We cite for the people that they may think.

This verse is the key generator of the number of units of our daily contact prayers. The number 59 is a prime number and it is the 17^{th} prime number. The prime factors of the composite number 5145 are 3, 7, 7, 5, and 7. Furthermore the composite number 5145 is the index of composite 5924 and note that sura 59 has 24 verses. The index of composite 5145 is 4459 and note again that sura 44 has 59 verses. Therefore, the position of the above verse tells us that two suras in the Quran namely 44 and 59 have to have 59 and 24 verses, respectively. Since, 5145^{th} verse is 59:21, then, let us look at the number 5921. We note that

the factors of 5921 are 31 and 191. The indices of the primes 31 and 191 are 11 and 43. The number $1143 = 9 \times 127$ and it confirms that sura 9 has 127 verses. Moreover, the 5921^{st} (31×191) verse from the beginning of the Quran happens to be the 473^{rd} verse revealed. The number 473 can be written as $473 = 11 \times 43$. Now let us go back to the factors of 5145. They are; 3, 7, 7, 5, and 7. The indices of these prime numbers are 2, 4, 4, 3, and 4, which are the number of 17 units of صلوة, or contact prayers performed daily.

A legitimate question would be, why this specific order in writing the prime factors of composite 5145? The answer is that the number 37757 is equal to 17×2221. 17 being the number of units in daily contact prayers and 2221 is a prime and its index is the prime number 331 with an index of 67 which is another prime, and happens to be the 19^{th} prime. Furthermore, there are exactly 67 twin prime pairs before the lonely prime 2221. Note that 67 is exactly the number of times the word صلوة or contact prayer has been mentioned in the Quran. Note also that 2221 is the 198^{th} lonely prime and the index of composite 198 is $152 = 19 \times 8$. Again note that 19 is the 8^{th} prime number.

These are the result of the universal generators for the Quran according to the Ultimate Mathematics described in chapter two.

Chapter 6

Quran Description of Existence

There have been many theories describing where we come from and why we and, in general, things simply exist and the beginning and the end of our universe. A very powerful and fundamental fact stated in the revelation of the scriptures in general, and the Quran in particular, is the fact that creation began with different laws only known to God or the Creator. These laws, of course, were completely perfect and had no flaws. The existence we witness today, including our own, is the by-product of God's will according to the absolute truth. Laws governing our universe and the multiverse came into existence after the creation of the multiverse. These laws are different even in different layers of our own corner of the multiverse which we refer to as our universe. Let us see what the Quran says in the following segment from chapter 41, verses 9 through 13,

41:9 - Are you disbelieving in the One who created matter in two days and are you setting up likenesses for Him? Such is the Lord of the multiverse.

41:10 - And He placed stabilizers therein and blessed it and exactly measured its forces in four days, to equal the needs of those who seek it.

41:11 - Then He balanced the vacuum, and it was a smoke, He then said to it and to the matter; "Come into existence willingly or unwillingly." They said; we come willingly.

41:12 - He then completed them as seven vacua in two days, and He inspired in each vacuum its law. And We adorned the lowest vacuum with lamps, and placed in it guards. Such is the design of The Almighty, The All Knowing.

Therefore, we see from the above verses that God brought into existence the skies and the land or the old notion of Heavens and Earth or more accurately vacuum and matter and only then He established the laws governing them. In fact, verse 12 speaks the same language as the Book of Genesis in Torah, where it states that God said; "let there be light". Lamps are the first stars forming in the the lowest sky or vacuum and thereby creating the visible region of the electromagnetic spectrum known as light. Figure 6.1 shows a topological view of the seven layers mentioned in the Quran.

The way to think about the layers in this illustration is, for example, the innermost or the lowest sphere should be considered as the surface of a ball with two extra dimensions. This surface is where we exist and so do an estimated hundreds of billions of galaxies. Of course we cannot imagine a four dimensional surface, since we can only point in three dimensions, namely x, y, and z. For us there is no inside or outside of the sphere, we are bound to the surface only.
As we see there are no visible connections between two consecutive layers. As a matter of fact the layers are spanning in an extra infinite dimension, where its properties are completely unknown.

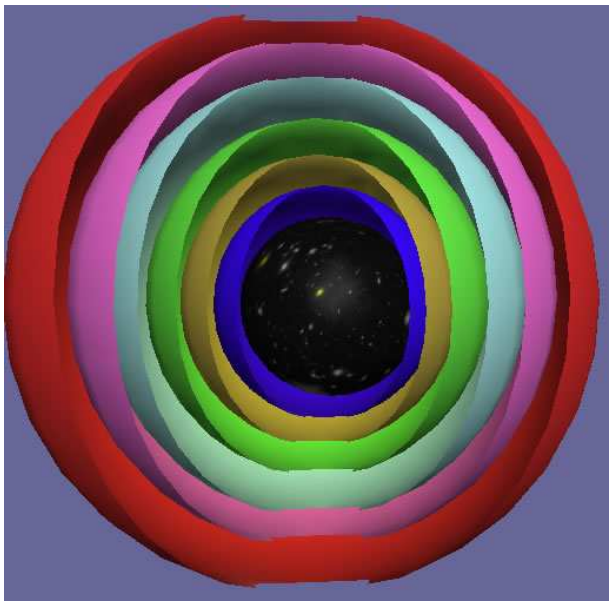

Figure 6.1: A topological view of the 7 layered universe

The formation of matter into galaxies, stars and planets teaches us a lot about the existence of a just, benevolent and generous Creator.

6.1 Justice

A simple study of the universe and everything it contains, tells us that mathematical equations govern the entire universe. For example, Newton's law of gravitation is a balancing act between two massive objects exerting equal and opposite force on one-another. The Sun and its planets are a good example, as the Sun force on each planet is the same as the force exerted by each planet on the sun.

This balancing act without an iota of violation, has kept the solar system together for billions of years and will keep together for years to come. A lesson to be learned in these mathematical equations, also governing every atom and

sub-atomic particle, points to a universal equilibrium or "justice". Although the Sun is the most massive object in our solar system, it never exerts more force on the planets than the planets, with much less mass, exert on the Sun. Consequently, the Sun never violates the balance just because it is "more" massive. We can think of truthfulness as a mathematical equation. If someone is honest and truthful, he or she respects the balance that God has created. Lies and deceitfulness create falsehood and violate the the equilibrium that God has created and maintains. The Quran talks about the balance that God has created and admonishes us not to violate the balance.

55:7 - And He raised the sky and established the balance.

55:8 - Absolutely, do not violate the balance.

55:9 - And set the scales equitably and do not disturb the balance.

Therefore, now it becomes clear to us what the scriptures refer to as "sin". Sin is disturbing God's balance, transgression of God's laws which are based on absolute justice.

6.2 Generosity

It is for our own well-being that we must obey God's natural laws and behave just like nature. Remember, we are part of nature and if we are in unison with nature, then our soul and our body are at peace with each other and happiness and contentment will follow. Accordingly, God shows us His signs and proves to us that He exists and that He is also Possessor of Infinite Generosity.

Let us look at the a picture of our solar system on many websites available on the Internet. We note that the Sun and the planets and their moons are all

spherical. The question is then why are they spherical? Why not cylindrical or cubical? Sphere obeys spherical symmetry providing infinitely manifold symmetry. In other words, looking at the Sun from any given direction yields the same view. This implies the unbiased nature of the law governing spherical symmetry. On the contrary, a cube has only a six-fold symmetry and therefore depends very much on the point of view of a given observer.

Another important and intriguing facet of sphere is its volume to surface ratio. To make this point, I choose three different geometrical objects, namely a sphere, a cylinder and a cube. The volume V of a sphere with radius r is;

$$V = \frac{4}{3}\pi r^3 \tag{6.1}$$

The surface area A is;

$$A = 4\pi r^2 \tag{6.2}$$

The volume to surface ratio is then;

$$\frac{V}{A} \approx 0.33r. \tag{6.3}$$

Now, let us look at a cylinder having the same height as its base diameter. This cylinder shape would give the optimum volume to surface ratio of any other kind of cylinder. Now we require the cylinder to have the same surface area of that of the above sphere.

$$A_{cyl} = 2\pi R(2R) + 2\pi R^2 = 6\pi R^2 \tag{6.4}$$

$$A_{cyl} = A_{sph} = 4\pi r^2 \tag{6.5}$$

$$6\pi R^2 = 4\pi r^2 \tag{6.6}$$

$$R = 0.816r. \tag{6.7}$$

$$\tag{6.8}$$

The volume of the cylinder with R = 0.816r and a height of 1.832r is;

$$V_{cyl} \approx 1.09\pi r^3. \tag{6.9}$$

The volume to surface ratio for the above cylinder is;

$$\frac{V_{cyl}}{A_{cyl}} \approx 0.27r \tag{6.10}$$

Now, we move to a cube of side a, with the same surface area of the sphere with radius r.

$$A_{cub} = 6a^2 \tag{6.11}$$

$$A_{cube} = A_{sph} = 4\pi r^2 \tag{6.12}$$

$$6a^2 = 4\pi r^2 \tag{6.13}$$

$$a \approx 1.45r. \tag{6.14}$$

$$\tag{6.15}$$

The volume to surface ratio for the above cube is;

$$\frac{V_{cube}}{A_{cube}} \approx 0.24r. \tag{6.16}$$

Inhabitants of the Earth live on the surface of the planet and their provision such as minerals, water, oil, coal, and nutrients are stored inside the inner volume, therefore, the ratios of the V/A is a measure of the provisions available for the inhabitants for a given geometry described above. We denote the V/A ratio by P for "provision". We then can compare P for the sphere with P's for the cylinder and the cube.

$$\frac{P_{cyl}}{P_{sph}} \approx 0.82 \tag{6.17}$$

A cylinder would have 18% less provision than a sphere.

$$\frac{P_{cube}}{P_{sph}} \approx 0.73 \tag{6.18}$$

A cube would provide 27% less provision than a sphere. These simple observations followed by very little efforts prove not only ultimate intelligence, but it also points to a spiritual aspect such as generosity, kindness, mercy, and grace.

6.2.1 More Generosity

Another look at the above ratios for the sphere, the cylinder and the cube reveals the fact that the provision P is a function of the radius r. Since, we proved the sphere provides the maximum provision, we look at all "terrestrial" planets and the moons in our solar system. We make this choice, because gas giants, namely Jupiter, Saturn, Uranus and Neptune have no solid surface to stand on.

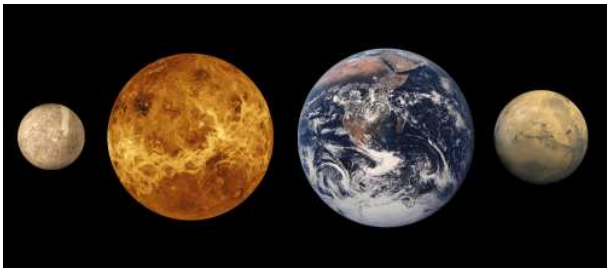

Figure 6.2: Images of the four innermost terrestrial planets

The following images of these planets and moons show that the Earth is the largest one of them all. According to the above equations, the Earth provides the maximum provision.[6][7]

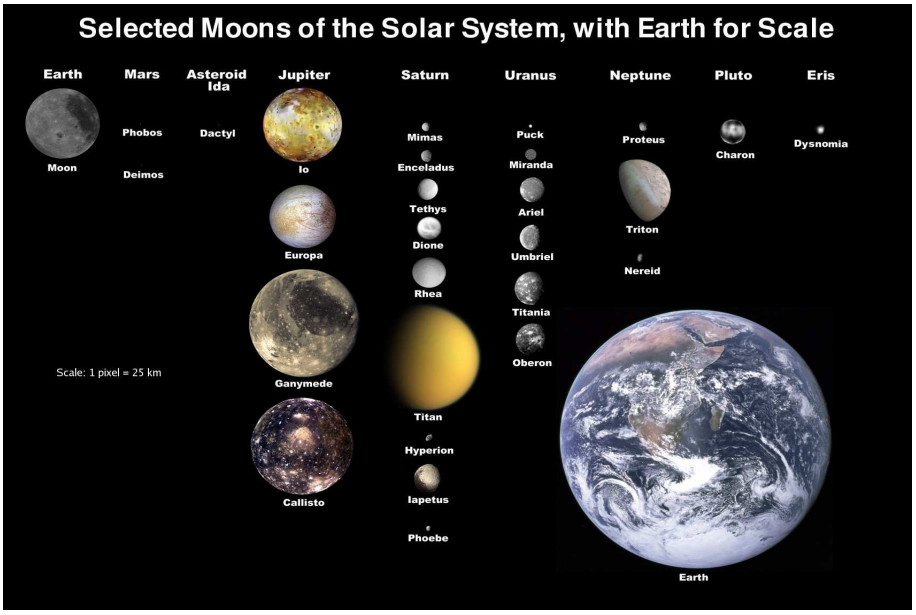

Figure 6.3: Images of major moons in the solar system and the Earth for comparison.

The population of the Earth is about 6.7 billion and the people live on the surface in homes defined by an area in square meters or square feet. Land to sea ratio for Earth is approximately 3/7 and this means the land masses on Earth

have a surface area of about 153,000,000 square kilometers (km), assuming an average Earth radius of 6,368 km. This yields a population density of ≈ 44 persons/km^2.

Now let us look at what if we were inhabiting Mars instead. The radius of Mars is 3,397 km and, for the same population density calculated above, the provision per person would be less by a factor of ≈ 1.87. This means that for the same area home on a Mars-size Earth, every creature would be poorer by almost a factor of 2! We never think about this and some do not care and continue to complain and be ungrateful! Therefore, this is not by accident that we happen to be here on Earth, the largest of all terrestrial planets and moons. This is a direct consequence of God's infinite generosity.

6.3 God's Laws

God created everything without any flaw and we are invited to look at the creation of The All Gracious over and over, only to be humbled and subdued by His flawless creation (Quran, 67:3, 67:4). As our knowledge of God's creation increases according to His will, we therefore become more and more responsible to behave in a more righteous way in order to please our Creator. God informs us in the Quran that when He commanded the skies and the land to come into existence, they were given the option to come "willingly" or "unwillingly", to which they responded that they will come "willingly" (Quran, 41:11). This shows that these awesome creations have completely submitted to God. God, then inspired the laws for every universe and these are the physical laws that we observe in nature today. We must remember that God's laws are perfect and

they must be models for us in order to be happy and content in this life as well as preparing ourselves for the hereafter.

As a physicist, studying and teaching properties of atoms, nuclei and particles, I have been always fascinated by the so-called "Pauli Exclusion Principle", which in essence, states that no two like objects can occupy the same space. God's laws tells us that "strength" of atoms, nuclei and particles as a community existing in harmony is because of their internal differences. Let me explain how. The hydrogen atom is the simplest atom in the universe. It contains one proton and one electron. If one is to make a helium atom, we have to have two protons in the nucleus and two electrons. First, we investigate the second electron. The second electron occupying the same orbital cannot be exactly like the first electron and has to be different. The second electron must possess the opposite "spin" in order to be able to form the Helium atom. Now let us look at the nucleus. Remember that we need two protons to make the nucleus of the Helium atom. One can not put two protons even with opposite spins in the nucleus, we must "include" a second particle called "neutron" in order for the nucleus "community" to survive. Neutrons are very different from protons by not having any electrical charge. It turns out that the most stable Helium nucleus must have two protons and two neutrons. If we compare the strength of the nucleus to that of the atom, we note that the nuclear strength is millions of times greater than that of the atom. If we go one step further inside the proton or the neutron, we find even smaller objects, called quarks. We find that there are three quarks inside the proton. Now this time, it is not enough only for the spins and the electric charges to be different, but the

quarks must possess different "color" and "flavor", in order to form a "strong", and "harmonious" community called the proton.

Let us see how strong this community is. This time we can not compare to the strength of the nucleus, since the strength is so high that no free quark has ever been observed. Why all these differences? It turns out that such an arrangement of "unlike" objects as building blocks for the entire universe is the most economical way of construction of all things. This is why God does not love wastefulness and He warns us about not being wasteful. We must remember that all these particles are constituents of our universe including our physical bodies. These objects have fully submitted to God's laws. This is how God created His colorful creation. He requires differences to be the source of strength and beauty.

We humans always complain about our misfortune and we seldom conform to God's laws. How can we be happy and prosperous outside God's laws? People segregate themselves according to class, race, color, and any other differences small or large, while as we just noted, God has decreed integration. Millions of people are killed and maimed because people do not like the way God has created us. These are the objectors and God has decreed "SUBMISSION" as a requirement for all the people. The problem of objection to God's system not only brings us misery in this temporary life, but it will forever buy us the eternal agony of being eliminated from God's kingdom. God describes this state of existence as "Hell".

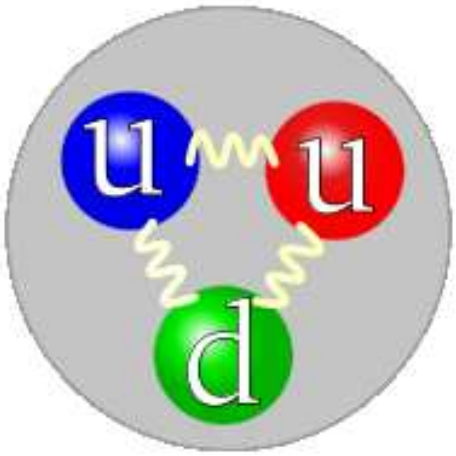

Figure 6.4: The structure of the proton.

6.3.1 Building blocks of matter

The smallest and heaviest building block of matter is the nucleus of the H-atom or the proton. As far as we know, protons are stable and do not decay. Dedicated experiments such as Super-K [8] have measured a lower limit of the proton lifetime to be 8.2×10^{33} years. This is 10^{20} larger than the estimated age of the universe! Note the above number for proton lifetime is simply a lower limit and no proton decay has ever been observed.

Figure 6.4 shows the inner structure of the protons. The objects designated as "u" (up), "u" and "d" (down) are called quarks. Each quark carries a fraction of the electric charge of the proton. The u-quark has +2/3e and the d-quark has -1/3/e. Therefore, the charge of a proton is $\frac{2}{3}e + \frac{2}{3}e - \frac{1}{3}e = +e$. The wavy lines connecting the quarks are symbolizing the interaction among the quarks.

The force binding the proton together is referred to as the "color" force. It is transmitted by a particle called the "gluon" which actually carries a given color. The "color" force is the strongest force in nature. As a matter of fact, it is so strong that no free quark has ever been observed. The quarks are eternally confined inside the proton. In particle physics this phenomena is called "quark confinement".

The color force has two components;

$$V_c = -\frac{4}{3}\frac{a_s}{r} + kr. \tag{6.19}$$

The first term in the above equation makes sure that quarks always keep a minimum distance from each other. This is called asymptotic freedom. The second term ensures quark confinement. This balance is maintained in a sphere with a radius of 0.875 fm (Fermi) or femtometer. One fm is $10^{-}15$ of a meter.

The colors of the quarks "MUST" be different. As shown in figure 6.4, we must have a "red" quark, a "blue" quark and a "green" quark. This ensures that a proton and all its hadronic siblings, such as neutron, pions and kaons are "colorless". As mentioned above, the particle mediating the color force also carries a color charge, thus, quarks continuously change their color.

This is how the basic element of our existence is put together to ensure our creation and survival.

6.3.2 A lesson to be learned

Let us apply the lesson of the proton with its community of quarks to our social problems. Remember, the proton and its quarks are completely submitting to

God and have come into existence with absolutely no reluctance or objection to God's system. We have ascertained that the proton community is the most tightly bound community ever. But why?

We observe that the quarks must be different. In other words, we CANNOT put in three red or blue or green quarks inside the proton; it would not bind. The color force ensures an "affinity" between the quarks of different color by not letting them to get too far from one-another, i.e., confinement. It also ensures that they respect each other's territory by imposing the "asymptotic freedom". Quarks do not care about their color by continuously changing their color, thus having no bias to a specific color. These are natural laws inspired by God to maintain the existence of everything, including us.

Now let us see how we reflect upon these natural laws inspired by God. We prefer one color over another. We want to mingle with our own kind. We do not respect territories of others and like to aggress against them. These are unnatural behaviors and are against God's natural laws. If one has tendencies of aggression, prejudice, racism, and selfishness, then he or she would be at a constant war with his or her body which has absolutely submitted to God. This is how unhappiness, misery, fear, depression, and suspicion takes over an individual or a people.

6.3.3 Heaven or Hell

The state of mind described in the above section, has a frightening consequence. We noted the lifetime of a proton is greater than $\approx 10^{34}$ years. The laws inspired by God are absolutely perfect and are enforced. Imagine, a proton containing three individuals with different racial, cultural, or traditional backgrounds.

These three individuals, according to their state of mind are either submitters to God or objectors to Him, they will be either in Heaven or in Hell, all depending on their state of mind. Remember there is no way out. Let us see what the Quran describes Hell to be like;

22:21 – And they will be confined in iron pots.

22:22 – Every time they try to get out because of the misery, they will be returned to it and taste more of the suffering of the inferno.

The concept of Hell must NOT be taken, as some may think to portray God as a mean and vindictive god, but as a god who has created perfect laws and He is the one who holds and binds all things according to the truth and every other opinion, not according to His laws, is false and is doomed to fail. God describes the situation to us in the Quran.

35:41 - Surely, God holds the skies and the land, lest they will vanish. They would certainly vanish if anyone else besides him held them. Indeed He is Tolerant, All Forgiving.

He, therefore, wants us to learn about His system and submit to Him, gain wisdom, suppress our worldly desires and attain peace and harmony for an eternal existence.

6.4 "God Alone"

The simple statement of God Alone implies a system having a single driving force and this is in complete agreement with the way nature works. This is also the "natural" instinct that God has put into our system (Quran, 30:30) and opposing God's system brings unhappiness and would have disastrous

consequences to our existence now and forever. Quran clearly emphasizes this over and over. As we have seen in Chapter 4, these are not unsubstantiated and hollow statements, but are supported by awesome mathematical proofs which render this fascinating book, the Quran, absolutely infallible.

6.5 Commemorate God Frequently, Call Him with His Most Beautiful Names

God teaches us what we do not know (Quran, 96:5). He is our Creator and He knows our innermost thoughts. He has created us with the natural instinct of monotheism (Quran, 30:30). Happiness in this life and closeness to God in the hereafter requires that we go along with God's system or in other words go along with our own nature. The more we obey God, the happier, and the more successful we will be and will be in peace and harmony with God's creation. Let us think about God's laws of the physical universe. Why is it that we can build faster planes, better cars, better computers, faster and more efficient rockets and spaceships and submarines? The answer is, because we are being taught by God how to obey His laws better and better. God's law for our success here in this world as well as the hereafter is very simple and He is telling us that "There is no god except God". We have two options given to us by God, one is to accept this and second is to subscribe to conjecture and reject this truth and do not abandon other gods. The first option brings prosperity and peace of mind and the second option will direct us to Hell as an eternal abode, as it was described in the above sections.

Many people choose the second option and we see them every day, commemorating others besides God and asking for help from others besides

God. They even go further to assign a son for God, an unsubstantiated claim. It is below God's Dignity to beget a son (Quran, 19:92). God is the Creator of the skies and the land, He is the Creator of what we see and what we do not see. We must resist these temptations by seeking refuge in God. The Quran, like previous scriptures the Old and the New Testaments, repeatedly warns of an entity called Satan. Satan or the Devil is determined to prove God wrong. God reminds us in the Quran not to take the Devil's side for he is our most ardent enemy. Quran, therefore, encourages us to worship God Alone, and not to set up partners for Him. The function of the Quran is to take us out of the darkness into the light (Quran, 14:1).

God introduces Himself to us in the Quran and tells us who He is. He tells us that the Quran is "complete and fully detailed". He tells us that we should call God with the names He calls Himself in the Quran (Quran, 7:180). Calling God "akbar", meaning "greater" which is not one of His names, used in the popular phrase such as "Allaho akbar" (God is greater) is opposing the word of God, as it is stated in 7:180. One also should remember that if an attribute of God is not in the Quran, then it is simply not one of His attributes. God calls Himself الكَبير (Al-Kabeer), meaning The All Magnificent.

6.6 Wives are Assigned Wages

There are traditions in every society and people practice them without ever questioning their source or their validity. These traditions over thousands of years have taken the form of "culture" and are used as laws or accepted norm in different societies. A people having the same culture usually look upon others

who have a different culture as inferior. Some of these cultural and traditional behaviors are so deeply rooted that they often replace God's laws. Once this blind replacement of God's laws with man-made traditions is practiced, misery and unhappiness follow.

One such disobedience of God's laws is ignoring His laws in the case of marriage. If we look in the Quran, we never find the word "dowry" in the Arabic text. However, God is the protector of people, and He knows that male-dominated societies abuse women's right. It is customary, and has been for thousands of years to have a pre-nuptial agreement, called "mahr" never mentioned in the Quran, when a man and a woman get married. God knows that this is no more than a lip-service and does not give women economic freedom in the form "liquid asset" and women will be slaves to the will of their husbands for the entire duration of their married life.

God, therefore, uses the word أَجورهنَّ "Ujoorahunna", which simply translates to "their wages" and not "their due dowries" as it is traditionally translated. God wants to free women from traditions, frequently designed by men who did not have faith in God. The word "housewife" has been used and is used as a term meaning the lowest class of women, whom by the definition of modern societies, are incapable of doing any other form of useful work and that is why they are simply "housewives". These traditions are designed to enslave women and to take all economic freedom away from them. This is exactly why in today's societies women have to get out there and work for economic independence. Housewives provide services that - as a rule - cannot be provided by a single individual. They cook, do the laundry, take care of the children, clean

the house, run errands, shuttle the children around, do the grocery shopping, and provide clean and divinely approved love for their husbands. For these services provided all year round with no vacation, they get absolutely "nothing". One has to think how much would it cost if all these services were to be bought from outside. Women often are the objects of insult and bodily harm by their husbands. This is their wage for a selfless service provided at home.

Note the wage is the wife's "money" and cannot be used for grocery shopping or other household necessities. This is to give some dignity to women by providing them with liquid asset to spend it as they wish, with no supervision.

6.7 The Meaning of أَرض "Al-Ardh" in the Quran

God created in His Infinite Wisdom the Heavens and the Earth according to a perfect design. God tells us that the skies and the land were one solid mass and He separated them. God tells that His "land" is spacious, therefore, we should worship Him alone. He also tells us that He created all the living things from water. After God has increased our knowledge through the Hubble telescope and new information from the Mars lander and the evidence of ice on the moon, we realize that God has stored provisions for humans throughout the universe and it is not limited to Earth as we wrongly believed. Our galaxy, the Milky Way, has a diameter of 100,000 light years. There is news that a smaller galaxy called Sagittarius Dwarf, about a tenth of the Milky Way is in a state of collision with our galaxy. Do not be alarmed, it takes 100,000 years to travel from one end of the Milky Way to the other end, if one goes at the speed of light. There are more than two hundred billion stars in our galaxy and we have information

that planets like Earth and Mars revolving around them. We already know that there is water on Mars, and God has given us the know-how to make a planet like Mars habitable or terraform for ourselves. God also talks about mountains, and we know that mountains are not unique to Earth and it is a feature of the rocky planets and their moons. God tells us that all mountains will be wiped out, when the cosmos expires. He has created us from dust and we know that there has been exchanges between different bodies in the universe. In other words, we are created from "star dust".

Also an alternate understating of the skies and the land is that they really mean "vacua" and "matter". This understanding can equally be valid and it shines a different light of our understating of the Quran.

6.8 Creating a god

God repeatedly commands us to read His Book, the Quran. This is a Mercy from God that He has sent down the Quran to us to point out and refer to God's word and warn the people from the evils of infidelity and setting up partners for God. To the majority of people God is a mystery. Books have been written and billions of dollars or other currencies have been spent and are being spent by ignorant individuals to explain who God is and what His relation is to His creation. Unfortunately, the god being introduced in man-made books, and sought by many people is a creation of the mind and has nothing to do with God, Creator of all things. I emphasize that the Quran describes its Author, God, in a fully detailed way. This is an assertion by God, Himself that the Quran is complete and fully detailed. The question remains; do we believe when God

makes such a statement of truth or do we continue to avoid these Quranic facts and follow conjectures? Where else do we find God being described as He is in the Quran? Do we have another book where we can find answers to questions we have? Describing God, without being mindful of the Quran will lead us astray and eventually we will create a god for ourselves compatible with our wishes or we go so far astray as to ask questions in our mind about God that are baseless and could render us completely unfaithful.

The key to understanding God is to refer to the Quran and learn about His Most Beautiful Names. These are Names befitting God since He has chosen them as His attributes and who knows God better than God? People have tried to be "nice" and "respectful" to God by calling Him the father. According to the Quran, fatherhood for God is a falsehood and it is below God's dignity. Remember that one of God's attribute or Most Beautiful Names is اَلمتكبر pronounced "Al-Mutekabbir" meaning "The All Dignified" or the one who reflects His Greatness in everything He does. Some people who have a human concept of God, dwell in the idea of who created God. Since humans and everything we see are created, they expect God to be created as well. God informs us in the Quran that He is the Creator, He creates what He wills and what we do not know. Remember, the law of equilibrium, created by God for us in this universe, requires conservation laws. This is why we like to have offspring, so we can leave our footprint. These laws do not exist for God. God does what He will with no resistance to His will.

Reading the Quran from cover to cover and reading it as much as you can is the key (Quran, 73:2). The Quran tells us to seek refuge in God from Satan the

rejected, when we start reading the Quran (Quran, 16:98). We should not read the Quran for the sake of finding answers to our questions by referring to a part or a specific verse in the Quran. This is the way of those who are impatient and God tells us He is with those who wait. If we do not understand a verse in the Quran, we should be patient; God reveals the understanding of His verses at certain times. Had He revealed it above and beyond our understanding, it would have been harmful to us (Quran, 5:101).

6.9 God's Forgiveness After Death

God repeatedly informs us that He forgives all sins except for those who set up partners for Him and die with such a conviction. The process of forgiveness is done by God on the Day of Judgment for the people who seemingly do not deserve it, but God's forgiveness is ever-expanding and there is no stopping it. We learn from the Quran that this process is initiated by God when we humble ourselves, acknowledge our mistakes and ask God for forgiveness. God, then opens up the gates of His infinite blessings and forgives us. This process, according to the Quran will not be exclusive to this world and reaches beyond this worldly life to after our death. This may come as a shock to some people. However, God tells us that there will be a lot of surprised individuals in Hell who will ask, where are those whom we deemed wicked?

God informs us about men in a place called Purgatory, who recognize people in Heaven and in Hell by their looks and ask God not to place them in Hell. God answers their call. God wants us to stay close to Him in this world and to not drift away so that our hearts harden and we cannot remember God and

are unable to invoke His name. Once the heart hardens even harder than rock, then there is no escape and eternal suffering will be with individuals having such hearts. Lessons from the Quran to be learned are; to stay close to God and take Him as our friend and ally. Remember that we have no "true" friend, except God. When we are dead and gone, our closest friends and relatives forget about us, but God remembers us and cares for us and does this with no conditions or self interest. God's love for us is absolutely unconditional, unlike the so-called human love that comes with strings attached. We should take advantage of His infinite grace and open our heart to Him and ask Him to help us in all our tasks. This brings humility to our hearts and keeps us with God throughout our lives and in the hereafter for eternity.

Chapter 7

Conclusions

By now the reader has probably come to several conclusions regarding the materials presented in this book. Various conclusions may have to do with cultural and religious background of the reader. However, there are a few points, I would like to make that are undeniably factual and must be taken seriously and studied.

The formidability of the mathematics in this book is unquestionably and unequivocally overwhelming and opens up a new window to the study of numbers and the science of number theory which has not been seen or studied before. The fact that Quranic parameters are generated with this mathematics deserves further scrutiny and attention and may lead to new findings in number theory as well as a better understanding of the universe.

Keeping these points in mind, we should then consider the possibility that a book which is a literary manifestation of such a mathematics should be authentic and the materials presented in the book must be true. Given this assumption, we then must proceed to make a decision as to how we should deal with it.

Several options are at our disposal. We just may choose to ignore it, to

study it, or try to prove it wrong. In fact these options have been pointed out in the Quran. If we ignore it, we should remember that the idea will not go away and it will persist and grow. If we study it, it would be the best and if we challenge its authenticity, we would encounter the insurmountable task of how to deal with the mathematics.

Ignoring or challenging the book's authenticity does not negate the fact that the mathematics, which I have referred to as Ultimate Mathematics will not be changed no matter what happens to us, to the Earth, to the Solar System, to the Milky Way Galaxy, or to the entire Universe. Numbers pre-existed our material existence and will outlast our demise and disappearance.

My own recommendation is therefore to study and try to learn from it. I did study it and I learned a lot. Although, I am a scientist and more specifically a physicist, I am not a number theorist, but I can say, without a doubt, that the number theory presented in this book is well beyond the capability of any number theorist and beyond the capability of mankind now and in the future.

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VITA

Ali R. Fazely was born in the city of Mashhad, Iran on the 29^{th} day of September, 1951. He graduated from High School in the same city in 1970. He entered Oklahoma State University, where he received the degree of Bachelor of Science in Mechanical Engineering in 1975. In 1977, he received a Master of Science degree in Mechanical Engineering also from Oklahoma State University. In 1980, he received a Master of Arts in Physics from Kent State University. He received his Ph.D. in Experimental Intermediate Nuclear Physics from Kent State University in 1982. After a brief stay as a postdoctoral researcher at Kent, he accepted a postdoctoral position at the Louisiana State University in February 1983. He participated in several Nuclear and Particle Physics experiments at the Los Alamos National Laboratory as a participant and as a spokesperson, where he was a visiting scientist from LSU between 1984 and 1990. In 1990, he moved back to LSU as a Research Assistant Professor and in 1991, he accepted an Associate Professor position at Southern University where he established the High Energy and Astrophysics Group. At the present time, he is a professor of Physics at Southern and is involved in neutrino astronomy with the IceCube detector at the South Pole. His interest is to study the structure of the universe using neutrinos as cosmic messengers and various properties of

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