Section Zero:
"Prologue"

This introduction to quantum mathematics is a highly abbreviated and slightly updated version of my previous book, "The Big Book of Quantum Mathematics", which is linked to as a reference throughout this book. In this book, we will examine the specifics of the various interactions which are possible between the numbers 1-9 via the addition and subtraction functions, which will allow us to gain an understanding of the three overall forms of charge which all numbers possess. As we progress, we will come to find that this trinity of charges involves three unique overall forms of charge, each of which is comprised of its own unique trinity of charges. Once we become familiar with the various forms of charge which numbers possess, we will move on to an examination of the various forms of anti-charge which negative numbers possess. In time, we will come to view the numbers as quanta, eventually coming to view them as particles, before finally coming to see how quantum mathematics causes numbers to group into a unique form of octaves, which will lead us into a brief comparison between quantum mathematics and the standard model of physics.

We will begin with the fact that quantum mathematics uses a digital form of compression which involves the condensation of multiple-digit numbers down to their single-digit value using basic addition, as can be seen in the arbitrary examples which are shown below.

17 has a condensed value of 8, in that 1+7=8
4984 has a condensed value of 7, in that 4+9+8+4=25, and 2+5=7
.5847 has a condensed value of 6, in that 5+8+4+7=24, and 2+4=6

The method of condensation which is explained above can be used on any multiple-digit or decimal number in existence to determine its archetypal (single-digit) value, which will be referred to as the "condensed value", or the "quality" of the number. Throughout this book, most of the multiple-digit numbers which we encounter will immediately be condensed down to their single-digit value, as it is exclusively their quality which we will be working with. This is due to the fact that condensive base-ten mathematics, which we will be referring to throughout as "quantum mathematics", causes numbers to group into ten-member octaves, which causes repetitive, predictable behavior, as is shown below.

```
1  2  3  4  5  6  7  8  9  1  2  3  4  5  6  7  8  9  1  2  3  4  5  6  7  8  9...  - condensed values
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27... - non-condensed values
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Above, we can see that while the non-condensed values increase to infinity, the condensed values form infinitely repeating octaves, with this behavior being similar to that which can be found in the electromagnetic spectrum and the musical scale. (It should be noted at this point that a ten-number quantum mathematical octave differs somewhat from a traditional eight-note musical octave, whose first and last frequencies have a 1:2 ratio. The term "octave" has been chosen in order to indicate the repetitive nature of the condensed values of the numbers, as well as the behavioral similarity which they display in relation to the musical scale, as will be explained in section seven of this book.)

This method of condensation allows us a total of nine numbers which we can work with, these being the numbers 1-9, with the 9 also acting as the 0, as will be explained in section seven. These numbers will be referred to individually as the "base numbers", and collectively as the "base set". These nine numbers all possess an inherent positive base charge, which is due to the fact that they are all positive numbers in the traditional sense of the term (with the exception of the 0 aspect of the 9/0 unity, which possesses a neutral base charge, as will be explained in section four). Base charge involves a trinity of charges, these being positive base charge, negative base charge, and neutral base charge, with these three forms of base charge behaving in a similar manner to the charges which are possessed by traditional positive, negative, and neutral numbers (with the 0 considered to be a neutral number). As was mentioned a moment ago, each of the base numbers possesses three overall forms of charge, each of which involves a unique trinity of charges, and as is the case in relation to base charge, each of these individual trinities of charge involves a positive/negative polarity along with an accompanying neutrality, all of which will be explained more thoroughly as we progress.

Another simple example of the patterned behavior which quantum mathematics draws out of the numbers involves the infinitely repeating pattern which is displayed by the condensed values of the products which are yielded by a simple doubling pattern, as is shown below.

	1(1)
1 X 2 =	2(2)
2 X 2 =	4(4)
4 X 2 =	8(8)
8 X 2 =	16(7)
16 X 2 =	32(5)
32 X 2 =	64(1)
64 X 2 =	128(2)
128 X 2 =	256(4)
256 X 2 =	512(8)
512 X 2 =	1024(7)
1024 X 2 =	2048(5)

Above, we can see that multiplying the 1 repeatedly by the 2 yields a series of solution numbers which condense to a repeating 1,2,4,8,7,5 pattern. In this example, the condensed values are shown in parentheses after the non-condensed values of the solution numbers, as will be the case throughout this book (in this particular example, the condensed values are all highlighted arbitrarily in red). This 1,2,4,8,7,5 pattern repeats to infinity, in that "2048 X 2 = 4096(1)", "4096 X 2 = 8192(2)", "8192 X 2 = 16,384(4)", etc..

While a reversed 1,2,4,8,7,5 pattern is displayed by the condensed values of the quotients which are yielded by a simple halving pattern, as is shown below.

	1(1)
1 / 2 =	.5(5)
.5 / 2 =	.25(7)
.25 / 2 =	.125(8)
.125 / 2 =	.0625(4)
.0625 / 2 =	.03125(2)
.03125 / 2 =	.015625(1)
.015625 / 2 =	.0078125(5)
.0078125 / 2 =	.00390625(7)
.00390625 / 2 =	.001953125(8)
.001953125 / 2 =	.0009765625(4)
.0009765625 / 2 =	.00048828125(2)
.00048828125 / 2 =	.000244140625(1)

Above, we can see that disregarding the initial whole number 1, the condensed values of the solution numbers form a repeating 5,7,8,4,2,1 pattern, with this mirrored 1,2,4,8,7,5 pattern also repeating to infinity. (To clarify, the term "mirrored" will be used throughout this book in reference to any form of reversal or opposition.)

The previous two charts involve our first example of the base numbers grouping by their behavior, in that the behavior which is seen above involves the 1, the 2, the 4, the 5, the 7, and the 8, and is therefore exclusive of the 3, the 6, and the 9, which instead display their own patterned behavior when they are repeatedly doubled, as is shown in the chart below, in which the condensed values are again highlighted arbitrarily in red.

3	6	9
3X2= 6(6)	6X2= 12(3)	9X2= 18(9)
6X2= 12(3)	12X2= 24(6)	18X2= 36(9)
12X2= 24(6)	24X2= 48(3)	36X2= 72(9)
24X2= 48(3)	48X2= 96(6)	72X2=144(9)
48X2= 96(6)	96X2=192(3)	144X2=288(9)
96X2=192(3)	192X2=384(6)	288X2=576(9)

Above, we can see that repeated doubling causes the 3 to yield solution numbers whose condensed values form a 6,3 pattern, the 6 to yield solution numbers whose condensed values form a mirrored 3,6 pattern, and the 9 to yield solution numbers which condense exclusively to the 9, with all three of these patterns repeating to infinity. (All of these behaviors also persist in relation to halving patterns, for example 3/2=1.5(6), 1.5/2=.75(3), .75/2=.375(6), etc..)

These various doubling and halving patterns are our first indication that the base numbers maintain relationships between one another, in that the 1 yields doubling and halving patterns which involve itself, along with the 2, the 4, the 8, the 7, and the 5, while the 3, the 6 and the 9 yield doubling and halving patterns which involve the 3, the 6, and the 9. This behavior is indicative of the fact that the base set is comprised of two core groups, these being the 1,2,4,8,7,5 core group, and the 3,6,9 core group. The members of the 1,2,4,8,7,5 core group display a variety of behaviors and characteristics which are unique from those which are displayed by the 3,6,9 core group members, as is seen throughout "The Big Book of Quantum Mathematics", and which will also be seen as we progress.

While in addition to the two core groups, the nine base numbers can also be separated into three unique family groups, these being the 1,4,7, 2,5,8, and 3,6,9 family groups, and the family group membership of each number is indicative of the inherent color charge which is possessed by that particular number, with the 1,4,7 family group members all possessing a green charge, the 2,5,8 family group members all possessing a red charge, and the 3,6,9 family group members all possessing a blue charge. The 1,4,7 and 2,5,8 family groups maintain a polarity between one another, while as a form of neutrality, the 3,6,9 family group acts as its own polar, as is briefly explained in "Chapter Zero: Prologue", and as will also be seen throughout this book. (To clarify, the 3, the 6, and the 9 can collectively be refered to as either the "3,6,9 family group" or the "3,6,9 core group", though the difference is purely semantic.)

Green charge, red charge, and blue charge are the three possible forms of color charge which can be possessed by the base numbers, with these three forms of color charge acting as positive, negative, and neutral, respectively. These designations of positive, negative, and neutral only apply in relation to color charge, and are independent of the base charge or reactive charge of a number, as is explained in "Quantum Mathematics and the Standard Model of Physics Part Four: 'An Examination of the Four Functions' ". Color charge is immutable, which means that the only manner in which a number can change its color charge is by becoming a different number which possesses one of the alternate color charges. While the only manner in which a number can become a different number is through an interaction with another number via a mathematical function, as will be explained in the next section.

Section One:
"Color Charge"

In this section, we will examine the concept of color charge. We will begin by examining the various behaviors which color charge displays in relation to the addition function, starting with a chart that contains all of the additive interactions which are possible between the base numbers. This chart is shown below, with the additive interactions separated into groups based on the family group membership of the addends, and with the numbers all highlighted in a color charge color code, which means that the 1,4,7, 2,5,8, and 3,6,9 family group members are highlighted in green, red, and blue, respectively. (The chart below contains only the condensed values of the sums. The non-condensed values of the solution numbers are not included in this chart, as will be the case with most of the charts which we will be working with throughout this book, for reasons which were explained in the previous section.)

1+1=2	**4+1=5**	**7+1=8**	**1+2=3**	**4+2=6**	**7+2=9**	**1+3=4**	**4+3=7**	**7+3=1**
1+4=5	**4+4=8**	**7+4=2**	**1+5=6**	**4+5=9**	**7+5=3**	**1+6=7**	**4+6=1**	**7+6=4**
1+7=8	**4+7=2**	**7+7=5**	**1+8=9**	**4+8=3**	**7+8=6**	**1+9=1**	**4+9=4**	**7+9=7**
2+2=4	**5+2=7**	**8+2=1**				**2+3=5**	**5+3=8**	**8+3=2**
2+5=7	**5+5=1**	**8+5=4**				**2+6=8**	**5+6=2**	**8+6=5**
2+8=1	**5+8=4**	**8+8=7**				**2+9=2**	**5+9=5**	**8+9=8**
						3+3=6	**6+3=9**	**9+3=3**
						3+6=9	**6+6=3**	**9+6=6**
						3+9=3	**6+9=6**	**9+9=9**

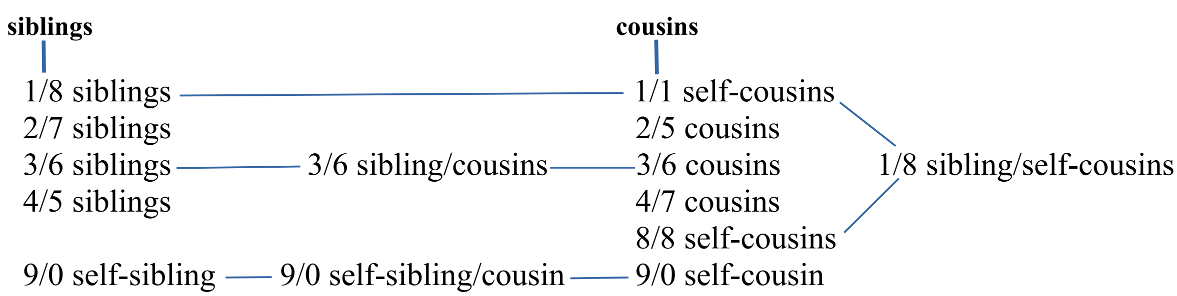
Above, we can see that in relation to the addition function, the base numbers display patterned behavior. First, we can see in the three leftmost columns of the chart that the adding together of any two numbers which are co-members of either the 1,4,7 or 2,5,8 family group always yields a solution number which condenses to a member of the opposing family group, for example "1+1=2" and "2+2=4". While in the three centermost columns of the chart, we can see that the adding together of any two numbers which are members of the opposing 1,4,7 and 2,5,8 family groups always yields a solution number which condenses to a value which maintains the 3,6,9 family group, for example "1+2=3". Also, in the three rightmost columns of the chart, we can see that the adding together of any two numbers which are co-members of the 3,6,9 family group always yields a solution number which condenses to a value which maintains the 3,6,9 family group, for example "3+6=9". Furthermore, in those same three columns, we can see that the addition of a member of the 3,6,9 family group to a member of either of the opposing two family groups always yields a solution number which condenses to a value which maintains the family group of the non-3,6,9 family group member addend, for example "1+3=4" and "2+6=8".

The behaviors which are described above involve a variety of color interactions, all of which are included in the chart below.

green + green = red	green + red = blue	green + blue = green
red + red = green	red + green = blue	red + blue = red
blue + blue = blue	blue + green = green	blue + red = red

Above, we can see in the leftmost vertical column of color interactions that the addition function causes matching color charges to cancel one another out and flip to their polar, in that two green charges add to a red charge, two red charges add to a green charge, and two blue charges add to a blue charge (as a form of neutrality, blue charge acts as its own polar). Also, we can see that the addition function causes instances of opposing color charges to come together and flip to (or remain) a blue charge, in that "green + red = blue", "red + green = blue", and "blue + blue = blue". While we can also see that the individual interactions which involve the addition of blue charge are unique, in that blue charge has no effect on any color charge to which is added, as "green + blue = green", "red + blue = red", and "blue + blue = blue". Furthermore, we can see that a form of neutralization is present in relation to the interactions which involve the polars of green charge and red charge, in that "green + red = blue" and "red + green = blue" (this form of neutralization is also displayed in relation to the subtraction function, as will be seen in a moment).

Though before we move on to the subtraction function, it should be noted at this point that in addition to their core and family group relationships, the base numbers are also related to one another as both siblings and cousins. There are five pairs of siblings, these being the 1/8, 2/7, 3/6, 4/5, and 9/0 siblings, with the 9 acting as its own sibling via the 0. While there are also six sets of cousins, these being the 1/1, 2/5, 3/6, 4/7, 8/8, and 9/0 cousins, with the 1 and the 8 each acting as their own cousin, and the 9 acting as its own cousin via the 0. This means that the 1 is the 1/1 self-cousin, and the 8 is the 8/8 self-cousin, with these two numbers collectively comprising the 1/8 sibling/self-cousins, while the 3 and the 6 are considered to be the 3/6 sibling/cousins, and the 9/0 is considered to be the 9/0 self-sibling/cousin. All of these relationships are explained more thoroughly in "Chapter Zero: Prologue", and are also indicated in the chart below.



The sibling and cousin relationships which the numbers maintain between one another each uniquely involve the concept of reciprocity around one of the base numbers, as will be explained in section five. These relationships have been mentioned at this point due to the fact that as will be seen in a moment, in quantum mathematics, negative base charged numbers can be condensed down to their single-digit value, then converted over to their positive base charged sibling via instances of positive/negative sibling mirroring, the specifics of which will also be explained in section five.

Moving on, the behaviors which were seen in relation to the addition function can also be seen in relation to the subtraction function, as is explained below, starting with a chart which contains all of the subtractive interactions which are possible between the base numbers, in which the subtractive interactions are separated into groups based on the family group membership of the minuends, and the numbers are all highlighted in a color charge color code. (For the sake of simplicity, in the chart which is shown below, the negative base charged differences have all been condensed down to their positive base charged siblings via instances of the aforementioned positive/negative sibling mirroring.)

1-1=9	**4-1=3**	**7-1=6**	**1-2=8**	**4-2=2**	**7-2=5**	**1-3=7**	**4-3=1**	**7-3=4**
1-4=6	**4-4=9**	**7-4=3**	**1-5=5**	**4-5=8**	**7-5=2**	**1-6=4**	**4-6=7**	**7-6=1**
1-7=3	**4-7=3**	**7-7=9**	**1-8=2**	**4-8=5**	**7-8=8**	**1-9=1**	**4-9=4**	**7-9=7**
2-1=1	**5-1=4**	**8-1=7**	**2-2=9**	**5-2=3**	**8-2=6**	**2-3=8**	**5-3=2**	**8-3=5**
2-4=7	**5-4=1**	**8-4=4**	**2-5=6**	**5-5=9**	**8-5=3**	**2-6=5**	**5-6=8**	**8-6=2**
2-7=4	**5-7=7**	**8-7=1**	**2-8=3**	**5-8=6**	**8-8=9**	**2-9=2**	**5-9=5**	**8-9=8**
3-1=2	**6-1=5**	**9-1=8**	**3-2=1**	**6-2=4**	**9-2=7**	**3-3=9**	**6-3=3**	**9-3=6**
3-4=8	**6-4=2**	**9-4=5**	**3-5=7**	**6-5=1**	**9-5=4**	**3-6=6**	**6-6=9**	**9-6=3**
3-7=5	**6-7=8**	**9-7=2**	**3-8=4**	**6-8=7**	**9-8=1**	**3-9=3**	**6-9=6**	**9-9=9**

We can see above that as is the case in relation to additive interactions, when the base numbers are involved in a subtractive interaction, it can effect the net color charge of the solution number in a variety of manners, all of which are shown below. (To clarify the term "net color charge", in these cases which involve the subtraction of one number from another number, one unique color charge will possibly alter, while also giving off another possibly matching color charge, in that "original color charge - subtracted color charge = net color charge". Though the term "giving off" is somewhat inaccurate, in that there is more of a neutralization involved, with this being an important distinction which will be explained in a moment.)

green - green = blue	green - red = red	green - blue = green
red - red = blue	red - green = green	red - blue = red
blue - blue = blue	blue - green = red	blue - red = green

Above, we can see in the leftmost vertical column of interactions that the subtraction of any color charge from itself always yields a blue charge. Also, we can see above that the subtraction of an opposing color charge causes a color charge to react by changing to whatever color charge is being subtracted from it, in that the subtraction of a red charge from a green charge yields a red charge, the subtraction of a green charge from a red charge yields a green charge, and the subtraction of a blue charge from a blue charge yields a blue charge. Furthermore, we can see that the subtraction of a blue charge from a red charge yields a red charge, and the subtraction of a blue charge from a green charge yields a green charge, with this behavior indicating that the subtraction of a blue charge has no effect on any of the individual color charges. While we can also see that the subtraction of either of the opposing color charges from a blue charge yields the opposing color charge, in that the subtraction of a green charge from a blue charge yields a red charge, and the subtraction of a red charge from a blue charge yields a green charge, with this behavior implying that a blue charge is comprised of one each of the opposing two color charges.

As was mentioned a moment ago, the behaviors which are described above involve a form of neutralization. In relation to interactions which involve matching color charges, these being "green-green=blue", "red-red=blue", and "blue-blue=blue", this neutralization involves one number giving off its own color charge to a subtracted number, and therefore being left with a blue charge, with this blue charge being considered to be a neutral color charge. While in relation to interactions which involve opposing color charges, these being "green-red=red" and "red-green=green" this neutralization involves more of a reversal, with one number giving off the opposite of its color charge, and therefore being left with the opposite of its original color charge.

All of this indicates that each of the three color charges is comprised of two instances of its polar, in that one instance of red charge is comprised of two instances of green charge, as "red - green = green", one instance of green charge is comprised of two instances of red charge, as "green - red = red", and one instance of blue charge is comprised of two instances of blue charge, as "blue - blue = blue". While this important characteristic is also indicated in relation to the addition function, in that "green + green = red", "red + red = green", and "blue + blue = blue". Also, as was mentioned a moment ago, while blue charge can be considered to be comprised of two instances of blue charge, as "blue - blue = blue", blue charge can also be considered to be comprised of one instance each of green charge and red charge, in that "red + green = blue". This dualistic aspect of blue charge arises due to a unique characteristic of neutrality, one which will be explained in section six.

The behaviors which have been seen throughout this section are indicative of the fact that the three forms of color charge display a form of behavioral matching in relation to the 3,6,9 family group members, one aspect of which involves the addition function, as is shown and explained below. (In the chart which is shown below, the color charges are highlighted in a color charge color code, while the 3,6,9 family group members are highlighted in green, red, and blue, respectively, in order to indicate the form of behavioral matching which we are examining.)

green charge	+ green charge	= red charge	is equivalent to 3+3= 6(6)
red charge	+ red charge	= green charge	is equivalent to 6+6=12(3)
green charge	+ red charge	= blue charge	is equivalent to 3+6= 9(9)
green charge	+ blue charge	= green charge	is equivalent to 3+9=12(3)
red charge	+ blue charge	= red charge	is equivalent to 6+9=15(6)
blue charge	+ blue charge	= blue charge	is equivalent to 9+9=18(9)

Above, we can see that the three forms of color charge display behavior which is equivalent to that which is displayed by the 3,6,9 family group members in relation to the addition function, with green charge acting as the 3, red charge acting as the 6, and blue charge acting as the 9.

This same form of behavioral matching is also displayed in relation to the subtraction function, as is shown below.

green charge - green charge = blue charge is equivalent to 3 - 3 = 0(9)
red charge - red charge = blue charge is equivalent to 6 - 6 = 0(9)
green charge - red charge = red charge is equivalent to 3 - 6 = -3(6)
green charge - blue charge = green charge is equivalent to 3 - 9 = -6(3)
red charge - blue charge = red charge is equivalent to 6 - 9 = -3(6)
blue charge - blue charge = blue charge is equivalent to 9 - 9 = 0(9)

Above, we can see that this same equivalency is maintained, which means that the three forms of color charge display a form of behavioral matching in relation to the 3,6,9 family group members, with this form of behavioral matching involving both the addition and subtraction functions. We will revisit the behavioral matching which is displayed between the three forms of color charge and the three members of the 3,6,9 family group in section two, after we begin our examination of reactive charge, as the three forms of reactive charge also display this same behavior in relation to the +/- sibling functions. (To clarify, the functions of addition and subtraction are considered to be sibling functions, as are the functions of multiplication and division, which in each case is due to their oppositional qualities.)

Though before we bring this section to a close, we need to establish that there are two overall forms of interaction which can occur between numbers, these being inter-family group interactions, which involve a number changing to a new number that is a member of a new family group, and intra-family group interactions, which involve a number changing to a new number that maintains the same family group as the original number, examples of both of which are shown below. (To clarify the terms which are used below, all interactions involve an original number, which interacts with an interaction number via a function, in order to become one or more new solution numbers.)

original number **interaction number** **solution number**

1 + 5 = 6 inter-family group interaction
1 + 4 = 5 inter-family group interaction
1 + 3 = 4 intra-family group interaction

Above, we can see that the first two examples involve inter-family group interactions, in that their solution numbers do not maintain the same family group as their original numbers, while the third example involves an intra-family group interaction, in that its solution number maintains the same family group as its original number. The third example involves the 3 as the interaction number, which is due to the fact that intra-family group interactions always involve an interaction number which is a member of the 3,6,9 family group, as is shown and explained below, with a chart of all of the intra-family group additive interactions that are possible between the base numbers, in which the interactions are all grouped based on the family group membership of the original number, and the numbers are all highlighted in a color charge color code.

1+3=4	**1+6=7**	**1+9=1**	**2+3=5**	**2+6=8**	**2+9=2**	**3+3=6**	**3+6=9**	**3+9=3**
4+3=7	**4+6=1**	**4+9=4**	**5+3=8**	**5+6=2**	**5+9=5**	**6+3=9**	**6+6=3**	**6+9=6**
7+3=1	**7+6=4**	**7+9=7**	**8+3=2**	**8+6=5**	**8+9=8**	**9+3=3**	**9+6=6**	**9+9=9**

Above, we can see that none of these interactions effect the color charge of the original number in any way. However in some cases, these interactions do effect the reactive charge of the original number, as will be explained in the next section.

Section Two:
"Reactive Charge and Disregarded Neutrality"

In this section, we will begin our examination of the concept of reactive charge. We will start by establishing the fact that the reactive charge which is possessed by a number is determined by its position within its family group, with the first member of each of the family groups, these being the 1, the 2, and the 3, all possessing a first charge, the second member of each of the family groups, these being the 4, the 5, and the 6, all possessing a second charge, and the third member of each of the family groups, these being the 7, the 8, and the 9, all possessing a third charge. As is the case in relation to color charge, reactive charge is inherent, in that the reactive charge of a number can only change when the number itself changes to a new number which possesses a different reactive charge.

With that said, we will now examine how the intra-family group additive interactions which were seen at the end of the previous section effect the reactive charge of the original numbers, as is shown below, with the same chart which was seen at the end of the previous section, only with the interactions all separated into groups based on the interaction number, and the numbers all highlighted in a reactive charge color code, which means that the first charged numbers are all highlighted in green, the second charged numbers are all highlighted in red, and the third charged numbers are all highlighted in blue.

1+3=4	**2+3=5**	**3+3=6**	**1+6=7**	**2+6=8**	**3+6=9**	**1+9=1**	**2+9=2**	**3+9=3**
4+3=7	**5+3=8**	**6+3=9**	**4+6=1**	**5+6=2**	**6+6=3**	**4+9=4**	**5+9=5**	**6+9=6**
7+3=1	**8+3=2**	**9+3=3**	**7+6=4**	**8+6=5**	**9+6=6**	**7+9=7**	**8+9=8**	**9+9=9**

Above, in the three leftmost columns of interactions, we can see that all of the interactions which involve the first charged 3 as the interaction number cause the original number to raise to the next member of its family group (in these situations, the family groups are assumed to repeat, in that for example, the 2 follows the 8). While we can see in the three centermost columns that all of the interactions which involve the second charged 6 as the interaction number cause the original number to lower to the previous member of its family group, and we can see in the three rightmost columns that none of the interactions which involve the third charged 9 as the interaction number cause any change in the original number.

Next, we will examine a similar chart of all of the intra-family group subtractive interactions which are possible between the base numbers, which is shown below, with the interactions again grouped based on the interaction number, and with the numbers all highlighted in a reactive charge color code.

1-3=7	**2-3=8**	**3-3=9**	**1-6=4**	**2-6=5**	**3-6=6**	**1-9=1**	**2-9=2**	**3-9=3**
4-3=1	**5-3=2**	**6-3=3**	**4-6=7**	**5-6=8**	**6-6=9**	**4-9=4**	**5-9=5**	**6-9=6**
7-3=4	**8-3=5**	**9-3=6**	**7-6=1**	**8-6=2**	**9-6=3**	**7-9=7**	**8-9=8**	**9-9=9**

Above, in the three leftmost columns of interactions, we can see that all of the interactions which involve the first charged 3 as the interaction number cause the original number to lower to the previous member of its family group. While we can see in the three centermost columns that all of the interactions which involve the second charged 6 as the interaction number cause the original number to raise to the next member of its family group, and we can see in the three rightmost columns that none of the interactions which involve the third charged 9 as the interaction number cause any change in the original number.

The effects which the intra-family group subtractive interactions have on the reactive charge of the original numbers display mirroring in relation to the effects which the intra-family group additive interactions have on the reactive charge of the original numbers, with this being indicative of the behavioral mirroring which is displayed between the members of the 3,6,9 family group in relation to the +/- sibling functions, as is explained in "Quantum Mathematics and the Standard Model of Physics Part Five: 'Color and Reactive Charges' ". The intra-family group behaviors which are described above are important behaviors, though they are not immediately relevent, therefore we will simply note them as such and continue on with our examination of reactive charge.

Next, we will begin to examine inter-family group interactions, which means that we will be working exclusively with interaction numbers which are members of the 1,4,7 and 2,5,8 family groups. Below is a chart that contains all of the inter-family group additive interactions which are mathematically possible between the base numbers, in which the numbers are all highlighted in a reactive charge color code.

1+1=2	2+2=4	1+2=3	2+1=3	3+1=4	3+2=5
4+1=5	5+2=7	4+2=6	5+1=6	6+1=7	6+2=8
7+1=8	8+2=1	7+2=9	8+1=9	9+1=1	9+2=2
1+4=5	2+5=7	1+5=6	2+4=6	3+4=7	3+5=8
4+4=8	5+5=1	4+5=9	5+4=9	6+4=1	6+5=2
7+4=2	8+5=4	7+5=3	8+4=3	9+4=4	9+5=5
1+7=8	2+8=1	1+8=9	2+7=9	3+7=1	3+8=2
4+7=2	5+8=4	4+8=3	5+7=3	6+7=4	6+8=5
7+7=5	8+8=7	7+8=6	8+7=6	9+7=7	9+8=8

Above, we see fifty-four interactions, though only half of them are considered to be conserved interactions, in that only twenty-seven of these particular interactions maintain reactive charge conservation, as will be explained in the next section.

Though before we move on to the next section, we will take a moment to examine the behavioral matching which is displayed between the various forms of color and reactive charge and the members of the 3,6,9 family group, as these behaviors are integral to the concept of charge conservation. As was mentioned in section one, and is explained in "Quantum Mathematics and the Standard Model of Physics Part Six: 'Seeing Functions as Interactions' ", the three forms of reactive charge display behavioral matching in relation to both the three forms of color charge and the members of the 3,6,9 family group, and this form of behavioral matching is indicated in the chart below, in which the reactive charges are highlighted in a reactive charge color code, and the 3,6,9 family group members are highlighted in green, red, and blue, respectively, in order to indicate the form of behavioral matching which we are examining.

first charge + first charge = second charge is equivalent to 3+3= 6(6)
second charge + second charge = first charge is equivalent to 6+6=12(3)
first charge + second charge = third charge is equivalent to 3+6= 9(9)
first charge + third charge = first charge is equivalent to 3+9=12(3)
second charge + third charge = second charge is equivalent to 6+9=15(6)
third charge + third charge = third charge is equivalent to 9+9=18(9)

Above, we can see that the chart which compares the three forms of reactive charge to the 3,6,9 family group members is similar to the chart that was seen in section one which compares the three forms of color charge to the 3,6,9 family group members, in that first charge, second charge and third charge could be replaced with green charge, red charge, and blue charge, respectively, and the highlighting within the chart would not change.

However, the behavior which is described above is problematic, in that as was mentioned a moment ago, quite a few of the individual interactions which were examined in section one did not maintain reactive charge conservation, in that their behavior deviated from the behaviors which are described above, though this deviation was not mentioned at the time. This loss of reactive charge conservation will be examined in the next section, after we more thoroughly examine the behavior which is displayed by the three members of the 3,6,9 family group, which due to the aforementioned behavioral matching, will allow us to gain a better understanding of the behavior which is displayed by the color and reactive charge trinities.

The equivalency which is highlighted in the chart above indicates a previously unmentioned characteristic of the 3,6,9 family group, this being that the 3,6,9 family group can be considered to be a three-member base set. We can get a clearer look at this three-member base set by dividing each of the 3,6,9 family group members by the 9. In order to avoid decimal numbers for the moment, we will consider this to be a fractional base set, consisting of the fractions 3/9, 6/9, and 9/9, which can be condensed down to the fractions 1/3, 2/3, and 3/3, respectively. This means that the interrelations between the 3,6,9 family group members can also be viewed as the interrelations between the fractions 1/3, 2/3, and 3/3, as is also the case in relation to the members of the color and reactive charge trinities. This is all shown in the chart below, with the numbers and fractions all highlighted in the same color code as was utilized in relation to the previous chart.

3+3= 6(6) is equivalent to **1/3+1/3=2/3** (**2/3**)
6+6=12(3) is equivalent to **2/3+2/3=4/3** (**1 1/3**)
3+6= 9(9) is equivalent to **1/3+2/3=3/3** (**1**)
3+9=12(3) is equivalent to **1/3+3/3=4/3** (**1 1/3**)
6+9=15(6) is equivalent to **2/3+3/3=5/3** (**1 2/3**)
9+9=18(9) is equivalent to **3/3+3/3=6/3** (**2**)

Above, we can see that in relation to the addition function, the interrelations between the 3,6,9 family group members are equivalent to the interrelations between the fractions 1/3, 2/3, and 3/3, which themselves are the fractional representation of the infinitely repeating decimal numbers .3..., .6..., and .9..., respectively. This means that 1/3 can be considered to be the equivalent of a generic positive charge, such as green charge or first charge, and is simply the first of three options, these being 1/3, 2/3, and 3/3. While the second of these three options, this being 2/3, can be considered to be the equivalent of a generic negative charge, such as red charge or second charge, and the third of these three options, this being 3/3, can be considered to be the equivalent of a generic neutral charge, such as blue charge or third charge. (The behavioral matching which is displayed between the 3,6,9 family group members and the fractions 1/3, 2/3, and 3/3 also applies in relation to the subtraction function, though this equivalency is not shown above.)

In the example which is seen above, the whole number parts of the solution numbers are all highlighted in blue. We have disregarded the whole numbers in relation to this example, which is due to the fact that we are working with fractional representations of infinitely repeating decimal numbers, and as is seen throughout "The Big Book of Quantum Mathematics", whole numbers are usually disregarded when infinitely repeating decimal numbers are viewed quantum mathematically. Though in this case, the whole numbers are being disregarded due to their acting as a form of neutrality, which is indicated by their blue highlighting, as will be explained in a moment.

The three-member fractional base set of 1/3, 2/3, 3/3 allows us a total of nine unique additive interactions, all of which are shown below.

1/3+1/3= 2/3	**2/3+1/3=1**	**3/3+1/3=11/3**
1/3+2/3=1	**2/3+2/3=11/3**	**3/3+2/3=12/3**
1/3+3/3=11/3	**2/3+3/3=12/3**	**3/3+3/3=2**

Above, we can see that the whole number parts of these sums are all highlighted in blue, with this form of highlighting indicating that these numbers involve a form of neutrality, in that the fractional option of 3/3 is the equivalent of a generic neutral charge, and the fraction 3/3 can also be indicated as the whole number 1, as is the case in relation to two of the solution numbers which are seen above. Furthermore, in relation to this three-member fractional base set, all whole numbers are considered to possess a neutral charge, which is due to the fact that any whole numbers which are added together will always yield a sum which is a whole number, with this behavior being similar to that which is displayed by any generic neutrality, in that any quantity of neutrals which are added together will always yield a neutral.

The progression of this three-member fractional base set continues on to infinity, as is shown below, with the fractions represented as whole numbers whenever possible, and with these whole numbers growing by 1 on every third step.

1/3, 2/3, 1, 11/3, 12/3, 2, 21/3, 22/3, 3, 31/3, 32/3, 4, 41/3, 42/3, 5, 51/3, 52/3, 6, ...

Above, we can see that each of these compound numbers maintains the charge of its fractional part, as each of the whole numbers possesses a neutral charge.

Furthermore, if we take into account the previously unaccounted for neutrals, we can see that the color and reactive charge trinities involve forms of progression which display behaviors that are similar to the generic behavior which is seen above, as is shown below, starting with a chart which involves the repeated addition of green charge to a preexisting green charge. (In the chart below, the initial three instances of blue charge are each referred to as "(1)blue charge", with every three subsequent instances of blue charge being referred to as "(2)blue charge", "(3)blue charge", etc., with these designations indicating that the neutrality of blue charge grows in a similar manner to the generic neutrality of the whole numbers which were seen in relation to the previous chart. While in relation to compound charges, the neutral part of the compound charge are included in parentheses, in order to indicate the fact that the neutral aspect of the compound charge can be disregarded.)

green,	green+green= red,	red+green=(1)blue,
(1)blue+green=(1blue)green,	(1blue)green+green=(1blue)red,	(1blue)red+green=(2)blue,
(2)blue+green=(2blue)green,	(2blue)green+green=(2blue)red,	(2blue)red+green=(3)blue, ...

Above, we can see that repeated additions of green charge cause green charge (1/3) to become red charge (2/3), then (1)blue charge (3/3, or 1). While continued additions of green charge cause (1)blue charge to become (1blue)green charge (1 1/3), then (1blue)red charge (1 2/3), before becoming (2)blue charge (6/3, or 2), with this progression continuing on to infinity.

The reactive charge trinity involves a similar form of progression, as is shown below, with a chart which involves the repeated addition of first charge to a preexisting first charge, and in which the reactive charges are highlighted in a reactive charge color code.

first,	first+first= second,	second+first=(1)third,
(1)third+first=(1third)first,	(1third)first+first=(1third)second,	(1third)second+first=(2)third,
(2)third+first=(2third)first,	(2third)first+first=(2third)second,	(2third)second+first=(3)third, ...

Above, we can see that repeated additions of first charge cause first charge (1/3) to become second charge (2/3), then (1)third charge (3/3, or 1). While continued additions of first charge cause (1)third charge to become (1third)first charge (1 1/3), then (1third)second charge (1 2/3), before becoming (2)third charge (6/3, or 2), with this progression continuing on to infinity.

As was mentioned a moment ago, the inclusion of numbers before the two forms of neutral charge are indicative of the fact that we are currently working with units of neutral charge. These parenthesized numbers do not preceed the other forms of charge, as there are no instances of multiple units of non-neutral forms of charge. This is due to the fact that two matching instances of individual non-neutral charge simply combine into a single instance of the opposing charge, as has been established previously. The equivalency of the progressions which were highlighted in the previous three examples are all shown collectively in the chart below.

first	second	(1)third	(1third)first	(1third)second	(2)third	(2third)first	(2third)second	(3)third	
green	red	(1)blue	(1blue)green	(1blue)red	(2)blue	(2blue)green	(2blue)red	(3)blue	
1/3,	**2/3,**	**1,**	**1 1/3,**	**1 2/3,**	**2,**	**2 1/3,**	**2 2/3,**	**3, ...**	

While the assertions which were made in section one are all accurate, specifically that "green+red=blue", "blue+green=green" "blue+red=red", and "blue+blue=blue", they failed to account for the neutral aspect of the solutions, which is due to the fact that much like the whole number aspect of the compound numbers which were seen a moment ago, the neutral aspect of a compound charge can be disregarded, as has been the case up to the previous few examples. Though when the neutral aspect of the charges is taken into account, the color interactions which are mentioned within this paragraph look like those which are shown below.

green+red = (1)blue
(1)blue+green = (1blue)green
(1)blue+red = (1blue)red
(1)blue+(1)blue = (2)blue

Furthermore, while the assertions which were made earlier in this section are also all accurate, specifically that "first+second=third", "third+first=first", "third+second=second", and "third+third=third", when the neutral aspect of the charges is taken into account, the reactive interactions which are mentioned within this paragraph look like those which are shown below.

first+second = (1)third
(1)third+first = (1third)first
(1)third+second = (1third)second
(1)third+(1)third = (2)third

Taking the concept of disregarded neutrality one step further, since section one, we have been comparing the color and reactive charge trinities to the members of the 3,6,9 family group, though it should be clarified at this point that our understanding of the progression of the numbers 3, 6, and 9 is incomplete, as is our understanding of the overall concept of condensation, in that when we have been condensing the multiple-digit numbers down to their single-digit value, we have not been taking into account the value that is being lost through the act of condensation. The reason that we have been able to disregard this lost value is due to the fact that these unaccounted for values always involve a form of neutrality, in that they always condense to the 9. (Due to its neutral color and reactive charge, the 9/0 unity, along with its multiples, tends to behave in a neutral manner when interacting with the other numbers, as will be explained in section seven.) These unaccounted for values are accounted for in the chart which is shown below, which involves a form of progression that is similar to those which were seen above, only involving repeated additions of the 3 to a preexisting 3.

unaccounted for values →			9	9	9	18(9)	18(9)	18(9)	
			|	|	|	|	|	|	
3,	3+3=6,	6+3=9,	9+3=12(3) ,	12+3=15(6),	15+3=18(9),	18+3=21(3),	21+3=24(6),	24+3=27(9),	...

Above, we can see that the first instance of condensation involves 12 condensing to the 3, with this instance of condensation leaving an unaccounted for value of 9, in that the non-condensed value of 12 minus the condensed value of 3 yields an unaccounted for value of 9, as 12-3=9. While we can also see that further instances of condensation each involve either an unaccounted for value of 9, or an unaccounted for value that condenses to the 9, in this case via three instances of an uncondensed value of 18.

Continuing on with this concept, regardless of the value of the multiple-digit number, upon condensation, its unaccounted for value will always be a multiple of the 9, as is shown in the chart below.

multiples of the 9	45/9=5	54/9=6	72/9=8	243/9=27
	|	|	|	|
unaccounted for value	45(9)	54(9)	72(9)	243(9)
	|	|	|	|
arbitrary multiple-digit numbers	47(2)	57(3)	80(8)	246(3)

Above, we can see that all of these multiple-digit numbers involve unaccounted for values which not only condense to the 9, but are also multiples of the 9. These characteristics arise as a consequence of the relationship between the 9/0 unity and the overall concept of octaves, as will be explained in section seven.

The unaccounted for neutrals and values which were examined in this section will for the most part be disregarded going forward from here. These concepts were included in this section in order to allow for a more thorough understanding of the behaviors which are displayed by the members of the color and reactive charge trinities, as well as of the overall concept of the condensation of multiple-digit numbers down to their single-digit value.

That brings this section to a close. We will continue our examination of reactive charge in the next section, specifically in relation to the concept of charge conservation.

Section Three:
"Charge Conservation"

In this section, we will examine the concept of charge conservation. We will begin by examining the chart of all of the inter-family group additive interactions which are mathematically possible between the base numbers which was seen in the previous section, in order to note which of these interactions maintain reactive charge conservation. This chart is shown again below, with the numbers all highlighted in a reactive charge color code, and with lines drawn through all of the interactions which do not maintain reactive charge conservation.

~~1+1=2~~	2+2=4	~~1+2=3~~	~~2+1=3~~	3+1=4	3+2=5
~~4+1=5~~	5+2=7	~~4+2=6~~	~~5+1=6~~	6+1=7	6+2=8
~~7+1=8~~	8+2=1	~~7+2=9~~	~~8+1=9~~	9+1=1	9+2=2
~~1+4=5~~	2+5=7	~~1+5=6~~	~~2+4=6~~	3+4=7	3+5=8
~~4+4=8~~	5+5=1	~~4+5=9~~	~~5+4=9~~	6+4=1	6+5=2
~~7+4=2~~	8+5=4	~~7+5=3~~	~~8+4=3~~	9+4=4	9+5=5
~~1+7=8~~	2+8=1	~~1+8=9~~	~~2+7=9~~	3+7=1	3+8=2
~~4+7=2~~	5+8=4	~~4+8=3~~	~~5+7=3~~	6+7=4	6+8=5
~~7+7=5~~	8+8=7	~~7+8=6~~	~~8+7=6~~	9+7=7	9+8=8

Above, we can see that the only interactions which maintain reactive charge conservation are those which exclusively involve members of the 2,5,8 family group, and those which involve original numbers which are members of the 3,6,9 family group. These behaviors are due to characteristics of the base numbers which are explained thoroughly in "Quantum Mathematics and the Standard Model of Physics Part Nine: 'Conserved Interactions and Anti-Charge' ", and will be more briefly explained in a moment.

Though before we examine the various forms of charge conservation which may or may not be maintained throughout the various additive and subtractive interactions which are mathematically possible between the base numbers, we will take this opportunity to begin representing the base numbers as quanta, as is shown below, with both the numerical and quantum representations of the base set highlighted in a color charge color code.

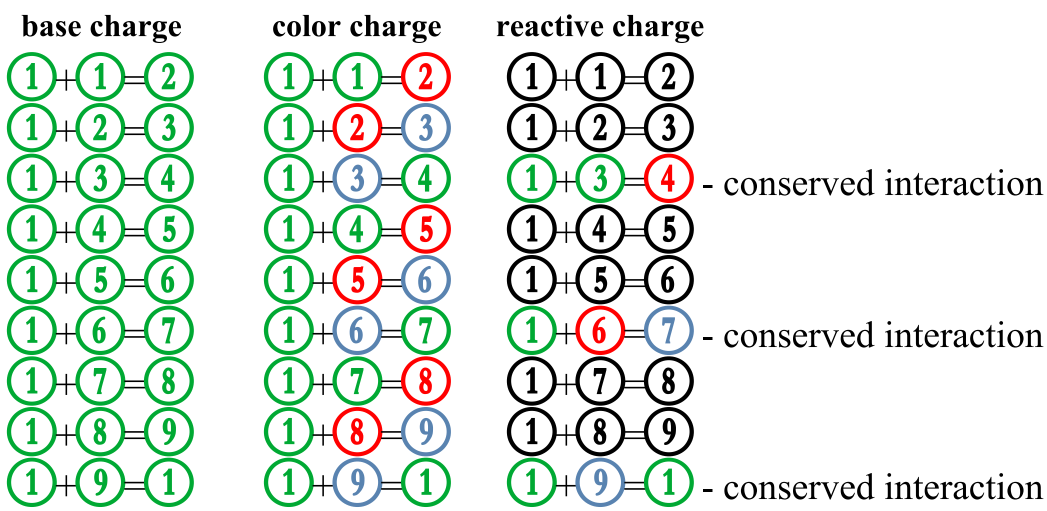
1 2 3 4 5 6 7 8 9

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

Above, we see the base set of numbers, below which is the same base set, only represented as quanta. Throughout the remainder of this book, we will for the most part be representing the base numbers as quanta, though this aesthetic change in no way effects any of the previously established qualities, characteristics, or behaviors of the numbers. (While the numbers within the charts will for the most part be represented as quanta, many of the numbers which are contained within the text will still be represented numerically, as an excess of quanta within the text can get to be cumbersome.)

Getting back to the concept of overall charge conservation, it is understood that all numerical functions are possible in traditional mathematics, provided they maintain numerical conservation, in that for example a function such as "1+1=3" is not possible, as it yields a sum of 3 from addends which only possess a total value of 2. However, not all numerically conserved interactions are quantum mathematically possible, in that many of the numerically conserved interactions which are possible between the base numbers do not maintain reactive charge conservation, as can be seen in the chart on the previous page, and as is explained below.

We will start by examining the collective +1 additive interaction, which is comprised of the nine individual interactions of "1+1" **-** "1+9" (these being "1+1", "1+2", "1+3", etc.), which is shown below, with each of the interactions shown three times, and with the quanta highlighted in base, color, and reactive charge color codes, as is explained below the chart.



Above, in the leftmost of the three vertical columns, we can see that base charge is conserved through all nine of the individual +1 additive interactions, which in this case are highlighted in a base charge color code. Next, in the center column, we can see that color charge is also conserved through all nine of these individual interactions, which in this case are highlighted in a color charge color code. Though as we can see in the rightmost column, the loss of conservation occurs in relation to reactive charge, as is indicated by the fact that the three individual interactions which maintain reactive charge conservation are all highlighted in a reactive charge color code, while the six individual interactions which do not maintain reactive charge conservation are all shown in non-highlighted black. This lack of reactive charge conservation means that the six individual non-highlighted interactions do not maintain overall charge conservation, which means that the collective +1 additive interaction only contains three individual conserved interactions, these being the three interactions which involve interaction quanta which are members of the 3,6,9 family group.

There is no need for us to examine all of the individual collective interactions, as they have been examined thoroughly in "Quantum Mathematics and the Standard Model of Physics Part Nine: 'Conserved Interactions and Anti-Charge' ", therefore we will instead examine lists of all of the individual conserved +/- sibling interactions which are possible between the base numbers, starting with a list of all of the individual conserved additive interactions, which is shown below, with the quanta all highlighted in a color charge color code. (To clarify the terminology that is used below, in relation to the quanta which we are now viewing the numbers as, the addition function can be considered to involve the absorption of one quanta by another quanta, and the subtraction function can be considered to involve one quanta releasing another quanta, in order to become a new quanta.)

1+3=4	2+3=5	2+2=4	3+3=6
1+6=7	2+6=8	2+5=7	3+6=9
1+9=1	2+9=2	2+8=1	3+9=3
4+3=7	5+3=8	5+2=7	
4+6=1	5+6=2	5+5=1	
4+9=4	5+9=5	5+8=4	
7+3=1	8+3=2	8+2=1	
7+6=4	8+6=5	8+5=4	
7+9=7	8+9=8	8+8=7	

In examining the behaviors which the quanta display in the chart above, all of which have been noted previously, we can see that the 1,4,7 family group members can only absorb 3,6,9 family group members in order to raise or lower their quality within their own family group, for example "1+3=4" and "4+6=1", while the 2,5,8 family group members can do same, for example "2+3=5" and "5+6=2", as well as absorb one another in order to bring their mutual quality to a value which is a member of the 1,4,7 family group, for example "2+2=4", and the 3,6,9 family group members exclusively facilitate all of the intra-family group additive interactions.

Next, we will examine a list of all of the individual conserved subtractive interactions, which is shown below, with the quanta all highlighted in a color charge color code. (In the chart which is shown below, the negative base charged differences have all been condensed down to their positive base charged siblings via instances of positive/negative sibling mirroring.)

1-3=7	1-1=9	1-2=8	2-3=8	2-2=9	3-3=9
1-6=4	1-4=6	1-5=5	2-6=5	2-5=6	3-6=6
1-9=1	1-7=3	1-8=2	2-9=2	2-8=3	3-9=3
4-3=1	4-1=3	4-2=2	5-3=2	5-2=3	6-3=3
4-6=7	4-4=9	4-5=8	5-6=8	5-5=9	6-6=9
4-9=4	4-7=6	4-8=5	5-9=5	5-8=6	6-9=6
7-3=4	7-1=6	7-2=5	8-3=5	8-2=6	9-3=6
7-6=1	7-4=3	7-5=2	8-6=2	8-5=3	9-6=3
7-9=7	7-7=9	7-8=8	8-9=8	8-8=9	9-9=9
1-3=7	1-1=9	1-2=8	2-3=8	2-2=9	3-3=9
1-6=4	1-4=6	1-5=5	2-6=5	2-5=6	3-6=6
1-9=1	1-7=3	1-8=2	2-9=2	2-8=3	3-9=3
4-3=1	4-1=3	4-2=2	5-3=2	5-2=3	6-3=3
4-6=7	4-4=9	4-5=8	5-6=8	5-5=9	6-6=9
4-9=4	4-7=6	4-8=5	5-9=5	5-8=6	6-9=6
7-3=4	7-1=6	7-2=5	8-3=5	8-2=6	9-3=6
7-6=1	7-4=3	7-5=2	8-6=2	8-5=3	9-6=3
7-9=7	7-7=9	7-8=8	8-9=8	8-8=9	9-9=9

Above, we can see in the leftmost three columns of interactions that the 1,4,7 family group members can release a 3,6,9 family group member in order to become a lesser or greater 1,4,7 family group member, for example "4-3=1" and "4-6=7", while inversely they can release a fellow 1,4,7 family group member in order to become a 3,6,9 family group member, for example "4-1=3", or they can release a 2,5,8 family group member in order to become a 2,5,8 family group member, for example "4-2=2". While we can see in the center two columns of interactions that the 2,5,8 family group members can release a 3,6,9 family group member in order to become a lesser or greater 2,5,8 family group member, for example "5-3=2" and "5-6=8", or inversely they can release a fellow 2,5,8 family group member in order to become a 3,6,9 family group member, for example "5-2=3", and we can see in the rightmost column of interactions that the 3,6,9 family group members can only release fellow 3,6,9 family group members, while still maintaining the 3,6,9 family group, for example "6-3=3".

The charts which are shown above confirm and codify the various behaviors which have been described throughout this book. Next, we will take a moment to examine these same behaviors from a slightly different perspective.

As was explained in section zero, the 1,4,7 and 2,5,8 family groups comprise the 1,2,4,8,7,5 core group, which along with the 3,6,9 core group, comprises the base set of numbers, which we are currently viewing as quanta. Though for the moment, we can consider the members of the 1,2,4,8,7,5 core group to be what physics would view as sub-atomic particles of charged matter, and we can consider the members of the 3,6,9 core group to be what physics would view as the particles of energy by which the charged matter particles interact.

For the past few pages, we have been working with quantized representations of the base numbers, which we have been referring to as "quanta". Though at this point the term "quanta" is a bit too vague, in that it has become clear that we are dealing with a group of nine individual quanta, each of which behaves in one of two distinct manners. First, we have the 1,2,4,8,7,5 core group, which is comprised of six quanta that possess a form of color charge which has the ability to effect the color charge of another quanta with which it interacts via the addition or subtraction function, which in terms of our particle analogy, would mean another quanta which it either merges with or releases. Then, we have the 3,6,9 core group, which is comprised of three quanta that possess a form of color charge which does not have the ability to effect the color charge of another quanta which it either merges with or releases. In continuing with our particle analogy, we will refer to the 3,6,9 core group members as "neutral energy particles", and we will refer to the 1,2,4,8,7,5 core group members as "charged particles", with the 1,4,7 and 2,5,8 family group members being referred to as "alpha charged particles" and "beta charged particles", respectively. (The alpha dominance which the 1,4,7 family group members display over the more passive 2,5,8 family group members will not be encountered much in this book, however it is seen throughout "The Big Book of Quantum Mathematics".)

We will now incorporate these new terms into a familiar chart, as is shown below.

~~alpha charged particle + alpha charged particle = beta charged particle is equivalent to 3+3= 6(6)~~
beta charged particle + beta charged particle = alpha charged particle is equivalent to 6+6=12(3)
~~alpha charged particle + beta charged particle = neutral energy particle is equivalent to 3+6= 9(9)~~
alpha charged particle + neutral energy particle = alpha charged particle is equivalent to 3+9=12(3)
beta charged particle + neutral energy particle = beta charged particle is equivalent to 6+9=15(6)
neutral energy particle + neutral energy particle = neutral energy particle is equivalent to 9+9=18(9)

Above, the various particles have been included in the chart which indicates their behavioral equivalence to the members of the 3,6,9 family group in relation to the addition function, and the previously established non-conserved interactions have been crossed out. (These particles could also be included in a similar chart involving the subtraction function, though this chart will not be shown here.)

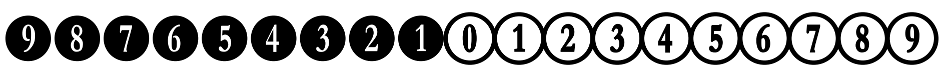
In continuing with this concept, based on the behaviors which we have established, we can determine that the three alpha charged particles, these being the ①, the ④, and the ⑦, can be considered to have a higher form of energy than the three beta charged particles, these being the ②, the ⑤, and the ⑧. This is due to the fact that as a consequence of the requisite charge conservation, alpha charged particles can break down into beta charged particles, though beta charged particles cannot break down into alpha charged particles, as well as the fact that due to the same requisite charge conservation, two beta charged particles can merge together to become an alpha charged particle, though two alpha charged particles cannot merge together to become a beta charged particle. Furthermore, we can determine that while there is a hierarchy to the alpha/beta charge which is possessed by the 1,4,7 and 2,5,8 family group member particles, it is of no consequence to the neutral energy which is possessed by the ③, the ⑥, and the ⑨, as they facilitate all of the intra-family group interactions, independent of the alpha/beta (color) charge of the particle with which they are interacting.

That brings this section to a close. We will revisit the concepts of charged particles and neutral energy particles again in sections seven and eight. Until then, we will go back to viewing the numbers as generic quanta.

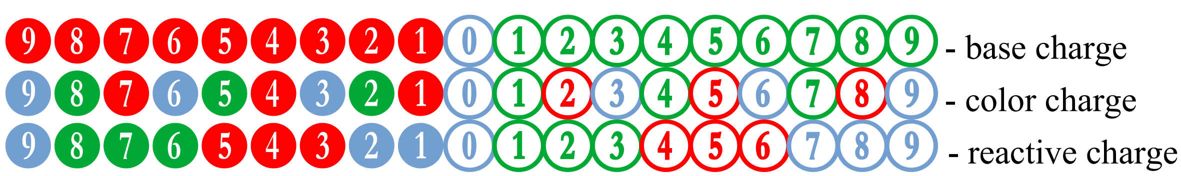
Section Four:
"Negative Numbers"

In this section, we will examine negative base charged numbers. At this point, outside of a brief explanation of the concept of positive/negative sibling mirroring, we have yet to address the fact that all of the positive base charged numbers which we have been working with have negative base charged counterparts, all of which possess various forms of anti-charge. The specifics of the overall concept of anti-charge are explained thoroughly in "Quantum Mathematics and the Standard Model of Physics Part Nine: 'Conserved Interactions and Anti-Charge' ", though for our current purposes, we can establish that conserved interactions can yield negative base charged solution numbers, and these negative base charged numbers possess various forms of anti-charge, all of which will be explained as we progress. (It should be clarified at this point that while negative base charge will be referred to throughout as such, it is technically a form of anti-charge, in that negative base charge can also be referred to as "anti-base charge".)

The nine negative base charged single-digit numbers are shown below, represented as quanta, and oriented to the left of the neutral base charged 0, which itself is oriented to the left of the nine positive base charged single-digit quanta.



Above, we see a total of nineteen quanta, with the positive and negative base charged quanta oriented to the right and left of the neutral base charged 0, respectively. Below, this same group of quanta is shown three more times, with the rows of quanta highlighted in base, color, and reactive charge color codes.



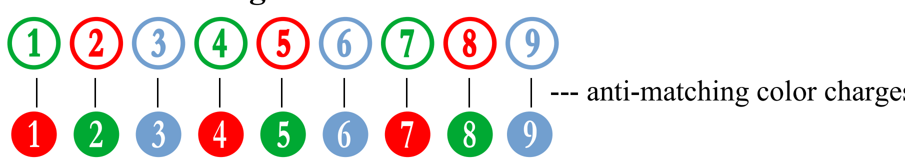
Above, in the topmost row of the chart, we can see the obvious fact that all of the positive base charged numbers possess a positive base charge, and all of the negative base charged numbers possess a negative base charge, which is indicated with green and red highlighting, respectively (as has been mentioned previously, the 0 possesses a neutral base charge, which is indicated above with blue highlighting). While the specifics of negative base charge are simple, we will find that color and reactive charge each involve more complex forms of anti-charge, as is indicated in the center and bottom rows of quanta, respectively. All of the various forms of anti-charge can be considered to be either introverted or antiverted charges, with the concepts of introversion and antiversion both involving unique forms of mirroring, which will be explained as we progress.

We will start with color charge. As we can see in the chart above, in addition to the three standard forms of color charge, these being green charge, red charge, and blue charge, there are three forms of anti-color charge, these being anti-green charge, anti-red charge, and anti-blue charge. The interrelations between the various color charges are relatively simple, in that the standard color charges and anti-color charges which are semantically matching display behavioral mirroring between one another, while the standard color charges and anti-color charges which are semantically mirrored display behavioral matching between one another. This means that even though green charge and anti-green charge are semantically similar, in that they both involve the word "green", they actually display behavioral mirroring between one another, which is why the words "anti-green" are highlighted in red. This means that in most situations, an anti-green charge displays behavioral matching in relation to red charge. While the same is true in relation to anti-red charge, in that it in most situations, it displays behavioral matching in relation to green charge, and the same is also true in relation to anti-blue charge, in that in most situations, it displays behavioral matching in relation to blue charge. All of these interrelations are indicated in the chart which is shown below.

green charge / anti-green charge - introversion (anti-matching) - behavioral mirroring
green charge / anti-red charge - antiversion (anti-mirroring) - behavioral matching
red charge / anti-red charge - introversion (anti-matching) - behavioral mirroring
red charge / anti-green charge - antiversion (anti-mirroring) - behavioral matching
blue charge / anti-blue charge - introversion/antiversion (anti-matching/anti-mirroring)

We will first examine the concept of color charge introversion, which involves the form of mirroring which is displayed between the color charges which are possessed by oppositionally base charged instances of numerically matching quanta. Below is a chart which contains the nine positive base charged single-digit quanta oriented above the nine negative base charged single-digit quanta, with the instances of numerically matching quanta all aligned vertically, and with the quanta all highlighted in a color charge color code.

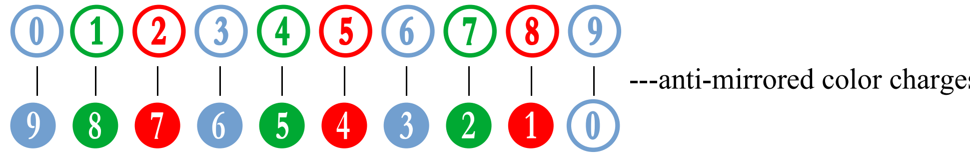
color charge introversion



Above, we can see that the flip of a quanta to a numerically matching though oppositionally base charged quanta causes an introversion of its color charge. This means that the color charges which are possessed by oppositionally base charged instances of numerically matching quanta can be said to display anti-matching between one another, though anti-matching is simply a convoluted form of mirroring which involves anti-charges.

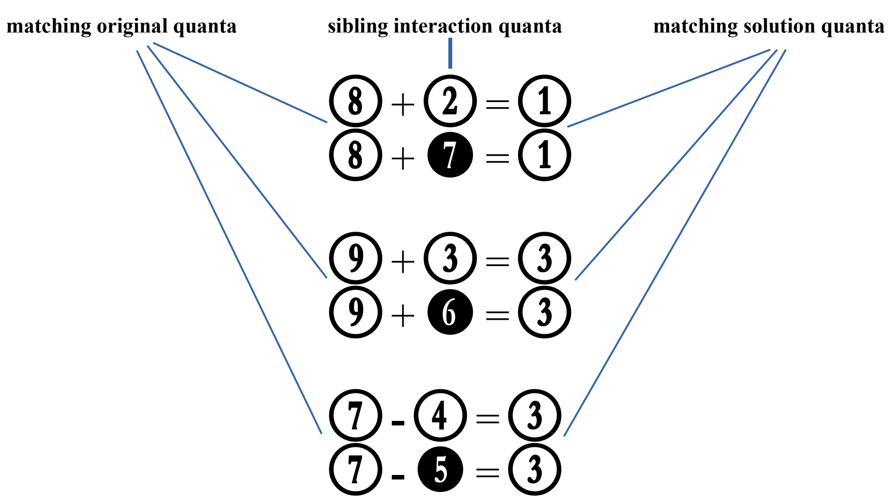
Next, we will examine the concept of color charge antiversion, which involves the form of matching which is displayed between the color charges which are possessed by oppositionally base charged instances of siblings. This form of matching can be seen in the chart which is shown below, with this chart containing the nine positive base charged single-digit quanta, which are again oriented above the nine negative base charged single-digit quanta, though this time with the instances of oppositionally base charged siblings all aligned vertically, and with the quanta all highlighted in a color charge color code.

color charge antiversion



Above, we can see that the flip of a quanta to its oppositionally base charged sibling causes an antiversion of its color charge. Color charge antiversion is one aspect of the familiar concept of positive/negative sibling mirroring, in that as was mentioned in section one, a negative base charged quanta is interchangeable with its positive base charged sibling. This means that we can consider the negative base charged sibling of a quanta to be an anti-version of that particular quanta, in that even though its color and reactive charges are semantically mirrored, in both cases, they display behavioral matching between one another. (The behavioral matching which is displayed between the reactive charges which are possessed by oppositionally base charged siblings will be seen in section six.) As is explained in "Quantum Mathematics and the Standard Model of Physics Part Nine: 'Conserved Interactions and Anti-Charge' ", this behavioral matching occurs due to the fact that the term "anti-" can be considered to indicate a form of polarity, while the concept of mirroring also involves an inherent polarity, therefore anti-mirroring can be considered to be equivalent to two distinct forms of polarity, or mirrored mirroring, which involves a convoluted form of matching.

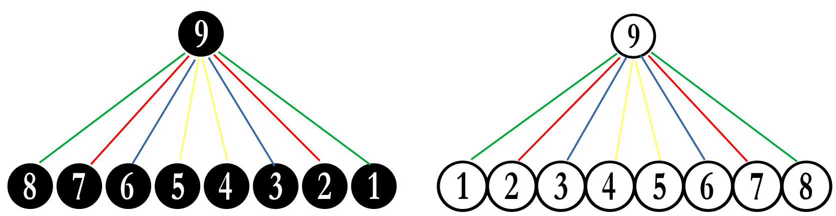
The equivalency which is maintained between a quanta and its oppositionally base charged sibling is shown below, with a chart that contains three pairs of interactions, each of which involves interaction quanta which consist of a pair of oppositionally base charged siblings.



Above, we can see the equivalency which is maintained between oppositionally base charged siblings, in that all three sets of interactions yield solution quanta whose positive base charged condensed values display matching between one another. The cause of the equivalency which is maintained between instances of oppositionally base charged siblings will be explained in the next section.

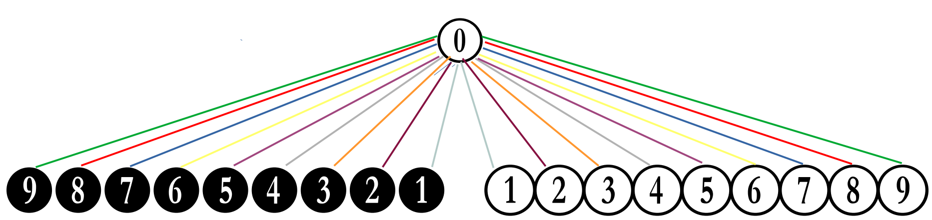
Section Five:
"Base Charge, Sibling Charge, and Reciprocity"

The cause of the equivalency which is maintained between oppositionally base charged instances of siblings that was seen at the end of the previous section involves the concept of base charge, and its interrelation with the concept of sibling numbers, in that base charge is simply a separate aspect of the sibling relationship which the various pairs of base numbers maintain between one another. As is explained in "Interlude Two (Hundred and Seventy-Three): 'Quantum Mathematics and the Modern Gregorian Calendar' ", sibling numbers share an inherent relationship between one another that exists due to a unique form of polarity which involves an additive reciprocity around the 9, with this form of polarity, which is referred to as "sibling charge", causing the siblings to display a form of opposition between one another, as is shown in the chart below. (The next two charts contain arbitrary highlighting which indicates the individual pairs of either sibling or numerically matching numbers.)



Above, we can see that each of the pairs of positive base charged siblings adds to the ⑨, as is also the case in relation to the pairs of negative base charged siblings, each of which adds to the ❾. Also, we can see that in each case, the base set displays a perfect form of reciprocity around its respective base charged ⑨, in that the pairs of connecting lines are all equally spaced between the sibling pairs.

While we can consider base charge to be the positive/negative number equivalent of sibling charge, which is due to the fact that that in addition to having a positive base charged sibling polar, each positive base charged number also has a negative base charged numerically matching polar, with this form of positive/negative polarity involving what we have been referring to as "base charge", as is indicated in the chart below.



Above, we can see that each of the oppositionally base charged instances of numerically matching numbers adds to the ⓪. Also, we can see that in this case, the members of the two base sets collectively display a perfect form of reciprocity around the ⓪, in that the pairs of connecting lines are all equally spaced between the pairs of numerically matching numbers.

The interrelation which is maintained between sibling charge and base charge, as well as the unique characteristics of those two charges, exist as a consequence of the fact that while the 9/0 unity may appear to be a duality, upon closer examination, we can determine that due to the existence of the -9, the 9/0 unity is actually a trinity, as will be explained more thoroughly in section seven. Though for our current purposes, we can determine that the 9 and the -9 are a duality, with this duality allowing the positive and negative base charged single-digit numbers to display two uniquely perfect forms of reciprocity, while the 0 aspect of the 9/0 unity is a singularity, in that there is no negative base charged 0, nor is there a positive base charged 0, there is only the neutral base charged 0, with this singularity allowing the positive and negative base charged single-digit numbers only one number around which they can all display a perfect form of reciprocity.

The interrelation between sibling charge and base charge is an important concept, one which is explained more thoroughly in "Quantum Mathematics and the Standard Model of Physics Part Eight: 'Sibling Similarity and Base Charge' ".

Though while we are on the subject of related numbers and reciprocity, it should be briefly noted that the cousin relationship that exists between various pairs of numbers which was mentioned in section one involves a multiplicative reciprocity around the 1. As is explained in "Chapter One: Cousins and Decimals", the pairs of non-3,6,9 family group cousins can be yielded through the interrelated concepts of quality and quantity via repeated division of the 1 by the 2, and this is shown in the chart below, which contains three iterations of the /2 division function, these being "1/2=.5", ".5/2=.25", and ".25/2=.125".

```
            cousins
             /  \
quantity 1 quality 1                         1(1)
                                       /               \
quantity 2 quality 5             .5(5)                     .5(5)
                                /     \                   /     \
quantity 4 quality 7       .25(7)      .25(7)       .25(7)       .25(7)
                          /     \     /     \      /     \      /     \
quantity 8 quality 8  .125(8) .125(8) .125(8) .125(8) .125(8) .125(8) .125(8) .125(8)
```

Above, on the left side of the chart, we can see that the initial instance of the 1 involves a quantity of one and a quality of 1, with this quantity and quality involving two instances of the self-cousin 1. While below this initial instance of the 1, we can see that the function of "1/2" yields a quantity of two solution numbers, each of which possesses a quality of 5, with this quantity and quality involving an instance of the 2/5 cousins. Next, we can see that the division of each of these two instances of **.**5 by the 2 yields a quantity of four solution numbers, each of which possesses a quality of 7, with this quantity and quality involving an instance of the 4/7 cousins. Then, we can see that the division of each of these four instances of **.**25 by the 2 yields a quantity of eight solution numbers, each of which possesses a quality of 8, with this quality and quantity involving two instances of the self-cousin 8.

Next, we will perform three more iterations of the /2 division function, the solutions to which are included in the chart below (in this case, the chart is shown condensed due to a lack of space).

cousins

quantity 16(**7**)	quality **4**	16 of **.**0625(4)
quantity 32(**5**)	quality **2**	32 of **.**03125(2)
quantity 64(**1**)	quality **1**	64 of **.**015625(1)

Above, we can see that the behavior which involves the cousin pairs appearing in the quality and the condensed value of the quantity of the solution numbers continues on through three more iterations of the /2 division function, indicating that this behavior continues on to infinity.

Continuing on with this concept, as is explained in "Interlude Two (Hundred and Seventy-Three): 'Quantum Mathematics and the Modern Gregorian Calendar' ", multiplicative inverses maintain a form of reciprocity between one another, one which can be indicated with instances of reciprocal fractions, as any whole number can be represented as a fraction, in that for example the 2 can be represented by the fraction 2/1, as is also the case in relation to decimal numbers, in that for example the decimal number **.**5 can be represented by the fraction 1/2. We can use reciprocal fractions to indicate that the reciprocity which is described above maintains in relation to all of the non-3**,**6,9 family group member cousins, as can be seen in the chart which is shown below. Though it should be noted that the chart below does not include the fractions 3/1, 6/1, 7/1, or 9/1, which is due to the fact that the reciprocal fractions 1/3, 1/6, 1/7, and 1/9 all involve invalid functions. (To clarify, the term "invalid function" refers to any "/3", "/6", "/7", or "/9" divisive interaction, as most of these individual interactions yield infinitely repeating decimal number solutions, which involve an alternate method of condensation, and condense to values which display an alternate set of behaviors and characteristics. The overall concept of invalid functions has been examined extensively in "Chapter Eight: Solving the Invalid Functions", while infinitely repeating decimal numbers are seen throughout multiple chapters of "The Big Book of Quantum Mathematics", including "Chapter Two: Infinitely Repeating Decimal Numbers".)

reciprocal fractions	**multiplicative reciprocals**	**condensed values**
1/1 - 1/1	1 - 1	1/1 self-cousins
2/1 - 1/2	2 - **.**5	2/5 cousins
4/1 - 1/4	4 - **.**25	4/7 cousins
5/1 - 1/5	5 - **.**2	2/5 cousins
8/1 - 1/8	8 - **.**125	8/8 self-cousins

The behaviors which are described above indicate that multiplicative reciprocity around the condensed 1 is simply another manner in which we can describe the opposition which is maintained between the concepts of the quality and the quantity of a number, with this opposition being indicative of the fact that the overall concepts of quality and quantity are themselves reciprocals of one another. The opposition which is maintained between the concepts of the quality and the quantity of a number, as well as the interrelation of the concepts of quality and quantity with the overall concept of cousin numbers is explained in "Chapter One: Cousins and Decimals", therefore at this point, we can move on to the next section, where we will continue our examination of anti-charge.

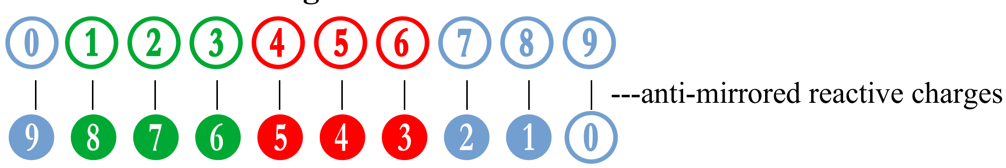
Section Six:

"Reactive Charge Disharmony and Trinities of Charge"

We will begin this section by examining the concept of anti-reactive charge. There are three unique forms of anti-reactive charge, these being anti-first charge, anti-second charge, and anti-third charge, and as will be explained in a moment, the three forms of anti-reactive charge and the three forms of standard reactive charge display an unexpected lack of anti-matching between one another in relation to oppositionally base charged instances of numerically matching quanta.

Though we will start with the most straightforward of the forms of mirroring which are displayed between the various reactive charges, this being the anti-mirroring which is displayed between the reactive charges which are possessed by oppositionally base charged pairs of siblings. This reactive charge antiversion can be seen in the chart below, with this chart containing the nine positive base charged single-digit quanta, which are oriented above the nine negative base charged single-digit quanta, with the instances of siblings all aligned vertically, and the quanta highlighted in a reactive charge color code.

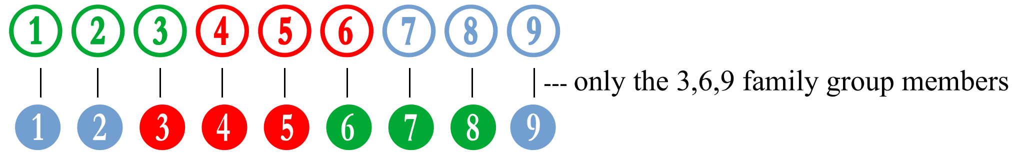
reactive charge antiversion



Above, we can see that the reactive charges which are possessed by oppositionally base charged pairs of siblings all display anti-mirroring between one another. This anti-mirroring confirms the fact that as was mentioned in section four, negative base charged quanta can be considered to be anti-versions of their positive base charged siblings, as both their color and reactive charges display anti-mirroring between one another.

Next, we will examine the lack of the anti-matching which we would expect to see displayed between the reactive charges which are possessed by oppositionally base charged instances of numerically matching quanta, which can be seen in the chart which is shown below, with this chart containing the nine positive base charged single-digit quanta, which are again oriented above the nine negative base charged single-digit quanta, though this time with the oppositionally base charged instances of numerically matching quanta all aligned vertically, and with the quanta highlighted in a reactive charge color code.

reactive charge introversion



Above, we can see that the only instances of oppositionally base charged numerically matching quanta whose reactive charges display anti-matching between one another are those which involve the members of the 3,6,9 family group.

The lack of reactive charge introversion which is seen above is indicative of the fact that unlike base and color charge, reactive charge does not display a perfect form of mirroring in relation to oppositionally base charged instances of numerically matching quanta. This is the second time that we have found flaws in the mirroring which is displayed between the various reactive charges, in that as was explained in section three, it is exclusively the instances of the lack of reactive charge conservation which contribute to the instances of the lack of overall charge conservation which prevent certain interactions from being possible.

The two flaws which are mentioned above are exclusive to reactive charge, in that neither of these, or any other of these types of flaws, are displayed by either base or color charge. However, it needs to be clarified that neither of these flaws can be directly attributed to the various reactive charges themselves, as these two flaws both occur in relation to the interaction which occurs between the reactive charges and the numerical aspect of the numbers. The behaviors which are displayed by the reactive charges are sound, as was explained in section two, as are the behaviors which are displayed by the numbers themselves, as has been seen throughout. Though as has been seen multiple times, when the reactive charges and the numbers each rely on characteristics of the other, the results tend towards disharmony.

However, this disharmony occurs by design, in that it is less of a flaw and more of a limiting mechanism, or more to the point, it is a logical manifestation of a physical law, in that it is a quantum mathematical explanation for why certain physical interactions can occur while others cannot. Whether we have viewed them as numbers, quanta, or particles, the behaviors which we have established that they display have for the most part been grouped by color charge, in that the 1,4,7, 2,5,8, and 3,6,9 family group members all display unique forms of behavior, all of which have been explained up to this point. Though we can now clarify that it is actually the reactive charges which are causing some of this color charge exclusive behavior. This indicates that the reactive charges can be considered to be the inner workings of color charge, meaning that reactive charge is the reason that color charge displays some of the behaviors that it does, in that while the lists of conserved interactions which were seen in section three all indicate behavior which varies based off of color charge, we have since determined that it is actually the reactive charges which prevent the non-conserved interactions from being quantum mathematically possible. Therefore, without the aforementioned disharmony that is maintained between the reactive charges and the quality of the numbers, the numbers would not display the color charge exclusive behaviors which were detailed in section three.

This means that we can now establish that the trinity of charges which all numbers possess involves two interrelated forms of charge, these being color and reactive charge, along with a third, more independent form of charge, this being base charge. In a similar manner, each of these three charges involves an interrelated polarity along with an accompanying neutrality, with each of the polarities involving a unique variation on the generic polar concepts of positive and negative, which as we have seen several times throughout this book, always include an inherent form of neutrality. In relation to base charge, the generic concepts of positive and negative are represented by positive base charge and negative base charge, with this polarity both requiring and allowing for the inherent concept of a neutral base charge. While in relation to color charge, the polars of green charge and red charge require and allow for the neutrality of blue charge, and in relation to reactive charge, the polars of first charge and second charge require and allow for the neutrality of third charge (these interrelations also apply in relation to the anti-charges, in that anti-red charge and anti-green charge require and allow for anti-blue charge, and anti-first charge and anti-second charge require and allow for anti-third charge).

This is all indicative of the important fact that in addition to being a prerequisite for the existence of the duality of positive and negative, neutrality also arises as a consequence of the duality of positive and negative, in that without the duality of positive and negative, the default option is neutrality (in the form of nothing), while the inclusion of the duality of positive and negative includes the additional option of both positive and negative together, with this inherent option involving an alternate form of neutrality. We have already determined that a positive is simply a lack of a negative, in that "neutral - negative = positive", and inversely, a negative is simply a lack of a positive, in that "neutral - positive = negative", while a positive and a negative together yield a neutral, in that "positive + negative = neutral". What all of this means is that positive only arises due to a lack of negative, while negative only arises due to a lack of positive, and a lack of both positive and negative involves a form of neutrality, which inherently contains the potential for the duality of positive and negative, which together involve another form of neutrality.

A simple explanation of the interrelations which are explained above can be seen in the chart which is shown below, with each of the "A's" representing a generic positive, and each of the "B's" representing a generic negative, while the "C" and the "D" represent two unique forms of a generic neutrality, all of which is explained below the chart.

option		**quality**
A	positive	-B
B	negative	-A
C	neutral	-A, -B
D	neutral	A, B

Above, we can see that option "A" involves a lack of option "B", and option "B" involves a lack of option "A", while option "C" involves a lack of both option "A" and option "B". Though option "D" involves both option "A" and option "B" together, with these two options involving a lack of option "B" and a lack of option "A", respectively, which means that option "D" is simply a mirrored version of option "C", in that "A, B" is equivalent to "-B, -A".

That brings this section to a close. We will examine another example of this overall type of trinity, this being the 9/0 unity, in the next section.

Section Seven:
"Octaves and the 9/0 Unity"

In continuing to discuss the types of trinities which we examined towards the end of the previous section, it should be noted at this point that the 9/0 unity involves a polarity along with an accompanying neutrality, in that the 9 is the greatest of the base numbers, the -9 is the least of the negative base numbers, and the 0 acts as the neutrality which resides between those two polars. The 9/0 unity is unique for a variety of reasons, a few of which are explained below.

As the only self-sibling number, the 9 is the only one of the base numbers which maintains a perfectly balanced reciprocity with its anti-version, as is indicated in the chart which is shown below, in which the ⓪, the ⑨ and the ❾ are all highlighted in a color charge color code.

❾❽❼❻❺❹❸❷❶⓪①②③④⑤⑥⑦⑧⑨

Above, we can see that while every other oppositionally base charged pair of siblings maintains an orientational imbalance around the ⓪, the ⑨ and the ❾ are each nine steps removed from the ⓪.

The various reasons which the 9 and the 0 are considered to be the same number are seen throughout "The Big Book of Quantum Mathematics", and a few of those reasons will be briefly mentioned here. We will start with the fact that the 9 and the 0 are the only two numbers which are considered to be attractive in relation to the multiplication function, as is shown below.

⑤ X ⓪ = ⓪(⑨)   ⑤ X ⑨ = ㊺(⑨)
⑦ X ⓪ = ⓪(⑨)   ⑦ X ⑨ = (63)(⑨)

Above, on the left side of the chart, we see two arbitrary interactions which indicate the obvious fact that any number which is multiplied by the 0 yields a solution number of 0, and on the right side of the chart, we see two arbitrary interactions which indicate the somewhat less obvious fact that any number which is multiplied by the 9 yields a solution number which condenses to the 9. These behaviors are due in part to the fact that blue charge is considered to be color charge attractive in relation to the multiplication function, as is explained in "Quantum Mathematics and the Standard Model of Physics Part Five: "Color and Reactive Charges". As the concept of color charge attraction is not immediately relevant, we will move along with our examination of the 9/0 unity.

In briefly examining the 0 aspect of the 9/0 unity, we can determine that the 0 has no effect on any of the charges, nor the non-condensed or condensed value of any number with which it interacts via the +/- sibling functions, as is shown below.

⑤ + ⓪ = ⑤　　　⑤ - ⓪ = ⑤

The fact that the 0 has no effect on the positive base charged condensed value of a number via either of the +/- sibling functions is one more reason that the 0 is considered to be another aspect of the 9, as in similar fashion, neither the 9 nor the -9 has any effect on the positive base charged condensed value of a number via either of the +/- sibling functions, as is shown below.

② + ⑨ = ②　　　② - ⑨ = ②

② + ❾ = ②　　　② - ❾ = ②

Above, we can see that all four of these interactions yield identical solution quanta, at least in terms of their positive base charged condensed values. The solutions to these interactions differ strictly in relation to their non-condensed values (none of which are shown above), in that "②+⑨=⑪(②)", while "②+❾=❼(②)", and "② - ⑨=❼(②)", while "② - ❾=⑪(②)". These alternate non-condensed values are indicative of the fact that the 9 and the -9 facilitate changes in the octave of a number via the +/- sibling functions, as is explained below.

In discussing the effects which the 9 has on other numbers via the +/- sibling functions, we must briefly examine the overall concept of quantum mathematical octaves. In quantum mathematics, all multiple-digit numbers are considered to be octaves of the single-digit base number which they condense to, which means that higher octaves are numbers which have a greater quality than, though in terms of condensed value are interchangeable with, lower octaves, as is indicated in the chart below.

octaves of the 4　　octaves of the 2　　octaves of the 6

④ + ② = ⑥

⑬ + ⑪ = ㉔(⑥)

㉒ + ⑳ = ㊷(⑥)

㉛ + ㉙ = (60)(⑥)

Above, we see four separate interactions, the first of which involves the ④ as an original quanta and the ② as an interaction quanta, which together yield a solution quanta of ⑥. While each of the other interactions involves an original quanta which is an octave of the ④ and an interaction quanta which is an octave of the ②, which in each case yield a solution quanta which is an octave of the ⑥.

In continuing with the concept of octaves, every multiple-digit number possesses a color charge which displays matching in relation to that which is possessed by the base number of which that multiple-digit number is an octave, as well as in relation to that which is possessed by any other number which is an octave of that particular base number, as is shown in the chart below.

color charge

While the same is also true in relation to reactive charge, as is shown below.

reactive charge

This matching color and reactive charge characteristic maintains in relation to negative base charged octaves as well, though this matching comes in the form of anti-mirroring, as is shown below.

anti-color charge

anti-reactive charge

Throughout this book, we have been working almost exclusively with the condensed value of any multiple-digit number that we have encountered, which we have been referring to as the "quality" of the number. This is due to the fact that multiple-digit numbers display characteristics and behaviors that are similar to those which are displayed by their lesser octaves, for reasons which can be seen in the three charts that are shown immediately above. Therefore, at this point, we need to make the important clarification that when we say that a multiple-digit number condenses to one of the base numbers, this actually means that the multiple-digit number in question behaves like a greater version of the base number to which it condenses.

As was mentioned a moment ago, it is exclusively interactions with the 9 via the +/- sibling functions which cause alterations in the octave of a number. This is indicated in the chart below, which contains a series of interactions in which the ⑨ is repeatedly added to an initial instance of the ⑤.

$$\textcircled{5}+\textcircled{9}=\textcircled{14}\left(\textcircled{5}\right)$$
$$\textcircled{14}+\textcircled{9}=\textcircled{23}\left(\textcircled{5}\right)$$
$$\textcircled{23}+\textcircled{9}=\textcircled{32}\left(\textcircled{5}\right)$$
$$\textcircled{32}+\textcircled{9}=\textcircled{41}\left(\textcircled{5}\right)$$
$$\textcircled{41}+\textcircled{9}=\textcircled{50}\left(\textcircled{5}\right)$$
$$\textcircled{50}+\textcircled{9}=\textcircled{59}\left(\textcircled{5}\right)$$

Above, we can see that repeated additions of the $\textcircled{9}$ to an initial instance of the $\textcircled{5}$ cause the non-condensed value of the quanta to continue to grow, while the condensed value remains the same throughout. (This behavior also maintains in relation to multiples of the 9, for example 5+18=23(5).)

The behavior which is seen in the chart above is responsible for the fact that as was seen in section three, the unaccounted for value which is associated with the consensation of a multiple-digit number always involves a multiple of the 9. This means that the method of division which was seen in section three can be used to determine how many octaves above its corresponding base number a multiple-digit number is, as is shown below, in relation to the arbitrary multiple-digit number 91.

non-condensed value — condensed value: 91(1)

unaccounted for value: 91-1=90

octave: 90/9=10

Above, we can see on the left of the chart that by simple condensation, we can determine that 91 is an octave of the 1, then we can see in the center of the chart that by subtracting the condensed value of 1 from the non condensed value of 91, we can yield the unaccounted for value of 90, which we can then divide by the 9 in order to determine that 91 is the tenth octave of the 1, as is shown on the right of the chart.

As was mentioned in section zero, and has been seen throughout this book, quantum mathematics causes numbers to display behavior which is similar to that which is displayed by the notes which comprise the musical scale. From left to right, the white keys on a piano progress through the notes of *A*, *B*, *C*, *D*, *E*, *F*, and *G,* assuming that we start on an *A* note, of course. Though after the first *G* note, the keys do not progress to an *H* note, they instead progress to an *A* note which is one octave higher than the previous *A* note, with the following notes being higher octaves of *B,C,D,E,F,* and *G*, before the pattern repeats with another *A* note which is two octaves higher than the original *A* note. Quantum mathematics causes numbers to display similar patterned behavior, with these patterned behaviors also being displayed by the frequencies which comprise the electromagnetic spectrum. This behavior arises due to inherent characteristics of the numbers, characteristics which are shared by sound in the form of the musical scale of *A*, *B*, *C*, *D*, *E*, *F*, *G*, ..., as well as by light in the form of the color spectrum of *Red*, *Orange*, *Yellow*, *Green*, *Blue*, *Indigo*, *Violet*, … .

For the most part, octaves were not a part of "The Big Book of Quantum Mathematics", though the overall concept of octaves has since been examined in a stand-alone chapter which can be found here. Therefore, we will bring an end to our brief examination of the 9 and its effects on octaves, in order to finally complete our examination of anti-charge.

Getting back to the concept of anti-charge, while also getting back to our particle analogy, we have already identified three alpha particles, these being the ①, the ④, and the ⑦, and three beta particles, these being the ②, the ⑤ and the ⑧, though we must now also include three anti-beta particles, these being the ❷, the ❺, and the ❽, each of which is an anti-version of one of the three alpha particles, as well as three anti-alpha particles, these being the ❶, the ❹, and the ❼, each of which is an anti-version of one of the three beta particles. Furthermore, in addition to the three previously identified neutral energy particles, these being the ③, the ⑥, and the ⑨, we must now also include three anti-neutral energy particles, these being the ❸, the ❻, and the ❾. These nine anti-versions are all numerically related to their standard counterparts as siblings, though they possess a negative base charge, along with anti-mirrored color and reactive charges, as has been explained previously. Taking all of that into account, and assuming that we include the 0 aspect of the 9/0 unity independently of the 9 and the -9, we now have a total of nineteen unique particles with which we can work, as is shown below, with the particles all highlighted in an alpha/beta/neutral (color charge) color code.

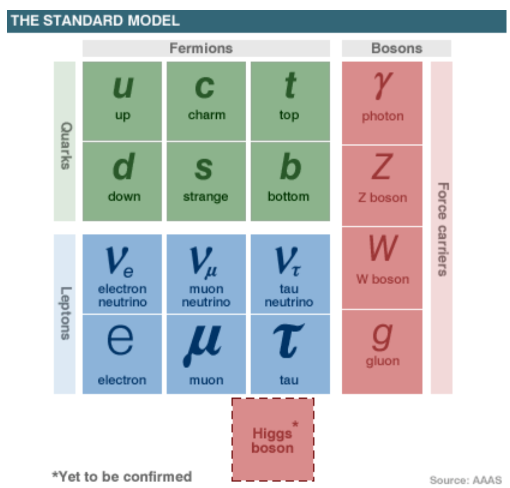
❾❽❼❻❺❹❸❷❶⓪①②③④⑤⑥⑦⑧⑨

As was explained a moment ago, the nineteen particles which are seen above can be considered to be archetypal, in that there is an endless supply of unique particles, each of which is a heavier (greater) version of one of the nineteen particles which are shown above. These nineteen particles, along with their characteristics and behaviors, allow for a comparison between quantum mathematics and the standard model of physics, as will be explained in the next section.

Section Eight:
"Quantum Mathematics and the Standard Model of Physics"

In this section, we will once again examine the nineteen particles which were seen at the end of the previous section, though this time we will examine them in relation to the standard model of physics. This will by no means be a technical comparison, instead, this comparison will involve the simplest of layman terminology, and will be undertaken with a full understanding that there is a vast gulf between the theory of quantum mechanics and the theory of quantum mathematics. This is simply a brief examination of the multitude of fundamental similarities which these two theories display between one another. (All of the examples which will be seen in this section will be highlighted in a color charge color code, with the exception of the lone example involving reactive charge, which will obviously be highlighted in a reactive charge color code.)

Below is a chart which contains a common interpretation of the Standard Model of Physics, which is being included here as a reference. (The chart which is seen below is thanks to AAAS.)



We will start with the fact that the standard model of physics contains six progressively heavier quarks, which come in three related pairs, and possess a variety of charges, including an electric charge, which can be positive or negative, or in some cases neutral, and a color charge, which can be one of the three unique forms of color charge, along with several other charges and characteristics, such as strangeness and flavor. While quantum mathematics contains six charged particles of progressively greater quality, which come in three pairs, each of which are related as siblings, and possess a variety of charges, including a base charge, which can be positive or negative, or in the case of the 0, neutral, and a color charge, which can be one of the three unique forms of color charge, along with several other charges and characteristics, such as reactive charge, and the previously unmentioned characteristics of oddness and evenness. These six charged particles are shown below.

1 2 4
8 7 5

In quantum mechanics, quarks can interact with one another via force carrier particles, with these force carrier particles possessing some of the same charges as the quarks, along with characteristics which are unique from those which are displayed by the quarks. In quantum mathematics, charged particles can interact with one another via neutral energy particles. These neutral energy particles possess the same charges as the charged particles, along with characteristics which are unique from those which are displayed by the charged particles. These five neutral energy particles are shown below. (In this example as well as the next, the three aspects of the 9/0 unity are considered to be a single particle.)

9 6 3 0 3 6 9

In quantum mechanics, the various particles all derive their charges from the Higgs boson, which pervades space, and is referred to as the "God particle". In quantum mathematics, the various particles all derive their charges from the 9/0 unity, which as is explained in "Quantum Mathematics and the Standard Model of Physics Part One: 'The Birth of Siblings' ", pervades the quantum mathematical realm, and is referred to as the "9/0 sacred whole". The thee aspects of the 9/0 unity are shown below.

9 0 9

Quantum mechanics endeavours to find heavier versions of particles, which possess a greater mass than the lighter versions. In quantum mathematics, there are an unlimited selection of heavier versions of particles, which are simply greater octaves of the lighter particles. A sampling of these heavier particles is shown below.

1 2 3 4 5 6 7 8 9
10 11 12 13 14 15 16 17 18
19 20 21 22 23 24 25 26 27...

In quantum mechanics, every particle has a negatively charged anti-particle, which possesses opposite forms of its various charges. In quantum mathematics, every charged particle has an anti-base charged numerically matching particle, which possesses mirrored forms of its various charges. Furthermore, in quantum mathematics, every charged particle also has an anti-version of itself, which possesses anti-mirrored (matching) forms of charge. These anti-particles and anti-versions are shown below.

anti-particle								
9	8	7	6	5	4	3	2	1
9	8	7	6	5	4	3	2	1

anti-version								
9	1	2	3	4	5	6	7	8
9	8	7	6	5	4	3	2	1

Though as is explained in section six, the anti-matching which is displayed between the reactive charges which are possessed by the various instances of anti-particles involves more of a weak mirroring, as is shown below, with the same chart that is seen above, only with the quanta highlighted in a reactive charge color code.

anti-particle								
9	8	7	6	5	4	3	2	1
9	8	7	6	5	4	3	2	1

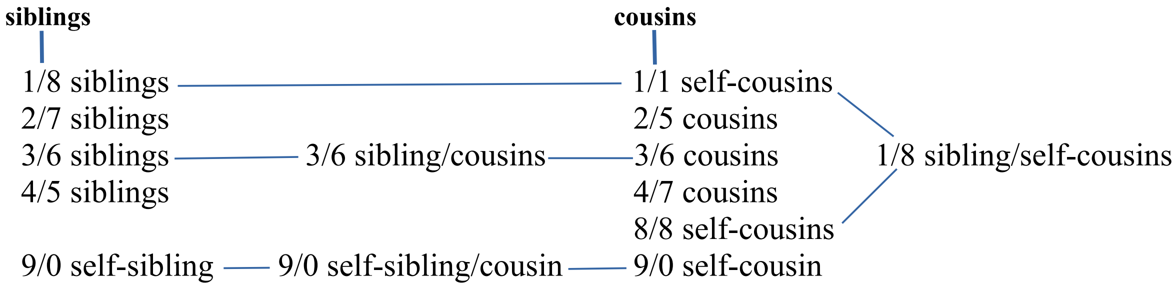
anti-version								
9	1	2	3	4	5	6	7	8
9	8	7	6	5	4	3	2	1

As is the case with the flaws in the reactive charge conservation of certain interactions which were seen in section three, the disharmony which is seen above in relation to anti-particles is a logical manifestation of a physical law, with the physical law in this case involving a quantum mathematical explanation for the quantum mechanical concept of charge parity violation, which involves antiparticles displaying behavior which is slightly divergent from that which is displayed by their positively charged counterparts.

In quantum mechanics, quarks must have a baryon number of 1/3, and possess an electrical charge of either 1/3 or 2/3. In quantum mathematics, both color and reactive charge display behavior which matches that which is displayed by the fractions 1/3, 2/3, and 3/3, as do the members of the 3,6,9 family group, as is indicated in the chart which was seen in section two, and which is shown again below, in which the values of "1/3", "2/3", and "3/3" are interchangeable with the color charges "green", "red", and "blue", respectively, as well as the reactive charges "first", "second", and "third", respectively, as is indicated by the green, red, and blue highlighting.

3+3= **6**(6) is equivalent to 1/3+1/3=2/3 (2/3)
6+6=**12**(3) is equivalent to 2/3+2/3=4/3 (1 1/3)
3+6= **9**(9) is equivalent to 1/3+2/3=3/3 (1)
3+9=**12**(3) is equivalent to 1/3+3/3=4/3 (1 1/3)
6+9=**15**(6) is equivalent to 2/3+3/3=5/3 (1 2/3)
9+9=**18**(9) is equivalent to 3/3+3/3=6/3 (2)

In certain quantum mechanical situations, a particle can be its own antiparticle. In quantum mathematics, the 9 can be its own anti-particle, while the 1 and the 8 can each be their own cousin. All of the various relationships which are maintained between the base numbers are indicated in the chart which was seen in section one, and which is shown again below.



In quantum mechanics, particles can absorb and release one another, while maintaining conservation of mass and charge. In quantum mathematics, particles can absorb and release one another, while maintaining conservation of quality and charge, as can be seen in the lists of conserved additive and subtractive interactions which were seen in section three, and which are shown again below.

1+3=4	2+3=5	2+2=4	3+3=6
1+6=7	2+6=8	2+5=7	3+6=9
1+9=1	2+9=2	2+8=1	3+9=3
4+3=7	5+3=8	5+2=7	
4+6=1	5+6=2	5+5=1	
4+9=4	5+9=5	5+8=4	
7+3=1	8+3=2	8+2=1	
7+6=4	8+6=5	8+5=4	
7+9=7	8+9=8	8+8=7	

1-3=7	1-1=9	1-2=8	2-3=8	2-2=9	3-3=9
1-6=4	1-4=6	1-5=5	2-6=5	2-5=6	3-6=6
1-9=1	1-7=3	1-8=2	2-9=2	2-8=3	3-9=3
4-3=1	4-1=3	4-2=2	5-3=2	5-2=3	6-3=3
4-6=7	4-4=9	4-5=8	5-6=8	5-5=9	6-6=9
4-9=4	4-7=6	4-8=5	5-9=5	5-8=6	6-9=6
7-3=4	7-1=6	7-2=5	8-3=5	8-2=6	9-3=6
7-6=1	7-4=3	7-5=2	8-6=2	8-5=3	9-6=3
7-9=7	7-7=9	7-8=8	8-9=8	8-8=9	9-9=9
1-3=7	1-1=9	1-2=8	2-3=8	2-2=9	3-3=9
1-6=4	1-4=6	1-5=5	2-6=5	2-5=6	3-6=6
1-9=1	1-7=3	1-8=2	2-9=2	2-8=3	3-9=3
4-3=1	4-1=3	4-2=2	5-3=2	5-2=3	6-3=3
4-6=7	4-4=9	4-5=8	5-6=8	5-5=9	6-6=9
4-9=4	4-7=6	4-8=5	5-9=5	5-8=6	6-9=6
7-3=4	7-1=6	7-2=5	8-3=5	8-2=6	9-3=6
7-6=1	7-4=3	7-5=2	8-6=2	8-5=3	9-6=3
7-9=7	7-7=9	7-8=8	8-9=8	8-8=9	9-9=9

Even though it goes without saying, I will mention again at this point that none of this is to say that quantum mathematics is a capable and complete substitute for the incredibly complex structure that is modern quantum mechanics. For example, at no point in this book has the concept of inertia been taken into account, with this being only one of many obvious flaws in this currently far from completed theory. The connections which were highlighted in this section simply indicate what is in my opinion a strong, somewhat surprising, yet deeply satisfying correlation between some of the basic underlying principles of quantum mechanics and quantum mathematics. Much further study is required, into this, as well as many other aspects of condensive mathematics, as will be discussed in the next section.

Section Nine:
"Epilogue"

After 15 years of study, I have come to the realization that what I refer to as "quantum mathematics" is actually more of a universal concept, in that there are many areas of study which would benefit from an understanding of the core concepts that are involved in condensive base-ten mathematics, many of which people are already well at work on.

In addition to this comparison to the standard model of physics, condensive base-ten mathematics has been used to explain a variety of important behaviors, including the distribution of prime numbers, as can be seen in the work of Gary Croft, which can be found here, as well as the behaviors of the Fibonacci numbers, as can be seen in the work of my friend Claudio Mosi, which can be viewed here. Furthermore, I would be remiss were I to not include a mention of Marko Rodin, whose work in the realm of vortex math is what initially introduced me to the endless beauty that is to be found in condensive mathematics. A YouTube search of his name should turn up positive results for anyone who is interested in a tutorial on his work.

As for this book, my objective was to be as thorough as my current body of quantum mathematical knowledge would allow, while still maintaining some level of brevity, and I think that for the most part, I have achieved those goals. Those who desire a more thorough treatment of these and other quantum mathematical concepts would be well served to consult my first book, "The Big Book of Quantum Mathematics", with which my objective was to include the entirety of my body of quantum mathematical knowledge, without concern for brevity, and at 550 pages, I feel that I have achieved those goals as well. My next goal is, quite frankly, to make a bit more logical sense out of at least some of these quantum mathematical concepts, in the hopes of teasing out a bit more of the connection between quantum mathematics and quantum mechanics. Should I find my way towards the achievement of those goals, the associated information will be included in my next book.

In closing, I will recommend that anyone seeking to gain a better understanding of the behaviors which condensive mathematics causes numbers to display should find themselves a good high-precision calculator to experiment with. As of this writing, I am currently using the calculator which is hosted online here. I have personally spent years of my life inputing numbers into calculators and observing the results through a condensive base-ten mathematical lens, and I have found that while there is a deep satisfaction to the fact that the results grow more predictable with time and understanding, the real joy is in the surprises that can always be found in the ways that the numbers behave and interact. With a basic understanding of the behaviors which are described in this book, one can spend the better part of a lifetime gaining a deeper understanding of quantum mathematics. Thank you for reading. God bless, and good luck!