

### Chapter 3.3: "Progressive Patterns"

In this sub-chapter, we will examine the single-digit progressive patterns which are contained within the repetition patterns which are contained within the infinitely repeating decimal number quotients which are yielded by the first cycle of nine iterations of the function "1/3", as well as the various sub-patterns which are displayed by these progressive patterns. All of the progressive patterns which we will be working with will involve repeated movements of a specific quantity of digits to the right within a repetition pattern, with these movements being referred to as "steps". (To clarify, the overall concept of repetition patterns was explained in Chapter 3, while the concept of progressive patterns will be encountered throughout a few of the remaining chapters, and will be explained more thoroughly as we work our way through this sub-chapter.)

As was seen in Chapter 3, the infinitely repeating decimal number quotients which are yielded by the first two iterations of the function "1/3" both contain single-digit repetition patterns, these being 3... and 1..., respectively. Since neither of these single-digit repetition patterns involve any variation, we will skip them both, and start instead with the multiple-digit repetition pattern which is contained within the infinitely repeating decimal number quotient which is yielded by third iteration of the function "1/3", which is shown below.

.037...

Above, we see an infinitely repeating decimal number quotient which contains a repetition pattern which contains a simple progressive pattern in which movements of one step to the right in the repetition pattern cause a raise of 3 in the number, assuming the inclusion of occasional shocks, as is shown and explained below, using a simple color code which will be used in relation to all of the progressive patterns which we will be working with throughout this book. (It should be noted that in order to simplify this explanation, the values of change which are involved in this progressive pattern are shown above the repetition pattern. Though this will not be the case in relation to any of the other progressive patterns which will be seen going forward from here.)

3 3 3 3 3 3 3 3 3  
0370370370...

Above, we see the one-step "+3" progressive pattern which is contained within this repetition pattern, with the progression of condensed sums which are yielded by this particular progressive pattern being 3,7,0,... . (The first of the numbers which are involved in this progressive pattern is shown in non-highlighted black, in order to simply this explanation. Though in relation to the rest of these examples, the first of the numbers which are involved in each of the progressive patterns will be highlighted in blue, the reasons for which will be explained in the next section of this sub-chapter.) Starting with the leftmost of the 0's which are contained within this repetition pattern, which is shown above in non-highlighted black, one step to the right of that number is the 3, which involves a raise of 3, in that "0+3=3". In this case, the 3 is highlighted in blue to indicate that no shock is required, in that this particular "+3" addition function has yielded the appropriate sum. Next, one step to the right of this 3 is the 7, which is highlighted in green to indicate that this number involves a positive shock. This means that while performing a "+3" addition function on the 3 should yield the 6, as "3+3=6", this 7 is instead 1 greater than the presumed value of 6. (This deviation from the expected value of the sum number is

what will be referred to as a "shock".) In this case, which requires a raise of 1 in the value of the sum number, the shock is a positive shock of 1. (These positive shocks of 1 will always be indicated with green highlighting, as is the case above.) Next, one step to the right of this 7 is the 0, which is highlighted in red to indicate that this number involves a negative shock of 1, in that while performing a "+3" addition function on the previous 7 should yield a condensed sum of 1, as  $7+3=10(1)$ , this 0 is instead 1 less than the presumed value of 1. (These negative shocks of 1 will always be indicated with red highlighting, as is the case above.) While the next step begins the second iteration of this progressive pattern, in that one step to the right of this 0 is the 3, which is highlighted in blue to indicate that no shock is required, as  $0+3=3$ . This fourth step displays matching in relation to the first of these steps, which was also from the 0 to the 3, which means that this 0 is the repetition point of this particular progressive pattern. This means that this same one-step "+3" progressive pattern will continue on to infinite iterations, three of which are shown above. (Also, it should be noted that in relation to progressive patterns, any step which involves a lack of a shock technically involves a neutral shock of 0. Though for simplicity, these neutral shocks of 0 will usually be treated as a lack of a shock, as is the case in relation to this example.) The one-step "+3" progressive pattern which is described above is a relatively simple progressive pattern, in that single steps to the right involve the functions of "+3", "+4", and "+2", with these three values of change comprising one complete infinitely repeating cycle of the values of change which are involved in this particular progressive pattern. Though this progressive pattern can also be less concisely though more properly considered to involve an infinitely repeating cycle of three individual "+3" addition functions, along with a positive shock of 1 on every second step, and a negative shock of 1 on every third step. Also, we can determine that in relation to this one-step "+3" progressive pattern, the changes in value of 3, 4, and 2 add to a non-condensed sum of 9, and the shocks maintain conservation (or parity), in that this progressive pattern involves equal quantities of positive and negative shocks, all of which are shocks of 1. The condensed sums which are yielded by the addition of one complete cycle of the values of change which are involved in each of these progressive patterns will be tracked as we progress, as will the forms of parity which are maintained by the charges and the values of the shocks which are involved in each of these progressive patterns.

(To clarify, the concept of parity is interrelated with that of conservation, and involves a form of balance, or equality.)

In addition to the one-step "+3" progressive pattern which is described above, this same repetition pattern also contains an infinite quantity of multiple-step progressive patterns, one of which is shown below. (It should be noted that in relation to multiple-step progressive patterns, multiple iterations of the repetition pattern will usually be required in order to complete one iteration of the progressive pattern, as is the case in relation to the example which is shown below. This is due to the fact that the skipping of numbers usually causes the first instance of the repetition point of the repetition pattern to be skipped over at least once.)

037037(0)...

Above, we see the two-step "+6" progressive pattern which is contained within this repetition pattern. Starting with the leftmost of the 0's which are contained within this repetition pattern, the first of the "+6" addition functions which is involved in this two-step "+6" progressive pattern is  $0+6$ , and this function should yield a sum of 6. Though the number which is oriented two steps to the right of the 0 is the 7, which is highlighted green to indicate that this number involves a positive shock, in that this 7 is 1 greater than presumed value of 6. While the next of the "+6" addition functions which are involved in

this progressive pattern is "7+6", which should yield a condensed sum of 4, though the number which is oriented two steps to the right of the 7 is the 3, which is highlighted in red to indicate that this number involves a negative shock, in that this 3 is 1 less than the presumed value of 4. Continuing on, the number which is oriented two steps to the right of the 3 is the 0, which is highlighted in blue to indicate that no shock is required, as this "+6" addition function has yielded the appropriate sum, in that "3+6=9(0)". This 0 is the repetition point of this particular progressive pattern, which means that this same two-step "+6" progressive pattern will repeat to infinite iterations. Also, it should be noted that in this example, the first of the numbers which are involved in the next iteration of the progressive pattern, this being the 0, is shown in parentheses at the end of the repetition pattern. The remainder of the progressive patterns which will be seen in this book will all be shown through one complete iteration, with the first number of the next iteration shown in parentheses at the end of the repetition pattern. (In this case, the first digit of the second iteration of the progressive pattern is highlighted in blue, as is the first digit of first iteration of the progressive pattern, which is due to the fact that these two digits display matching between one another, as will be explained along with the next example.) While one cycle of the values of change which are involved in this two-step "+6" progressive pattern is "+7,+5,+6",..., with these three values of change adding to a non-condensed sum of 18, which condenses to the 9. This condensed value of 9, along with that which is yielded by the addition of the values of change which are involved in the previous progressive pattern, indicates the condensed 9 sub-pattern which is displayed by the sums of one cycle of the values of change which are involved in each of these progressive patterns. (This condensed 9 sub-pattern will be tracked as we progress.) Also, it should be noted that the values of change of "+7", "+5", and "+6" are the exact values of change which are involved in this progressive pattern, independent of any shocks. These exact values of change add to a non-condensed sum of 18, which, due to the forms of shock parity which this progressive pattern maintains, displays matching in relation to the non-condensed sum which is yielded by the shocked values of change, which in this case are "+6", "+6", and "+6". (This form of matching is displayed by all progressive patterns which maintain shock parity in terms of both the quantities and the values of their shocks, as is the case in relation to this two-step "+6" progressive pattern, in that this progressive pattern involves one positive shock and one negative shock, each of which is a shock of 1.)

While the only other unique progressive pattern which is contained within this repetition pattern is the three-step "+/-9/0" progressive pattern which is shown below.

037(0)...

Above, we see the three-step "+/-9/0" progressive pattern which is contained within this repetition pattern. This progressive pattern involves a lone value of change which involves a condensed value of 9, with this value of 9 confirming the condensed 9 sub-pattern which is displayed by the sums which are yielded by the addition of one cycle of the values of change which are involved in each of these progressive patterns. While the fact that this progressive pattern does not involve any shocks confirms the sub-pattern which involves the fact that each of these progressive patterns maintains shock parity in relation to the charges and the values of the shocks (in this case, these forms of shock parity are maintained via a complete lack of shocks). Also, it should be noted that this three-step "+/-9/0" progressive pattern is considered to be a no change progressive pattern, in that its lone value of change is "+9" (or "-9", or "+0", or "-0"), which is a no change function in terms of the condensed value of the solution which it yields. All repetition patterns contain no change progressive patterns which are similar to that which is seen above, and these no change progressive patterns act as the separations between the cycles of progressive pattern sets, as is explained briefly below.

(To clarify, the term "no change" refers to a general type of neutrality which will be seen in a variety of forms throughout these chapters. While the concept of progressive pattern sets will be encountered again in a moment, and will eventually be explained more thoroughly in "Chapter 6.3: Progressive Patterns of the 6".)

This three digit repetition pattern does not contain any other unique multiple-step progressive patterns, and this is due to the fact that repetition patterns are comprised of progressive pattern sets, with the quantity of progressive patterns which are contained in the progressive pattern set displaying matching in relation to the quantity of digits which are contained within the repetition pattern. This means that the four-step progressive pattern which is contained within this repetition pattern displays matching in relation to the one-step "+3" progressive pattern which was examined a moment ago, the five-step progressive pattern which is contained within this repetition pattern displays matching in relation to the two-step "+6" progressive pattern which was examined a moment ago, and the six-step progressive pattern which is contained within this repetition pattern displays matching in relation to the three-step "+/-9/0" progressive pattern which was examined a moment ago, as is shown below. (In the chart which is shown below, the numbers which are involved in one cycle of each of the progressive patterns are shown in parentheses to the far-right of the chart, where they are highlighted in the same progressive pattern color code.)

one-step +3 progressive pattern -	037(0)...	(037)
four-step +3 progressive pattern -	037037037037(0)...	(037)
two-step +6 progressive pattern -	037037(0)...	(073)
five-step +6 progressive pattern -	037037037037037(0)...	(073)
nine-step +/-9/0 progressive pattern -	037(0)...	(0)
six-step +/-9/0 progressive pattern -	037037(0)...	(0)

Above, we can see that each of these pairs of progressive patterns display matching between one another, with these instances of matching involving the numbers which are involved in the progressive patterns, as well as their changes in value and shock patterns. This means that these instances of matching progressive patterns differ solely in relation to the quantities of steps which they involve. These same instances of matching are displayed by all of the progressive patterns which are contained within this repetition pattern, in that the seven-step progressive pattern which is contained within this repetition pattern displays these same instances of matching in relation to the one-step "+3" progressive pattern and the four step "+3" progressive pattern which are contained within this repetition pattern, the eight-step progressive pattern which is contained within this repetition pattern displays these same instances of matching in relation to the two-step "+6" progressive pattern and the five step "+6" progressive pattern which are contained within this repetition pattern, the nine-step progressive pattern which is contained within this repetition pattern displays these same instances of matching in relation to the three-step "+/-9/0" progressive pattern and the six-step "+/-9/0" progressive pattern which are contained within this repetition pattern, etc. . This all indicates that in this case, each of the cycles of the progressive pattern set involves three progressive patterns, the third of which is a no change progressive pattern.

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Next, we will examine the various progressive patterns which are contained within the repetition pattern which is contained within the infinitely repeating decimal number quotient which is yielded by the fourth iteration of the function "1/3". We will start by examining the one-step progressive pattern which is contained within this repetition pattern, which is shown below.

012345679(0)...

Above, we see the one-step "+1" progressive pattern which is contained within this repetition pattern. This progressive pattern involves one positive shock of 1 and one negative shock of 1, which means that this progressive pattern maintains the previously established sub-pattern which involves the fact that these progressive patterns all maintain shock parity in terms of both the charges and the values of their shocks. While one complete cycle of the values of change which are involved in this progressive pattern is "+1,+1,+1,+1,+1,+1,+1,+2,+0,...", with these values of change adding to a non-condensed sum of 9. This value of 9 maintains the previously established condensed 9 sub-pattern which is displayed by the sums which are yielded by the addition of one cycle of the values of change which are involved in each of these progressive patterns.

Also, before we move on to the next progressive pattern, it should be noted that in relation to progressive patterns such as that which is seen above, in which a shock occurs on the first digit of the second iteration of a progressive pattern, we can determine that the same form of shock also occurs on the first digit of the first iteration of that same progressive pattern. (This is due to the fact that these respective first digits involve matching values which are yielded via matching functions.) Furthermore, in these situations, it is necessary to look to the second iteration of the progressive pattern in order to determine the charge and the value of the first shock, as it is impossible to determine these characteristics in relation to the first number of the first iteration of the progressive pattern. (It is for this reason that the first digit of the first iteration of all of these progressive patterns will be highlighted in blue, as is the case in relation to the example which is seen above.)

Next, we will examine the two-step progressive pattern which is contained within this same repetition pattern, which is shown below.

012345679012345679(0)...

Above, we see the two-step "+2" progressive pattern which is contained within this repetition pattern. This progressive pattern involves one positive shock of 1 and one negative shock of 1, which means that this progressive pattern maintains the previously established sub-pattern which involves the fact that these progressive patterns all maintain shock parity in terms of both the charges and the values of their shocks. While one complete cycle of the values of change which are involved in this progressive pattern is "+2,+2,+2,+3,+1,+2,+2,+2,+2,...", with these values of change adding to a non-condensed sum of 18, which condenses to the 9. This condensed value of 9 maintains the previously established condensed 9 sub-pattern which is displayed by the sums which are yielded by the addition of one cycle of the values of change which are involved in each of these progressive patterns.

Next, we will examine the three-step progressive pattern which is contained within this same repetition pattern, which is shown below.

012345679(0)...

Above, we see the three-step "+3" progressive pattern which is contained within this repetition pattern. This progressive pattern involves no shocks of any kind, with this lack of shocks technically maintaining the previously established sub-pattern which involves the fact that these progressive patterns all maintain shock parity in terms of both the charges and the values of their shocks. While one complete cycle of the values of change which are involved in this progressive pattern is "+3,+3, +3,...", with these values of change adding to a non-condensed sum of 9. This value of 9 maintains the previously established condensed 9 sub-pattern which is displayed by the sums which are yielded by the addition of one cycle of the values of change which are involved in each of these progressive patterns. Also, before we move on to the next progressive pattern, it should be noted that the numbers which are involved in this three-step "+3" progressive pattern are the 0, the 3, and the 6, with this being one of several qualities which are displayed by this progressive pattern which involve members of the 3,6,9 family group. (To clarify, these qualities involve the fact that this is a three-step "+3" progressive pattern that involves three numbers which comprise a complete 3,6,9 family group.) This same 3,6,9 family group member characteristic is displayed by the six-step progressive pattern which is contained within this same repetition pattern, as will be seen a bit later in this section.

Next, we will examine the four-step progressive pattern which is contained within this same repetition pattern, which is shown below.

012345679012345679012345679012345679(0)...

Above, we see the four-step "+4" progressive pattern which is contained within this repetition pattern. This progressive pattern involves one positive shock of 1 and one negative shock of 1, which means that this progressive pattern maintains the previously established sub-pattern which involves the fact that these progressive patterns all maintain shock parity in terms of both the charges and the values of their shocks. While one complete cycle of the values of change which are involved in this progressive pattern is "+4,+5,+3,+4,+4,+4,+4,+4,+4...", with these values of change adding to a non-condensed sum of 36, which condenses to the 9. This condensed value of 9 maintains the previously established condensed 9 sub-pattern which is displayed by the sums which are yielded by the addition of one cycle of the values of change which are involved in each of these progressive patterns.

Next, we will examine the five-step progressive pattern which is contained within this same repetition pattern, which is shown below.

012345679012345679012345679012345679(0)...

Above, we see the five-step "+5" progressive pattern which is contained within this repetition pattern. This progressive pattern involves one positive shock of 1 and one negative shock of 1, which means that this progressive pattern maintains the previously established sub-pattern which involves the fact that these progressive patterns all maintain shock parity in terms of both the charges and the values of their shocks. While one complete cycle of the values of change which are involved in this progressive pattern is "+5,+5,+5,+5,+5,+5,+6,+4,+5,...", with these values of change adding to a non-condensed sum of 45, which condenses to the 9. This condensed value of 9 maintains the previously established condensed 9 sub-pattern which is displayed by the sums which are yielded by the addition of one cycle of the values of change which are involved in each of these progressive patterns.

Next, we will examine the six-step progressive pattern which is contained within this same repetition pattern, which is shown below.

012345679012345679(0)...

Above, we see the six-step "+6" progressive pattern which is contained within this repetition pattern. This progressive pattern involves no shocks of any kind, with this lack of shocks technically maintaining the previously established sub-pattern which involves the fact that these progressive patterns all maintain shock parity in terms of both the charges and the values of their shocks. While one complete cycle of the values of change which are involved in this progressive pattern is "+6,+6, +6,...", with these values of change adding to a non-condensed sum of 18, which condenses to the 9. This condensed value of 9 maintains the previously established condensed 9 sub-pattern which is displayed by the sums which are yielded by the addition of one cycle of the values of change which are involved in each of these progressive patterns. Also, before we move on to the next progressive pattern, it should be noted that the numbers which are involved in this six-step "+6" progressive pattern are the 0, the 6, and the 3, with this being one of several qualities which are displayed by this progressive pattern which involve members of the 3,6,9 family group. (To clarify, these qualities involve the fact that this is a six-step "+6" progressive pattern which involves three numbers which comprise a complete 3,6,9 family group.) This same 3,6,9 family group member characteristic is displayed by the three-step progressive pattern which is contained within this same repetition pattern, as was seen earlier in this section, and is also displayed by the nine-step progressive pattern which is contained within this same repetition pattern, as will be seen a bit later in this section.

Next, we will examine the seven-step progressive pattern which is contained within this same repetition pattern, which is shown below.

012345679012345679012345679012345679012345679012345679012345679(0)...

Above, we see the seven-step "+7" progressive pattern which is contained within this repetition pattern. This progressive pattern involves one positive shock of 1 and one negative shock of 1, which means that this progressive pattern maintains the previously established sub-pattern which involves the fact that these progressive patterns all maintain shock parity in terms of both the charges and the values of their shocks. While one complete cycle of the values of change which are involved in this progressive pattern is "+7,+7,+7,+7,+8,+6,+7,+7,+7,...", with these values of change adding to a non-condensed sum of 63, which condenses to the 9. This condensed value of 9 maintains the previously established condensed 9 sub-pattern which is displayed by the sums which are yielded by the addition of one cycle of the values of change which are involved in each of these progressive patterns.

Next, we will examine the eight-step progressive pattern which is contained within this same repetition pattern, which is shown below.

012345679012345679012345679012345679012345679012345679012345679012345679(0)...

Above, we see the eight-step "+8" progressive pattern which is contained within this repetition pattern. This progressive pattern involves one positive shock of 1 and one negative shock of 1, which means that this progressive pattern maintains the previously established sub-pattern which involves the fact that these progressive patterns all maintain shock parity in terms of both the charges and the values of

their shocks. While one complete cycle of these values of change is "+9,+7,+8,+8,+8,+8,+8,+8,+8,...", with these values of change adding to a non-condensed sum of 72, which condenses to the 9. This condensed value of 9 maintains the previously established condensed 9 sub-pattern which is displayed by the sums which are yielded by the addition of one cycle of the values of change which are involved in each of these progressive patterns.

This particular repetition pattern contains nine digits, which means that the nine-step progressive pattern which is contained within this repetition pattern is a nine-step "+/-9/0" progressive pattern, which is a no change progressive pattern, as is shown below.

012345679(0)...

Above, we see the nine-step "+/-9/0" progressive pattern which is contained within this repetition pattern. This progressive pattern involves no shocks of any kind, with this lack of shocks technically maintaining the previously established sub-pattern which involves the fact that these progressive patterns all maintain shock parity in terms of both the charges and the values of their shocks. While one complete cycle of these values of change is "+9,+7,+8,+8,+8,+8,+8,+8,+8,...", with these values of change adding to a non-condensed sum of 72, which condenses to the 9. This condensed value of 9 maintains the previously established condensed 9 sub-pattern which is displayed by the sums which are yielded by the addition of one cycle of the values of change which are involved in each of these progressive patterns. Also, it should be noted that this nine-step "+/-9/0" progressive pattern displays characteristics which are similar to those which are displayed by the three-step "+3" progressive pattern and the six-step "+6" progressive pattern which are contained within this same repetition pattern, in that this nine-step "+/-9/0" progressive pattern exclusively involves numbers which are members of the 3,6,9 family group, maintains its two forms of shock parity through a complete lack of shocks, and involves a lone addend which condenses to the 9. (To clarify, this nine-step "+/-9/0" progressive pattern exclusively involves the 0's which are contained within this repetition pattern, and involves a lone function which can be considered to be a "+9" addition function, a "-9" subtraction function, a "+0" addition function, or a "-0" subtraction function, all of which involve a function number which condenses to the 9.) This means that we can determine that in relation to this particular repetition pattern, these characteristics are exclusive to the progressive patterns which involve quantities of steps which maintain the 3,6,9 family group. (This is also the case in relation to the repetition pattern which was examined in the previous section, in that its three-step "+/-9/0" progressive pattern involves no shocks, exclusively involves the 0's which are contained within its repetition pattern, and involves a lone function which involves a function number which condenses to the 9, though these characteristics were not noted at the time.)

While each of the progressive patterns that are contained within this repetition pattern which contain a greater quantity of steps displays matching in relation to one of the progressive patterns which have already been examined, due to the overall concept of progressive pattern sets, as was explained in the previous section of this sub-chapter. Though it should be noted that the first cycle of this progressive pattern set displays a previously unmentioned sub-pattern which involves the fact that its constituent progressive patterns all involve instances of numerically matching addends and steps, such as one-step "+1", two-step "+2", three-step "+3", etc. . (This progressive pattern set will be examined more thoroughly in "Chapter 3.6: Multiple-Digit Progressive Patterns".)

Also, before we move on, it should be noted that in relation to this repetition pattern, the values of change which are involved in each of the progressive patterns occur in quantities which involve

members of the 3,6,9 family group, with the exception of the no change progressive pattern, which only involves a single value of change, in that six of these progressive patterns involve nine values of change, and two of these progressive patterns involve three values of change. This 3,6,9 family group characteristic will be displayed by the majority of the progressive patterns which will be seen in this book, though for the most part, this characteristic will be disregarded, due in large part to the complexity of the upcoming progressive patterns. (This 3,6,9 family group characteristic is also displayed by the progressive pattern set which was examined in the previous section of this sub-chapter, though this characteristic was not noted at the time.)

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Next, we will examine a representative sample of the progressive patterns which are contained within the repetition patterns which are contained within the infinitely repeating decimal number quotients which are yielded by further iterations of the function "1/3", in order to determine whether or not these progressive patterns maintain the various previously established sub-patterns.

We will start by examining the three-step progressive pattern which is contained within the repetition pattern which is contained within the infinitely repeating decimal number quotient which is yielded by the fifth iteration of the function "1/3", which is shown below.

004115226337448559670781893(0)...

Above, we see the three-step "+1" progressive pattern which is contained within this repetition pattern. This three-step "+1" progressive pattern does not involve any shocks, which means that this progressive pattern technically maintains the previously established sub-pattern which involves the fact that all of the progressive patterns which have been examined in this sub-chapter maintain shock parity in terms of both the charges and the values of their shocks. While the fact that this three-step progressive pattern maintains these forms of shock parity through a complete lack of shocks indicates that this progressive pattern also maintains the previously established sub-pattern which involves the fact that the progressive patterns which involve quantities of steps which maintain the 3,6,9 family group involve a complete lack of shocks. Also, one complete cycle of the values of change which are involved in this progressive pattern is "+1,+1,+1,+1,+1,+1,+1,+1,+1,...", with these values of change adding to a non-condensed sum of 9. This value of 9 maintains the previously established condensed 9 sub-pattern which is displayed by the sums which are yielded by the addition of one cycle of the values of change which are involved in each these progressive patterns. However, it should be noted that the majority of the numbers which are involved in this three-step "+1" progressive pattern do not maintain the 3,6,9 family group, which means that this progressive pattern does not maintain the previously established sub-pattern which involves the fact that the progressive patterns which involve quantities of steps which maintain the 3,6,9 family group exclusively involve 3,6,9 family group members. (This particular sub-pattern is unique to the progressive pattern set which is contained within the repetition pattern which is contained within the infinitely repeating decimal number quotient which is yielded by the fourth iteration of the function "1/3", and arises due to the fact that each of those progressive patterns involves a quantity of steps which displays matching in relation to its value of change. However, this is not the case in relation to this current example, in that this progressive pattern involves three steps along with a series of "+1" addition functions.)

The highlighting which is seen above indicates the three-step "+1" progressive pattern which is contained within this repetition pattern. Though at this point, it should be noted that this repetition pattern actually contains three intertwined three-step "+1" progressive patterns, as is shown below, with each of the three instances of a three-step "+1" progressive pattern highlighted in a different arbitrary color.

004115226337448559670781893(0)...

Above, each of the individual three-step "+1" progressive patterns which are contained within this repetition pattern is highlighted in a different arbitrary color, with each of these progressive patterns involving a unique variation on the base set of numbers. The first of these three-step "+1" progressive patterns involves the numbers 0, 1, 2, 3, 4, 5, 6, 7, and 8, all of which are highlighted in blue. This progressive pattern involves a straight run of the numbers 1-9, with the 9 represented as the 0, and oriented at the front of the progressive pattern. While the second of these three-step "+1" progressive patterns involves the numbers 0, 1, 2, 3, 4, 5, 7, 8, and 9, all of which are highlighted in green, and the third of these three-step "+1" progressive patterns involves the numbers 4, 5, 6, 7, 8, 9, 0, 1, and 3, all of which are highlighted in red. Each of these progressive patterns involves a run of the base numbers, one of which is shifted, and both of which skip a number, these being the 6 and the 2, respectively. Also, in relation to the second and third of these progressive patterns, the 9 and 0 are represented independently, where as in relation to the first of these progressive patterns, the 9 is represented only once, as the 0. (The skipping of numbers which is seen in relation to the second and third of these progressive patterns is a result of the positive shocks which are involved in each of those progressive patterns, while the two instances of the independent 0 and 9 are a result of the negative shocks which are involved in each of these progressive patterns.)

The example which is seen above indicates the characteristic which is displayed by all multiple-step progressive patterns, this being that all multiple-step progressive patterns involve individual, intertwined progressive patterns, with the quantity of unique progressive patterns displaying matching in relation to the quantity of steps which are involved in the overall multiple-step progressive pattern. (For example, a two-step progressive pattern involves two intertwined progressive patterns, a three-step progressive pattern involves three intertwined progressive patterns, a four-step progressive pattern involves four intertwined progressive patterns, etc. ) Though all of the examples which we will be working with throughout the remainder of this book will involve the first available multiple-step progressive pattern, unless a specific situation requires an alternate instance of that particular multiple-step progressive pattern.

Next, we will examine the repetition pattern which is contained within the infinitely repeating decimal number quotient which is yielded by the sixth iteration of the function "1/3". This repetition pattern contains the nine-step progressive pattern which is shown below.

001371742112482853225939643347050754458161865569272976680384087791495198902606310(0)...

Above, we see the nine-step "+1" progressive pattern which is contained within this repetition pattern. This nine-step "+1" progressive pattern involves one positive shock of 1 and one negative shock of 1, which means that this progressive pattern maintains the previously established sub-pattern which

involves the fact that these progressive patterns all maintain shock parity in terms of both the charges and the values of their shocks. While one complete cycle of the values of change which are involved in this progressive pattern is "+1,+1,+1,+1,+1,+1,+1,+1,+2,+0,...", with these values of change adding to a non-condensed sum of 9. This value of 9 maintains the previously established condensed 9 sub-pattern which is displayed by the sums which are yielded by the addition of one cycle of the values of change which are involved in each of these progressive patterns. Also, it should be noted that this nine-step "+1" progressive pattern involves a quantity of steps which maintains the 3,6,9 family group, though it also involves shocks, which means that this progressive pattern does not maintain the previously established sub-pattern which involves the fact that the progressive patterns which involve quantities of steps which maintain the 3,6,9 family group do not involve any shocks. (It should also be noted that the nine-step "+1" progressive pattern which is seen above displays matching in relation to the repetition pattern which is contained within the infinitely repeating decimal number quotient which is yielded by the fourth iteration of the function "1/3" which was examined in Chapter 3, in that they both involve a run of the numbers 0,1,2,3,4,5,6,7, and 9. While a shifted variation on this pattern comprises the repetition pattern which is contained within the infinitely repeating decimal number quotient which is yielded by the function "361/81", as will be seen in "Chapter 6.6: Averages".)

At this point, we have determined that the repetition pattern which is contained within the infinitely repeating decimal number quotient which is yielded by the fourth iteration of the function "1/3" contains a one-step "+1" progressive pattern, the repetition pattern which is contained within the infinitely repeating decimal number quotient which is yielded by the fifth iteration of the function "1/3" contains a three-step "+1" progressive pattern, and the repetition pattern which is contained within the infinitely repeating decimal number quotient which is yielded by the sixth iteration of the function "1/3" contains a nine-step "+1" progressive pattern. This all indicates that these repetition patterns display a form of an "X3" growth pattern, which means that the repetition pattern which is contained within the infinitely repeating decimal number quotient which is yielded by the seventh iteration of the function "1/3" should contain a twenty-seven-step "+1" progressive pattern, as will be confirmed along with the next example. (To clarify, this particular "X3" growth pattern is displayed by the quantities of steps which are involved in each of these progressive patterns, while each of the progressive patterns which is involved in this "X3" growth pattern involves a "+1" addition function.)

Next, we will examine the aforementioned repetition pattern which is contained within the infinitely repeating decimal number quotient which is yielded by the seventh iteration of the function "1/3". This repetition pattern contains the expected twenty-seven-step "+1" progressive pattern, as is shown below.

00045724737082761774119798811156835848193872885230909922267946959304983996342021033  
 37905807041609510745313214449016918152720621856424325560128029263831732967535436671  
 23914037494284407864654778235025148605395518975765889346136259716506630086877(0)...

Above, we see the twenty-seven-step "+1" progressive pattern which is contained within this repetition pattern. This twenty-seven-step "+1" progressive pattern does not involve any shocks, which means that this progressive pattern technically maintains the previously established sub-pattern which involves the fact that all of the progressive patterns which have been examined in this sub-chapter maintain shock parity in terms of both the charges and the values of their shocks. While the fact that this twenty-seven-step "+1" progressive pattern does not involve any shocks indicates that this no shock characteristic can also be displayed by progressive patterns which involve quantities of steps

which involve non-condensed octaves of the members of the 3,6,9 family group (in this case, the quantity of steps is twenty-seven, which is an octave of the 9). Also, one complete cycle of the values of change which are involved in this progressive pattern is "+1,+1,+1,+1,+1,+1,+1,+1,+1,...", with these values of change adding to a non-condensed sum of 9. This value of 9 maintains the previously established condensed 9 sub-pattern which is displayed by the sums which are yielded by the addition of one cycle of the values of change which are involved in each of these progressive patterns.

Next, we will examine the repetition pattern which is contained within the infinitely repeating decimal number quotient which is yielded by the eighth iteration of the function "1/3". This repetition pattern contains the eighty-one-step "+1" progressive pattern which is shown below, with the quantity of eighty-one steps maintaining the previously established "X3" growth pattern, in that "27X3=81".

00015241579027587258039932937052278616064624295076969974089315653101661332114007011  
 12635269013869836915104404816338972717573540618808108520042676421277244322511812223  
 74638012498094802621551592745008382868465172991921963115378753238835543362292333485  
 74912360920591373266270385611949397957628410303307422648986434994665447340344459686  
 02347203170248437738149672306050906873952141441853376009754610577655845145557079713  
 45831428135954884926078341716201798506325255296448712086572168876695625666819082456  
 94253924706599603718945282731290961743636640755982319768327998780673677793019356805  
 36503581771071483005639384240207285474775186709343087943910989178478890413046791647  
 61469288218259411675049535131839658588629782045419905502210028959(0)...

Above, we see the eighty-one-step "+1" progressive pattern which is contained within this repetition pattern. This eighty-one-step "+1" progressive pattern does not involve any shocks, which means that this progressive pattern technically maintains the previously established sub-pattern which involves the fact that all of the progressive patterns which have been examined in this sub-chapter maintain shock parity in terms of both the charges and the values of their shocks. While the fact that this eighty-one-step progressive pattern maintains these forms of shock parity through a complete lack of shocks indicates that this progressive pattern also maintains the previously established sub-pattern which involves the fact that most of the progressive patterns which have been seen in this sub-chapter which involve quantities of steps which are octaves of a member of the 3,6,9 family group involve a complete lack of shocks (in this case, the quantity of eighty-one is an octave of the 9). Also, one complete cycle of these values of change is "+1,+1,+1,+1,+1,+1,+1,+1,+1,...", with these values of change adding to a non-condensed sum of 9. This value of 9 maintains the previously established condensed 9 sub-pattern which is displayed by the sums which are yielded by the addition of one cycle of the values of change which are involved in each of these progressive patterns.

The repetition pattern which is seen above will be the subject of the remainder of this sub-chapter, as it contains a quantity of digits which is greater than that which is contained within any of the other repetition patterns which have been seen in this sub-chapter, and this excessive quantity of digits will allow us an opportunity to examine a representative sample of the longer and more complex progressive patterns which are contained within this repetition pattern, as is shown and explained below. (Throughout these examples, the progressive patterns will all involve quantities of steps which are octaves of one of the members of the 3,6,9 family group.)

We will start by examining the nine-step progressive pattern which is contained within this repetition pattern, which is shown below.

00015241579027587258039932937052278616064624295076969974089315653101661332114007011  
 12635269013869836915104404816338972717573540618808108520042676421277244322511812223  
 74638012498094802621551592745008382868465172991921963115378753238835543362292333485  
 74912360920591373266270385611949397957628410303307422648986434994665447340344459686  
 02347203170248437738149672306050906873952141441853376009754610577655845145557079713  
 45831428135954884926078341716201798506325255296448712086572168876695625666819082456  
 94253924706599603718945282731290961743636640755982319768327998780673677793019356805  
 36503581771071483005639384240207285474775186709343087943910989178478890413046791647  
 61469288218259411675049535131 839658588629782045419905502210028959(0)...

Above, we see the nine-step "+7" progressive pattern which is contained within this repetition pattern. This progressive pattern involves a series of shocks which display an infinitely repeating "+,+,-,..." shock pattern, which means that this is the first of the progressive patterns which we have encountered in this sub-chapter which does not maintain shock parity in relation to the charges of its shocks, though this progressive pattern does maintain shock parity in relation to the values of its shocks, in that it exclusively involves shocks of 1. (To clarify, the term "shock pattern" refers to any patterned occurrence of shocks.) While the numbers which are involved in this nine-step "+7" progressive pattern which require a positive shock are 9, 9, 8, 8, 9, 9, 8, 8, 9, 9, 8, 8, 9, 9, 8, and 8, with these numbers forming a repeating "9,9,8,8,..." sub-pattern, and the numbers which are involved in this nine-step "+7" progressive pattern which require a negative shock are 6, 5, 4, 3, 2, 1, and 0, with these numbers forming a descending sub-pattern which progresses from the 6 to the 0.

The numbers that are involved in this nine-step "+7" progressive pattern which require shocks form the somewhat vague sub-pattern which is shown below, with arbitrary highlighting which is explained below the diagram. (To clarify, the row of numbers which is shown below consists of the twenty-three numbers which are involved in this nine-step "+7" progressive pattern which require shocks, with these numbers being shown in the order in which they occur within the progressive pattern, and highlighted in an arbitrary color code which is explained below.)

99688599488399288199088...

Above, we can see that this overall sub-pattern contains four instances of neighboring 8's, all of which are shown in non-highlighted black. While this sub-pattern also contains four instances of neighboring 9's (all of which are highlighted in blue, each of which is oriented between two of the pairs of neighboring 8's. This overall sub-pattern also contains an instance of a complete 3,6,9 family group in which the 9 is represented as the 0, with all of the individual 3,6,9 family group members, all of which are highlighted in purple, being oriented between pairs of 8's and 9's. While the two pairs of 8's and 9's which do not surround a 3,6,9 family group member each surround a member of the 4/5 siblings, both of which are highlighted in red, as well as unexplained instances of the 2 and the 1, both of which are highlighted in green. (This overall sub-pattern is a bit vague, though it functions as an introduction to some of the similar, though much more complex sub-patterns which will be seen in a few of the upcoming chapters.)

(To clarify, the term "neighboring" will be used occasionally in upcoming chapters, always in reference to some form of adjacency.)





should be noted that the fifteen shocks which are involved in this twenty-seven-step "+3" progressive pattern form a sub-pattern which involves intertwined runs of the numbers 4-9, 7-9, 0-2, and 4-6, as is highlighted arbitrarily here: 789704815926456..., with the run of the numbers 4-9 highlighted in green, the run of the numbers 7-9 highlighted in red, the run of the numbers 0-2 highlighted in blue, and the run of the numbers 4-6 shown in non-highlighted black. While it should also be noted that the numbers which are involved in this twenty-seven-step "+3" progressive pattern which do not require any shocks are 3, 1, 4, 2, 5, 3, 0, 7, 1, 8, 2, and 0, with these numbers displaying a sub-pattern which is comprised of two intertwined ascending sub-sub-patterns, each of which involves two three-digit runs of numbers. The first of these ascending sub-sub-patterns is "3,4,5,0,1,2,..." and the second of these ascending sub-sub-patterns is "1,2,3,7,8,0,..." as is highlighted arbitrarily here: 314253071820... .

Next, we will examine the two hundred and forty-three-step progressive pattern which is contained within this same repetition pattern, which is shown below.

00015241579027587258039932937052278616064624295076969974089315653101661332114007011  
 12635269013869836915104404816338972717573540618808108520042676421277244322511812223  
 74638012498094802621551592745008382868465172991921963115378753238835543362292333485  
 74912360920591373266270385611949397957628410303307422648986434994665447340344459686  
 02347203170248437738149672306050906873952141441853376009754610577655845145557079713  
 45831428135954884926078341716201798506325255296448712086572168876695625666819082456  
 94253924706599603718945282731290961743636640755982319768327998780673677793019356805  
 36503581771071483005639384240207285474775186709343087943910989178478890413046791647  
 61469288218259411675049535131839658588629782045419905502210028959(0)...

Above, we see the two hundred and forty-three-step "+3" progressive pattern which is contained within this repetition pattern. This two hundred and forty-three-step "+3" progressive pattern does not involve any shocks, which means that this progressive pattern technically maintains the previously established sub-pattern which involves the fact that most of the progressive patterns which have been seen in this sub-chapter maintain shock parity in terms of both the charges and the values of their shocks. While the numbers which are involved in this progressive pattern are 0, 3, and 6, with these three numbers displaying an ascending sub-pattern which involves a complete 3,6,9 family group in which the 9 is represented as the 0. Also, it should be noted that the numbers which are involved in this two hundred and forty-three-step "+3" progressive pattern display matching in relation to those which are involved in the three-step "+3" progressive pattern which is contained within the repetition pattern which is contained within the infinitely repeating decimal number quotient which is yielded by the fourth iteration of the function "1/3", with this three-step "+3" progressive pattern having been examined in the second section of this sub-chapter.

That brings this section, and therefore this sub-chapter, to a close.