What were people always afraid of? Uncertainty. We are always scare with what can't be explained. To explain the world around us people thought out gods, recovered objects, ordered to animals unique capabilities. With the same purpose we have thought up numbers. They explained a lot of things around. They spoke about quantity, the size, height, width..... Over time people have understood the reason of many natural phenomena. We have opened many physical and chemical laws. Almost everything around can be explained now. We have answers to many questions. And we do not use such concepts as "god of wind" and "god of the sun" any more to explain wind or a sunlight. But we still use numbers. Numbers happen different. In this article I want to tell about prime numbers and to offer the new way of their stay based on separation of a numerical row into two infinite numerical blocks. And with the help the numeric of patterns we will be able to remove two infinite series of prime numbers.

1. Construction of universal numerical circuit. Examination of the first range.

It is known that every second number is multiple to two, and also every third is multiple to three, etc. Let's take all prime numbers from 4 and spread out them to six ranges. Then we shall present numbers 1, 2, and 3 as a basis of all received ranges (fig. 1). Thus we have excluded every second, third, fourth, sixth number; in other words we have excluded all numbers which are multiple to 2, 3, 4, 6. In two remained ranges there shall be numbers multiple to 5 and 7, all prime numbers and numbers multiple to those that are in these two ranges. Let's consider these ranges.

81-75-69-63-57-51-45-39-33-27-21-15-9-3-4-10-16-22-28-34-40-46-52-58-64-70-76
80-74-68-62-56-50-44-38-32-26-20-14-8-2-5-11-17-23-29-35-41-47-53-59-65-71-77
79-73-67-61-55-49-43-37-31-25-19-13-7-1-6-12-18-24-30-36-42-48-54-60-66-72-78
first range- q second range-r

Fig.1

Let us call the numbers of the first range as -*q* , and the second range numbers as -*r.* We shall name all prime numbers as -*n,* all prime numbers of the first range as *n(q),* and all prime numbers of the second range as *n(r)*.
Thus, $n = n(q)+n(r)$.

Let's consider the second range. Every fifth number in this range is multiple to 5. We shall rearrange this range on five ranges (fig. 2) . We shall find a definite numerical circuit. The last range of this circuit shall contain all numbers which are multiple to 5.

Fig.2

-1- 31-61-91- 121-151-181-211-241-271-301-331-361-391-421-451-481-511-541-571
-7- 37-67-97- 127-157-187-217-247-277-307-337-367-397-427-451-487-517-547-577
-13-43-73-103-133-163-193-223-253-283-313-343-373-403-433-463-493-523-553-583
-19-49-79-109-139-169-199-229-259-289-319-349-379-409-439-469-499-529-559-589
-25-55-85-115-145-175-205-235-265-295-325-355-385-415-445-475-505-535-565-595

25, 55- numbers multiple to 5

If we subtract this range from the numerical circuit, we shall obtain 4 main mixed ranges. Let's consider other non-prime numbers of the obtained numerical circuit. All numbers which are multiple to 7 shall form a uniform periodical pattern (fig. 3).

Fig.3

-1- 31-61-91- 121-151-181-211-241-271-301-331-361-391-421-451-481-511-541-571
-7- 37-67-97- 127-157-187-217-247-277-307-337-367-397-427-451-487-517-547-577
-13-43-73-103-133-163-193-223-253-283-313-343-373-403-433-463-493-523-553-583
-19-49-79-109-139-169-199-229-259-289-319-349-379-409-439-469-499-529-559-589

7, 49- number multiple to 7

Let's consider this numerical pattern:

$7=7\cdot1$;	$217=7\cdot\mathit{31}$
$49=7\cdot7$;	$259=7\cdot\mathit{37}$
$91=7\cdot\mathit{13}$;	$\mathit{301}=7\cdot\mathit{43}$
$133=7\cdot19$;	$343=7\cdot\mathit{49}$

We see now that the numerical pattern has the view $q_1\cdot q$, where q_1 is the fixed number and q is the disposal variable.

Let's consider another numerical pattern of this numerical circuit.

Fig.4 Numbers multiple to 11.

-1- 31-61-91- 121-151-181-211-241-271-301-331-361-391-421-451-481-511-541-571
-7- 37-67-97- 127-157-187-217-247-277-307-337-367-397-427-451-487-517-547-577
-13-43-73-103-133-163-193-223-253-283-313-343-373-403-433-463-493-523-553-583
-19-49-79-109-139-169-199-229-259-289-319-349-379-409-439-469-499-529-559-589

7, 49- numbers multiple to 7
121, 187- numbers multiple to 11

Let's consider the numerical pattern we obtained:

$121=11\cdot11$;	$451=11\cdot41$
$187=11\cdot17$;	$517=11\cdot47$
$253=11\cdot23$;	$583=11\cdot53$
$319=11\cdot29$;	

We see that the number 11 is number from the range r, thus its numerical pattern shall have the view $r_1\cdot r$, where r_1 is the fixed number and r is the disposal variable.

Thus the other numbers which are multiple to the same number, in other words – non-prime numbers (in other words – numerical patterns) of this circuit shall have the view: $q_1\cdot q$ or $r_1\cdot r$.

Let's introduce the concept of Period.
The period of the numerical pattern shall be the interval of the pattern for which this pattern passes every numerical range only once.(Fig.5)

Fig.5 The Period.

-1- 31-61-91- 121-151-181-211-241-271-301-331-361-391-421-451-481-511-541-571
-7- 37-67-97- 127-157-187-217-247-277-307-337-367-397-427-451-487-517-547-577
-13-43-73-103-133-163-193-223-253-283-313-343-373-403-433-463-493-523-553-583
-19-49-79-109-139-169-199-229-259-289-319-349-379-409-439-469-499-529-559-589

The period of number 7

The period of number 11

We should notice that:

1) The numerical pattern of every *b* shall match every *a* after *a* amount of periods;
2) Every numerical pattern begins from the number square;
3) The period of every numerical pattern consists of four numbers.

Let's consider the numbers that shall remain after calculation and exclusion of all numerical patterns(Fig.6). We shall see that all remaining numbers are prime, thus, we've obtained the first infinite range of prime numbers *-n(q)*.

Fig.6 .

-1- 63-11-91- 121-151-181-211-241-271-301-331-361-391-421-451-481-511-541-571
-7- 37-67-97- 127-157-187-217-247-277-307-337-367-397-427-451-487-517-547-577
-13-43-73-103-133-163-193-223-253-283-313-343-373-403-433-463-493-523-553-583
-19-49-79-109-139-169-199-229-259-289-319-349-379-409-439-469-499-529-559-589

7, 49- numbers multiple to 7
121, 187- numbers multiple to 11
13, 169- numbers multiple to 13
289, 391- numbers multiple to 17
19, 361- numbers multiple to 19
529- 23^2

-1- 63-11-91- 121-151-181-211-241-271-301-331-361-391-421-451-481-511-541-571
-7- 37-67-97- 127-157-187-217-247-277-307-337-367-397-427-451-487-517-547-577
-13-43-73-103-133-163-193-223-253-283-313-343-373-403-433-463-493-523-553-583
-19-49-79-109-139-169-199-229-259-289-319-349-379-409-439-469-499-529-559-589

1, 63- prime numbers

Thus, all numbers which are not included to the previous numerical patterns and facing the beginning of a new pattern shall be the prime numbers.

2. Examination of the second range. General formulas obtained.

Let us consider the second range. After rearranging it out also to 5 ranges, we shall calculate the range including all numbers multiple to 5 and subtract this range. [redacted]

Fig.7

-5- 35-65- 95- 125-155-185-215-245-275-305-335-365-395-425-455-485-515-545-575-605
-11-41-71-101-131-161-191-221-251-281-311-341-371-401-431-461-491-521-551-581-611
-17-47-77-107-137-167-197-227-257-287-317-347-377-407-437-467-497-527-557-587-617
-23-53-83-113-143-173-203-233-263-293-323-353-383-413-443-473-503-533-563-593-623
-29-59-89-119-149-179-209-239-269-299-329-359-389-419-449-479-509-539-569-599-629

5, 35- numbers multiple to 5

Then we shall reveal numerical patterns of the obtained numerical circuit. Let's take up the number 11 (Fig.8).

Fig.8 Pattern of the number 11

-11-41-71-101-131-161-191-221-251-281-311-341-371-401-431-461-491-521-551-581-611
-17-47-77-107-137-167-197-227-257-287-317-347-377-407-437-467-497-527-557-587-617
-23-53-83-113-143-173-203-233-263-293-323-353-383-413-443-473-503-533-563-593-623
-29-59-89-119-149-179-209-239-269-299-329-359-389-419-449-479-509-539-569-599-629

11, 77- numbers multiple to 11

Let's consider this numerical pattern:

77 =11·7;	341=11·31;
143=11·13;	407=11·37;
209=11·19;	473=11·43;
	539=11·49.

We can see that all numbers multiplied to 11 are numbers from the range *q*, and the number 11 is the number from the range *r*. Thus, the pattern of this number has the view $r_1 \cdot q$, where r_1 is a fixed number.

Let's consider another one numerical pattern of this circuit. (Fig.9)

Fig.9 Pattern of the number 7

-11-41-71-101-131-161-191-221-251-281-311-341-371-401-431-461-491-521-551-581-611
-17-47-77-107-137-167-197-227-257-287-317-347-377-407-437-467-497-527-557-587-617
-23-53-83-113-143-173-203-233-263-293-323-353-383-413-443-473-503-533-563-593-623
-29-59-89-119-149-179-209-239-269-299-329-359-389-419-449-479-509-539-569-599-629

77, 119- numbers multiple to 7

Let's consider the numerical pattern we've obtained:

77= 7·11;	371=7·53;
119=7·17;	413=7·59;
161=7·23;	497=7·71;
203=7·29;	539=7·77;
287=7·41;	581=7·83;
329=7·47;	623=7·89.

We can see that all numbers multiplied to 7 (-number from the range q) are the numbers from the range r, thus, the pattern of this number has the view $q_1 \cdot r$ where q_1 is the fixed number and r is the disposal variable.
After making some further observations, it is possible to calculate only two types of numerical patterns of this numerical circuit: $r_1 \cdot q$ and $q_1 \cdot r$ where r_1 and q_1 are the fixed numbers.

Let's consider the numbers that shall remain after calculation and exclusion of all numerical patterns [redacted]. We shall see that all remaining numbers are prime, thus, we've obtained the first infinite range of prime numbers *-n(r)*.

Fig.10

-11-41-71-101-131-161-191-221-251-281-311-341-371-401-431-461-491-521-551-581-611
-17-47-77-107-137-167-197-227-257-287-317-347-377-407-437-467-497-527-557-587-617
-23-53-83-113-143-173-203-233-263-293-323-353-383-413-443-473-503-533-563-593-623
-29-59-89-119-149-179-209-239-269-299-329-359-389-419-449-479-509-539-569-599-629

77, 119- numbers multiple to 7
11, 143- numbers multiple to 11
221, 299- numbers multiple to 13
323, 527- numbers multiple to 17
437, 551- numbers multiple to 19

-11-41-71-101-131-161-191-221-251-281-311-341-371-401-431-461-491-521-551-581-611
-17-47-77-107-137-167-197-227-257-287-317-347-377-407-437-467-497-527-557-587-617
-23-53-83-113-143-173-203-233-263-293-323-353-383-413-443-473-503-533-563-593-623
-29-59-89-119-149-179-209-239-269-299-329-359-389-419-449-479-509-539-569-599-629

11, 17- prime numbers

In such a manner we obtain the following formulas:

$n(q)=q-(q_1 \cdot q+ r_1 \cdot r)$ – the prime numbers of the first range;
$n(r)=r-(q_1 \cdot r+ r_1 \cdot q)$ – the prime numbers of the second range;
And since $n= n(q)+n(r)$, so

$$n= (q-(q_1 \cdot q+ r_1 \cdot r))+(r-(q_1 \cdot r+ r_1 \cdot q)).$$

The mathematics for me is a philosophy. Research of prime numbers for me was incredibly interesting project. It pushes on reflections about that as our world is beautiful. Perhaps in my article there are a lot of mistakes and illegibilities - I apologize for it. Therefore I give the e-mail address on which you can send the remarks and questions. I will be very grateful for any comments about this work.

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