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Numbers Seven Relevance with, Six and Other Ranks

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Abstract: The number seven mentioned in many religions, also it's the lucky number for others. 7 is that the solely dimension, besides the acquainted three, within which a vector are often outlined. Seven is that the lowest number that can't be painted because the total of the squares of 3 integers. In the present article, we endeavors to shed light on the mathematical relationships, that shows the relationship between numbers 6, 7 and with the different ranks, consisting of the one digit or two digits and so on if we repeater to make it consist of six digits or its double- digit all of them are divisible by 7.

Keywords: number seven, Ranks, lucky number, mathematical relationships

INTRODUCTION

Number theory is that the study of the set of positive whole numbers 1, 2, 3, 4, 5, 6, 7, . . . ,

Which are usually known as the set of natural numbers? Since history, people have separated the natural numbers into a range of various sorts [1].

Here are some familiar and not-so-familiar examples:

Odd 1, 3, 5, 7, 9, 11, …
Even 2, 4, 6, 8, 10, . . .
Square 1, 4, 9, 16, 25, 36, . . .
Cube 1, 8, 27, 64, 125, . . .
Prime 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, . . .
Composite 4, 6, 8, 9, 10, 12, 14, 15, 16, . . .
1 (modulo 4) 1, 5, 9, 13, 17, 21, 25, . . .
3 (modulo 4) 3, 7, 11, 15, 19, 23, 27, . . .
Triangular 1, 3, 6, 10, 15, 21, . . .
Perfect 6, 28, 496, . . .
Fibonacci 1, 1, 2, 3, 5, 8, 13, 21, . . .

Many of those [2] sorts of numbers area unit doubtless already better-known to you. Others, such as the "modulo 4" numbers, might not be acquainted. Variety is [3] claimed to be congruent to one (modulo four) if it leaves a remainder of one once divided by 4, and equally for the [4, 5] three (modulo 4) numbers} is termed triangular if that number of pebbles will be organized in a very triangle, with one stone at the highest, 2 pebbles in the next row, and so on.

Since you have got been victimization the10 completely different digits zero, 1, 2, 3, 4, 5, 6, 7, 8, and nine all of your life [6, 7, 3] you may wonder however it's doable to count and do arithmetic while not victimization all ten.

Actually, there's no advantage in victimization ten count digits instead of, 6,8,12, or 16. The 10-digit system (called the positional representation system, since the word "decimal" means that "based on 10") most likely came into universal use as a result of man initial began to count by victimization his fingers, and there happen to be ten of them.

In the starting [8], varied Hindus wrote seven additional or less in one stroke as a curve that appears like a majuscule J vertically inverted. The western Ghubar Arabs' main contribution was to create the [9] longer line diagonal instead of straight, although they showed some tendencies to creating the character additional linear. The Japanese Arabs developed the character [10-12] from a 6-look-alike into a majuscule V-look-alike. each fashionable Arab types influenced the ecu form, a two-stroke character consisting of a horizontal higher line joined at its right to a line taking place to the lowest left corner, a line that's slightly incurved in some font variants. As is that the case with the ecu

glyptography, the Cham and Khmer glyptography for seven conjointly evolved to appear like their glyptography for one, although in an exceedingly totally different method, so that they were conjointly involved with creating their seven additional totally different [13, 14]. For the Khmer this typically concerned adding a horizontal line on top of the glyptography, this can be analogous to the horizontal stroke through the center that's typically employed in handwriting within the Western world however that is sort of ne'er employed in pc fonts. This horizontal stroke is, however, vital to tell [15, 4] apart the glyptography for seven from the glyptography for one in writings that use a protracted stroke within the [16-18] glyptography for one. In some Greek dialects of early 12th century the longer line diagonal was drawn in an exceedingly rather curved crosswise line.

The Arabs took Shedhanta by Brahma Gupta, who put it in about 6 AH / 628 AD and used the nine numbers).Until the era of the [1] Caliph Al-Ma'mun until 198 AH / 813 AD The Khawarizmi used the Indian numbers in the astrological simulations. .

Then published in 210 AH / 825 AD letter known in Latin as Algoritmi de numero Indorum or Khwarizmi for Indian numbers.

The term Algoritmi or Gourmus became meaning in Europe in the Middle Ages a mathematical method based on decimal system. These figures were also known in al-Khawarizmi numbers. From that [19, 20] book , the Muslims knew the Indian account and took the numbering system. They found it better than the calculation of the sentences or the calculation of the [1, 21] Abjad. Al-Khawarizmi designed these figures based on the number of angles (acute or existing) contained in each number as in Figure 1.

The number one includes one angle, the number two [22] includes two angles, the number three includes three angles - etc.

The ingenious invention [23] added by Muslims is zero, which was a circle with no angle (zero angles).

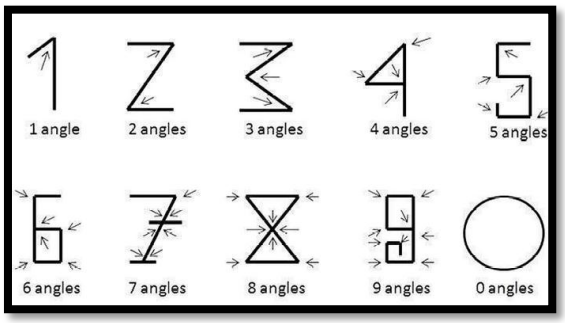

Fig-1: Al - Khwarizmi design for Arabic numerals and zero

Lucky numbers or number seven in religion plays a crucial role in Muslims' beliefs; in Old and New Testament (Seven indicates perfection and completion. From another side it is one of the most frequently used [24] numbers in the Bible. It is used approximately 735 times, including its derivatives (i.e., seventh, seventy times seven, etc.) [BIBLICAL], in Hindu religion, in Jewish beliefs, also in Chinese [Ali]. In mathematical notion called a happy number. 999,999 divided by seven is strictly 142,857. Therefore, once a [25] vulgar fraction with seven within the divisor is regenerate to a decimal growth, the result has constant six-digit repetition sequence when the mathematical notation, however the sequence will begin with any of these six digits. [7] for instance, 1/7 = 0.142857 142857... and 2/7 = zero.285714 285714....

The number seven puzzled scientists and noted the honey cell (figure 2) to see that it consists of six ribs and is linked to six cells and the total of all consists of seven cells [26] as in figure below:

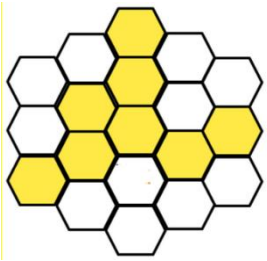

Fig-2: honey cell

In fact, if one kind the digits within the range 142,857 in ascending order, 124578, it's potential to grasp from that of the digits the decimal a part of the quantity goes to start with. The rest of dividing any range by seven can offer the position within the sequence 124578 that the decimal a part of the ensuing range can begin.

For instance, 628 ÷ 7 = 895/7

; Here five is that the remainder, and would correspond to range seven within the ranking of the ascending sequence, therefore during this case,

628 ÷ seven = 89.714285

Another example, 5238 ÷ 7 = 7482/7
, thence the rest is a pair of, and this corresponds to range a pair of within the sequence.

During this case, 5238 ÷ 7 = 748.285714.

PROBLEM STATEMENT

The aim of the research was to study the relationship between the numbers six, seven the numbers with six-digits and its complications.

There are straight forward geometric thanks to verify Gauss's formula, which can be the manner he discovered it himself. The concept is to require 2 triangles consisting of one + two + • • • + n pebbles and fit them along side one further diagonal of n + one pebbles. Fig. three show this idea for n = 6.

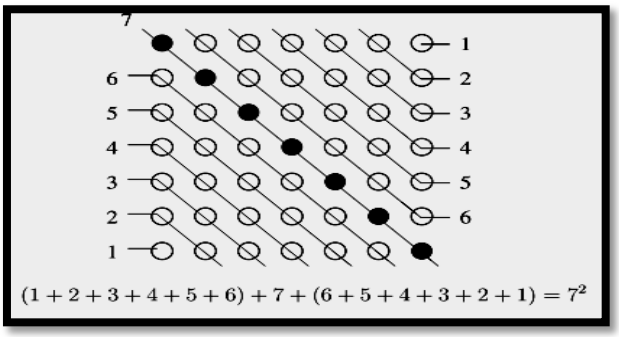

Fig-3: The adding of the primary n Integers in the figure

, it's marked the additional n + one = seven pebbles on the diagonal with black dots. The ensuing sq. has sides consisting of n + 1

Pebbles, so in mathematical terms we obtain the formula.

$2(1 + 2 + 3 + \cdot \cdot + n) + (n + 1) = (n + 1)^2$, (1)
Two triangles + diagonal = square.

Now we are able to take off n + one from either side and divide by two to induce Gauss's formula. Seven is that the lowest number that can't be pictured because the total of the squares of 3 integers. Seven is that the aliquot total of 1

variety, the cube-shaped variety eight and is that the base of the 7-aliquot tree. Conjointly seven is that the solely variety D that the equation has over 2 solutions for n and x natural.

$2n - D = x^2$ …….. (2)

Specially, the equation 2n − seven = x2 is understood because the (Ramanujan – Nagell equation). Seven is that the solely dimension, besides the acquainted three, within which a vector vector may be outlined. From another respect seven is that the lowest dimension of a legendary exotic sphere, though there could exist yet unknown exotic sleek structures on the 4- dimensional sphere.

999,999 divided by seven is precisely 142,857. Therefore, once a vulgar fraction with seven within the divisor is reborn to a decimal growth, the result has constant six-digit repetition sequence once the mathematical notation; however the sequence will begin with any of these six digits [7].
For example:

1/7 = 0.142857 142857...
And
2/7 = 0.285714 285714....

In fact, if one types the digits within the range 142857 in ascending order, 124578, it's potential to understand from that of the digits the decimal a part of the amount goes to start with. The rest of dividing any range by seven can provide the position within the sequence 124578 that the decimal a part of the ensuing range can begin.

For example, 628 ÷ 7 = 89

5/7; here 5 is the remainder, and would correspond to number 7 in the ranking of the ascending sequence. So in this case,

628 ÷ 7 = 89.714285
Another example, 5238 ÷ 7 = 748

2/7, hence the remainder is 2, and this corresponds to number 2 in the sequence.
In this case, 5238 ÷ 7 = 748.285714

A seven-sided form may be a polygonal shape. The regular n-gons for n ≤ half-dozen will be made by compass and hand tool alone, however the regular polygonal shape cannot. Figurate numbers representing heptagons (including seven) area unit referred to as heptagonal numbers. Seven is additionally a focused polygonal shape range. [8] Seven is that the initial number reciprocal (multiplicative inverse) with infinitely continuance common fraction illustration. There area unit seven frieze teams, the teams consisting of symmetries of the plane whose cluster of translations is is amorphous to the cluster of integers. There area unit seven elementary forms of catastrophes.

Fig-4: Graph of the probability distribution of the sum of 2 six-sided dice

RESULTS AND DISCUSSIONS

When rolling two standard six-sided dice, seven has a 6 in 36 (or1/6) probability of being rolled (1–6, 6–1, 2–5, 5–2, 3–4, or 4–3), the greatest of any number.

The Millennium Prize issues square measure seven issues in arithmetic that were expressed by the Clay arithmetic Institute in 2000. Currently, six of the issues stay unresolved. Sum of all prime numbers from 7 to 53 is the product of 2 numbers themselves, 7 and 53: 371 = 7×53 = 7+11+13+17+19+23+29+31+37+41+43+47+53.

1×7 + 3 = 10
14×7 + 2 = 100
142×7 + 6 = 1000
1428×7 + 4 = 10000
14285×7 + 5 = 100000
142857×7 + 1 = 1000000
1428571×7 + 3 = 10000000
14285714×7 + 2 = 100000000
142857142×7 + 6 = 1000000000
1428571428×7 + 4 = 10000000000
14285714285×7 + 5 = 100000000000
142857142857×7 + 1 = 1000000000000
1428571428571×7 + 3 = 10000000000000…

1/7 = 0.142857142857… or 0.142857.

Multiples of 142857 by 2, 3, 4, 5 and 6 yield 5 other rotations of the digits of the number itself: 285714, 428571, 571428, 714285 and 857142, respectively. Its multiple by 7 is 999999.

1. Each ratio 16758/2394 = 18459/2637 = 31689/4527 = 36918/5274 = 37926/5418 = 41832/5976 = 53298/7614 = 7, using each of 9 digits 1-9 once, shows how to arrange a 9-book set on 2 shelves to mark the book 7.
   The two equalities 65821/9403 = 7 = 28651/4093 use all 10 digits 0-9 once in each equality.
2. Any component number (from 1-9) of six mattresses or multiples such as being 12 or 18 and arranged.... etc were his personal duplicate consecutively was divisible by seven. For example;
   111111/7= 15873
   222222/7= 31746
   444444/7= 63492
   999999/7= 142857
   The role: ($n^{\wedge 6}$/7) = R…… (3)
   Which n = 1 to 9, R = any real number.
3. Any component two-digit number, if repeated three times so that the new issue becomes six homes, it is divisible by 7, for example, the number 12 is composed of two places if repeated three times it becomes 121212 and this number is six houses and is divisible by 7 another example:-
   343434/7= 49062
   565656/7= 80808
   959595/7= 137085
   The role is :- (nm) $^{\wedge 3}$ /7= R …… (4)
   Where: n, m any number from (0 to 9)
   R any real number

4. Any number of three digits if repeated twice so that the new issue becomes six digits, it is divisible by7, for example:
   The number 123 is composed of three if repeated twice it becomes 123123 and is divisible by 7.
   123123/7= 17589
   786789/7= 112398
   The role is (Cm) $^{\wedge 2}$ / 7= R …….. (5)
   Where: c, n, m is any number from (0-9), R real number

CONCLUSIONS

Seven is that the lowest number that can't be painted because the total of the squares of 3 integers Through our research we found and proved that there is a relations ships between number 6, 7 and the other ranks, the rest of the numbers should be repeated so that the numbers six digits or their doubled will be divisible by 7 if multiples by 6 or not. Also by this research we approved that the numbers are also have families.

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