

History of math –
leonardo ‘bigollo’
pisano essay sample
essay



**ASSIGN
BUSTER**

Leonardo Pisano (1170-1250) was an Italian figure theoretician. who was considered to be one of the most gifted mathematicians in the Middle Ages. However.

He was better known by his moniker Fibonacci. as many famous theorems were named after it. In add-on to that. Fibonacci himself some-times used the name Bigollo. which means goldbrick or a traveler. This is likely because his male parent held a diplomatic station.

and Fibonacci travelled widely with him. Although he was born in Italy. he was educated in North Africa and he was taught mathematics in Bugia. While being a ' bigollo' . he discovered the tremendous advantages of the mathematical systems used in the countries he visited.

Fibonacci's parts to mathematics are singular. Even in the world today. we still make day-to-day usage of his find. His most outstanding contribution would be the replacing of denary figure system. Yet. few people realized it.

Fibonacci had really replaced the old Roman numerical system with the Hindu-Arabic enumeration system. which consists of Hindu-Arabic (0-9) symbols. There were some disadvantages with the Roman numerical system: First. it did not hold 0's and lacked topographic point value ; Secondly. an abacus was normally required when utilizing the system. However.

Fibonacci saw the high quality of utilizing Hindu-Arabic system and that is the ground why we have our enumeration system today. He had included the account of our current enumeration system in his book "Liber Abaci" . The

book was published in 1202 after his return to Italy. It was based on the arithmetic and algebra that Fibonacci had accumulated during his travels. In the 3rd subdivision of his book Liber Abaci” . there is a math question that triggers another great innovation of world.

The job goes like this: A certain adult male put a brace of coneies in a topographic point surrounded on all sides by a wall. How many braces of coneies can be produced from that brace in a twelve month if it is supposed that every month each brace begets a new brace. which from the second month on becomes productive? This was the job that led Fibonacci to the introduction of the Fibonacci Numbers and the Fibonacci Sequence. What is so particular about the sequence? Let's take a expression at it. The sequence is listed as $S_n = f_n$.

1. 2. 3. 5. 8. 13.

21. 34. 55. $g(1)$ Get downing from 1.

each figure is the amount of the two predated Numbers.

Writing mathematically. the sequence looks like $S_n = f_n$; 2 ; 1 ; 2 ; $a_i =$ Army Intelligence? $2 +$ Army Intelligence? 1 where $a_1 = a_2 = 1$ $g(2)$ The most of import and influential belongings of the sequence is that the higher up in the sequence. the closer two back-to-back Fibonacci Numbers divided by each other will near the aureate ratio 1.61803399 . The prove is easy.

By definition. we have $' = a + b$ $a =$ Bachelor of Arts (3) From $' = ab$. we can obtain $a = b'$. Then.

<https://assignbuster.com/history-of-math-leonardo-bigollo-pisano-essay-sample-essay/>

by stop using into Equation 3. we will get $b' + bb' = b'b$. Simplify. we can acquire a quadratic equation $x^2 - x - 1 = 0$. Solving it.

$x = \frac{1 + \sqrt{5}}{2} \approx 1.61803399$. The aureate ratio was widely used in the Renaissance in picture. Today. Fibonacci sequence is still widely used in many different sectors of mathematics and scientific discipline.

For illustration. the sequence is an illustration of a recursive sequence. which defines the curvature of naturally occurring spirals. such as snail shells and even the form of seeds in flowering plants. One interesting fact about Fibonacci Sequence is that it was actually named by a Gallic mathematician Edouard Lucas in the 1870's. Other than the two well-known parts named above.

Fibonacci had also introduced the saloon we use in fractions today. Previous to that. the numerator had citation around it. Furthermore. the square root notation is besides a. Two measures a and B are said to be in the aureate ratio if $a + ba = ab = a'$.

The Renaissance was a cultural motion that spanned approximately the 14th to the 17th century. getting down in Florence in the Late Middle Ages and subsequently distributing to the remainder of Europe. It was a cultural motion that deeply affected European rational life in the early modern period. Fibonacci method.

which was included in the 4th subdivision of his book *Liber Abaci*. There are non merely common day-to-day applications of Fibonacci's contributions. but besides a batch of theoretical parts to pure mathematics. For instance. one time.

Fibonacci was challenged by Johannes of Palermo to work out an equation, which was taken from Omar Khayyam's algebra book. The equation is $10x + 2\sqrt{2 + x^3} = 20$. Fibonacci solved it by agencies of the intersection of a circle and a hyperbola. He proved that the root of the equation was neither an integer nor a fraction, nor the square root of a fraction.

Without explicating his methods, he approximated the solution in sexagesimal notation as 1. 22. 7. 42. 33.

4. 40. This is tantamount to $1 + \frac{22}{60} + \frac{7}{60^2} + \frac{42}{60^3} + \dots$ and it converts to the decimal 1.3688081075 which is right to nine denary topographic points. The solution was a remarkable achievement and it was embodied in the book "Flos".

"Liber Quadratorum" is Fibonacci's most impressive piece of work, although it is not the work for which he is most celebrated for. The term "Liber Quadratorum" means the book of squares. The book is a figure theory book, which examines methods to find Pythagorean three-base hits.

He first noted that square numbers could be constructed as amounts of uneven numbers, basically depicting an inductive building utilizing the expression $n^2 + (2n + 1) = (n + 1)^2$. He wrote: I thought about the beginning of all square numbers and discovered that they arose from the regular activity of uneven numbers. For integrity is a square and from it is produced the first square.

viz. 1; adding 3 to this makes the second square, viz. 4, whose root is 2; if to this amount is added a 3rd uneven figure,

viz. 5. the 3rd square will be produced. viz.

9. whose root is 3 ; andso the sequence and series of square Numberss ever rise through the regularaddition of uneven Numberss. Therefore when I wish to nd two square Numberss whoseaddition produces a square figure. I take any uneven square figure as one of thetwo square Numberss and I nd the other square figure by the add-on of allthe uneven Numberss from integrity up to but excepting the uneven square figure. Forexample. I take 9 as one of the two squares mentioned ; the staying squarewill be obtained by the add-on of all the uneven Numberss below 9.

viz. 1. 3. 5. 7.

whose amount is 16. a square figure. which when added to 9 gives 25. a squarenumber.

Fibonacci's part to mathematics has been mostly unmarked. How-ever. his work in figure theory was about ignored and virtually unknownduring the Middle Ages. The same consequences appeared in the work of Maurolicothree hundred old ages subsequently. Apart from pure math theories.

all of us should bethankful for Fibonacci's work. because what we have been making all the clip. was his fantastic creative activity. MentionsDeb Russell. A short Biography of Leonardo Pisano Fibonacci. RetrievedNovember 13.

2009. from Approximately. com: hypertext transfer protocol: //math. about. com/od/mathematicians/a/ bonacci. htm [2] J.

<https://assignbuster.com/history-of-math-leonardo-bigollo-pisano-essay-sample-essay/>

J. O'Connor E. F. Robertson. Leonardo Pisano Fibonacci. Retrieved November 13.

2009. from GAP-Groups. Algorithms. Programming-aSystem for Computational Discrete Algebra: hypertext transfer protocol: //www. gap-system. org/ history/Biographies/Fibonacci.

hypertext markup language [3] Wikipedia subscribers. Goldenratio. Retrieved November 13. 2009. from Wikipedia. The Free Encyclopedia: hypertext transfer protocol: //en.

wikipedia. org/w/index. php? title= Golden ratio & A ; oldid= 322450397 [4] Wikipedia subscribers. Renaissance.

Retrieved November 13. 2009. fromWikipedia. The Free Encyclopedia: hypertext transfer protocol: //en.

wikipedia. org/w/index. php? title= Renaissance & A ; oldid= 3217603544