

# [History of math – leonardo ‘bigollo’ pisano essay sample essay](https://assignbuster.com/history-of-math-leonardo-bigollo-pisano-essay-sample-essay/)

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

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

and Fibonacci travelledwidely with him. Although he was born in Italy. he was educated in NorthAfrica and he was taught mathematics in Bugia. While being a ‘ bigollo’ . hediscovered the tremendous advantages of the mathematical systems used in thecountries he visited.

Fibonacci’s parts to mathematics are singular. Even in the worldtoday. we still make day-to-day usage of his find. His most outstanding contributionwould be the replacing of denary figure system. Yet. few people realizedit.

Fibonacci had really replaced the old Roman numerical system with theHindu-Arabic enumeration system. which consists of Hindu-Arabic ( 0-9 ) symbols. There were some disadvantages with the Roman numerical system: First. it didnot hold 0’s and lacked topographic point value ; Secondly. an abacus was normally requiredwhen 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. 1He had included the account of our current enumeration system in his bookLiber Abaci” . The book was published in 1202 after his return to Italy. It wasbased on the arithmetic and algebra that Fibonacci had accumulated during histravels. In the 3rd subdivision of his book Liber Abaci” . there is a math questionthat 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 awall. How many braces of coneies can be produced from that brace in a twelvemonth if it issupposed that every month each brace begets a new brace. which from the secondmonth on becomes productive? This was the job that led Fibonacci to theintroduction of the Fibonacci Numbers and the Fibonacci Sequence. What isso particular about the sequence? Let’s take a expression at it. The sequence is listed asSn= f1.

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

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

each figure is the amount of the two predating Numberss. Writingmathematically. the sequence looks likeSn= f8 I & gt ; 2 ; I 2 Z ; ai = Army Intelligence? 2 + Army Intelligence? 1 where a1 = a2 = 1g ( 2 ) The most of import and inuential belongings of the sequence is that the higherup in the sequence. the closer two back-to-back Fibonacci Numberss divided byeach other will near the aureate ratio1. ‘ = 1+p52 1: 61803399. The proveis easy.

By de nition. we have’ = a+ba = Bachelor of Arts ( 3 ) From ‘= ab. we can obtain a = b’ . Then.

by stop uping into Equation 3. we willget b’+bb’ = b’b. Simplify. we can acquire a quadratic equation ‘ 2? ‘ ? 1 = 0. Solving it.

‘ = 1+p52 1: 61803399. The aureate ratio was widely used in theRenaissance2 in picture. Today. Fibonacci sequence is still widely used inmany di erent sectors of mathematics and scientific discipline.

For illustration. the sequenceis an illustration of a recursive sequence. which de nes the curvature of naturallyoccurring spirals. such as snail shells and even the form of seeds inoweringplants. One interesting fact about Fibonacci Sequence is that it was actuallynamed by a Gallic mathematician Edouard Lucas in the 1870’s. Other than the two well-known parts named above.

Fibonacci hadalso introduced the saloon we use in fractions today. Previous to that. the numer-ator had citation around it. Furthermore. the square root notation is besides a1Two measures a and B are said to be in the aureate ratio if a+ba = ab=’ .

2The Renaissance was a cultural motion that spanned approximately the 14th to the 17thcentury. get downing in Florence in the Late Middle Ages and subsequently distributing to the remainder ofEurope. It was a cultural motion that deeply a ected European rational life in theearly modern period. 2Fibonacci method.

which was included in the 4th subdivision of his book LiberAbaci” . There are non merely common day-to-day applications of Fibonacci’s contribu-tions. but besides a batch of theoretical parts to pure mathematics. Forinstance. one time.

Fibonacci was challenged by Johannes of Palermo to work out aequation. which was taken from Omar Khayyam’s algebra book. The equationis 10x+2? 2+x3 = 20. Fibonacci solved it by agencies of the intersection of a circleand a hyperbola. He proved that the root of the equation was neither an integernor a fraction. nor the square root of a fraction.

Without explicating his meth-ods. he approximated the solution in sexagesimal3 notation as 1. 22. 7. 42. 33.

4. 40. This is tantamount to 1 + 2260 + 7602 + 42603 + . and it converts to the decimal1. 3688081075 which is right to nine denary topographic points. The solution was a re-markable acheivement and it was embodied in the book Flos” .

Liber Quadratorum” is Fibonacci’s most impressive piece of work. althoughit is non the work for which he is most celebrated for. The term Liber Quadra-torum” means the book of squares. The book is a figure theory book. whichexamines methods to nd Pythogorean three-base hits.

He rst noted that square num-bers could be constructed as amounts of uneven Numberss. basically depicting aninductive building utilizing the expression n2 + ( 2n + 1 ) = ( n + 1 ) 2. He wrote: I thought about the beginning of all square Numberss and discovered that theyarose from the regular acclivity of uneven Numberss. For integrity is a square and fromit is produced the rst square.

viz. 1 ; adding 3 to this makes the secondsquare. 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.

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