

KMVMathsDigest

Mathematics - Science of all Sciences & Art of all Arts

HISTORY OF MATHEMATICS

The history of mathematics is nearly as old as humanity itself. Since antiquity, mathematics has been fundamental to advances in science, engineering, and philosophy. It has evolved from simple counting, measurement and calculation, and the systematic study of the shapes and motions of physical objects, through the application of abstraction, imagination and logic, to the broad, complex and often abstract discipline we know today.

From the notched bones of early man to the mathematical advances brought about by settled agriculture in Mesopotamia and Egypt and the revolutionary developments of ancient Greece and its Hellenistic empire, the story of mathematics is a long and impressive one.

The East carried on the baton, particularly China, India and the medieval Islamic empire, before the focus of mathematical innovation moved back to Europe in the late Middle Ages and Renaissance. Then, a whole new series of revolutionary developments occurred in 17th Century and 18th Century Europe, setting the stage for the increasing complexity and abstraction of 19th Century mathematics, and finally the audacious and sometimes devastating discoveries of the 20th Century. Follow the story as it unfolds in this series of linked sections, like the chapters of a book. Read the human stories behind the innovations, and how they made - and sometimes destroyed - the men and women who devoted their lives to...

WHAT IS MATHEMATICS?

Mathematics may be defined as "the study of relationships among quantities, magnitudes and properties, and also of the logical operations by which unknown quantities, magnitudes, and properties may be deduced" (*Microsoft Encarta Encyclopedia*) or "the study of quantity, structure, space and change" (*Wikipedia*).

Historically, it was regarded as the science of quantity, whether of magnitudes (as in geometry) or of numbers (as in arithmetic) or of the generalization of these two fields (as in algebra). Some have seen it in terms as simple as a search for patterns.

During the 19th Century, however, Mathematics broadened to encompass mathematical or symbolic logic, and thus came to be regarded increasingly as the science of relations or of drawing necessary conclusions (although some see even this as too restrictive).

Infinity is today so well integrated into today's language that we can scarcely imagine many thoughts and expressions without it. However, despite its widespread use, infinity is one of those objects we scarcely understand. Most of us view time as infinite and space as infinitesimally decomposable and possibly infinite in breadth, even though both involve unmeasurable, unfathomable dimensions that defy comprehension. Yet, infinities (yes, there are several) are very, very useful to "tie" things together,

THE STORY OF MATHEMATICS.

Mathematics starts with counting. It is not reasonable, however, to suggest that early counting was mathematics. Only when some record of the counting was kept and, therefore, some representation of numbers occurred can mathematics be said to have started. In Babylonia mathematics developed from 2000 BC. Number problems such as that of the Pythagorean triples (a,b,c) with $a^2+b^2 = c^2$ were studied from at least 1700 BC. Geometric problems relating to similar figures, area and volume were also studied and values obtained for π .

The Birth of Zero

The Hindus were the first to think of 0 not only as a place holder (as in 703), but as a number in its own right, with arithmetic properties such as $2 + 0 = 2$ and $7 \times 0 = 0$. This required a whole new way of thinking: zero was promoted from being nothing to being an actual number that one could work with. Early important Indian mathematicians included Aryabhata, Brahmagupta, and Bhaskara, the latter two being among the first to work with negative quantities.

Secret to the perfect pancake described Mathematically



Mathematics students from the University of Sheffield, South Yorkshire, England have swapped calculus for the kitchen by developing a formula to prepare the perfect pancake. In collaboration with Meadowhall Shopping Centre in Sheffield, students from the University's Maths Society (SUMS) developed, trialled and tested a formula which enables pancake-lovers across the world to rustle-up pancakes to their own personal preference, taking into account the number of pancakes required, thickness and pan size. Tested by chefs at Meadowhall's Frankie and Benny's restaurant, the formula translates to:

$$\text{Mixture required per pancake: } \frac{D^2 \times T \times \pi}{4} \text{ ml}$$

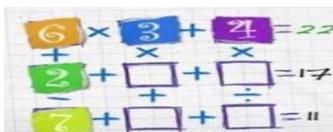
$$\text{Total mixture required: } \frac{D^2 \times T \times \pi \times P}{4} \text{ ml}$$

Frying pan diameter: D cm

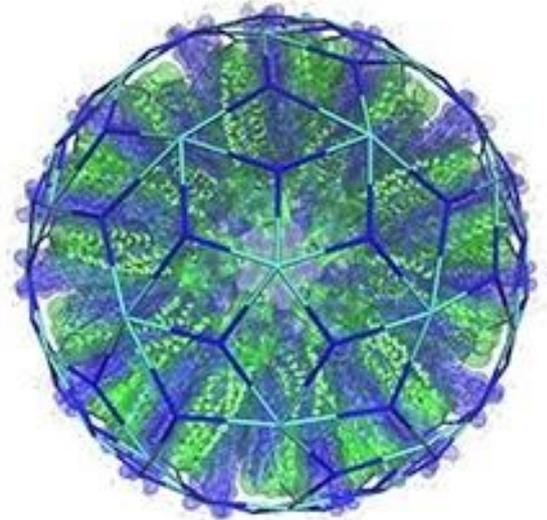
Desired thickness of pancake: T cm

Number of pancakes wanted: P

For more details view : <http://phys.org/news/2016-02-secret-pancake-mathematically.html#jCp>



Scincentists declared Mathematics a tool to improve human health



Scientists at the Universities of York and Torino have used Mathematics as a tool to provide precise details of the structure of protein nanoparticles, potentially making them more useful in vaccine design. Using Mathematics to predict the geometries of nanoparticles can help scientists to select those whose structures are the most advantageous for the design of new vaccines. The constant need for vaccine development as new strains of disease evolve has generated a worldmarket.

For more details view:

<http://phys.org/news/2016-02-mathematics-human-health.html#jCp>

How to get a number 100
Using Four sevens(7's)
and a one (1) ????

Improving musical synchronization with Mathematical Modeling

In a recently-published paper in the *SIAM Journal on Applied Mathematics*, authors Donald Drew, Kevin Dolch, and Maury Castro propose a stochastic differential equation model that simulates how musical performers in a large group respond to a conductor, other musicians and additional distractions modelled as "noise." In an ideal situation, musicians would be able to perfectly coordinate the rate of change at which pitch and relative loudness occur while simultaneously ignoring noise and the distractions of the other musicians. However, the authors recognize that the aforementioned stimuli cause execution errors from each individual.

For more details view:

<http://phys.org/news/2016-01-musical-synchronization-mathematical.html#jCp>



250 years old research methodology helps to solve 21st Century population questions

Researchers from the ESRC Centre for Population Change at the University of Southampton and Statistics New Zealand have published an article in the Routledge journal *Population Studies* arguing that Bayesian methodology, a statistical tool introduced by Rev. Thomas Bayes in the 18th Century, is vital in providing solutions to many difficult statistical problems, particularly those presented by 21st Century population studies. The open access article examines the achievements of Bayesian methodology and makes the case for its wider use in demography and other population sciences. The results show that there are a number of distinct features of demography that make it especially suited for the application of Bayesian methods and, likewise, demographic studies have a lot to offer back to Bayesian methodology.

Bayesian statistics is unique in its coherent use of probability distributions to describe uncertainty, and its recent use in demography. Bayes' theorem was presented to the Royal Society just over 250 years ago, but it was largely unused until recent decades. Its use is now growing fast, following methodological and computational developments, and there is a trend towards probabilistic rather than deterministic perspectives.

For more details view:

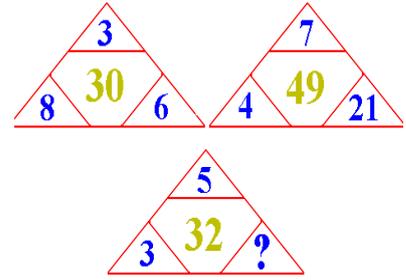
<http://phys.org/news/2016-02-year-old-methodology-21st-century-population>.

Mathematics

MAY NOT TEACH US HOW TO ADD LOVE OR MINUS HATE. BUT IT GIVES US EVERY REASON TO HOPE THAT EVERY PROBLEM HAS A SOLUTION.

Simple Math

"2get" and "2give" creates many problems
So, Just double it.....
"4get" and "4give" solves many problems



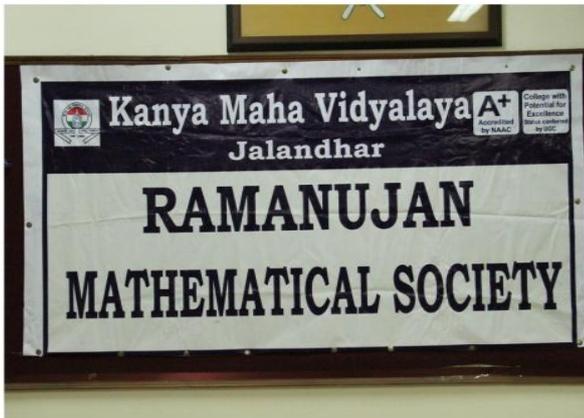
facts

The number 2(Two) is the only prime number that does not have an "e" in its name.

October 10th is celebrated as National metric Day.

Have you heard about a palindrome number? It is a number that reads the same backwards and forward. e.g 12421

Mathematics Department organised Quiz Competition and Mathematical games



E-5082



E-5090



2808-3





E-5246

Shankey of M.Sc(Mathematics) got 15th position in university



E-5247

Department honoured UG/PG students for getting marks above 90%

MATHEMATICAL RANGOLI COMPETITION

Department of Mathematics organized a MATHEMATICAL RANGOLI COMPETITION in which more than hundred students of Under Graduate and Post Graduate Classes participated. Students made 3D Mathematical figures, Statistical figures, explained Beauty of Mathematics in Nature with Fibonacci Series, Graph of Mathematical Functions, Golden Ratio, Newton's Law etc.



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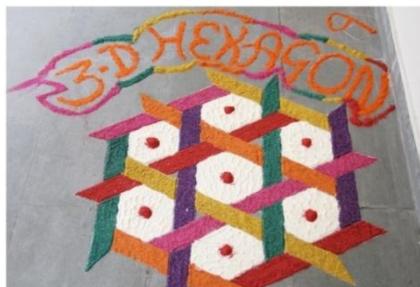
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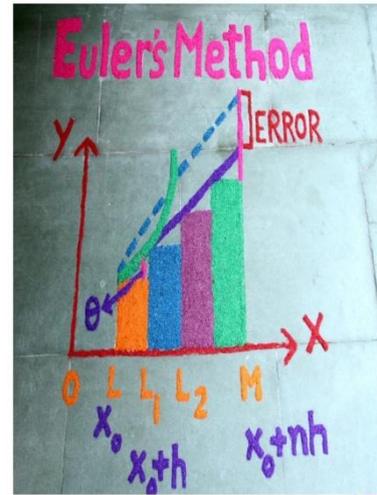
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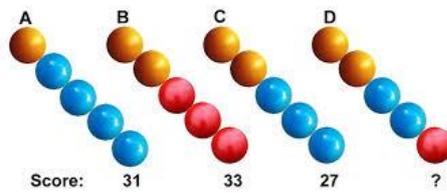


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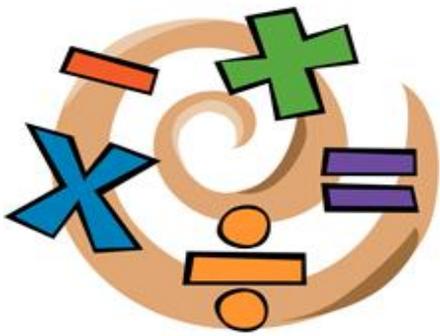


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'Can you use only 4 lines to cut a pizza into 11 pieces?'



P.G Department of Mathematics organized an Extension lecture on Number Theory by Dr. Dinesh Khurana from Mathematics Department, Punjab University, Chandigarh



P.G Department of Mathematics organized the lecture on Vedic Mathematics by Ms. Anand Prabha (Assistant Professor of PG department of Mathematics of KMV college)



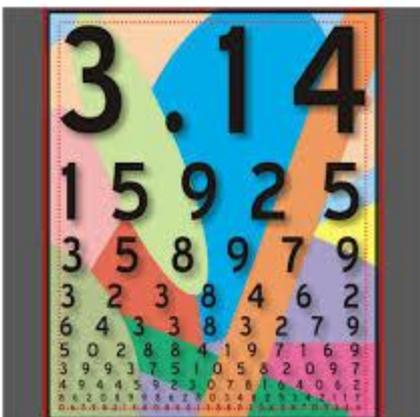
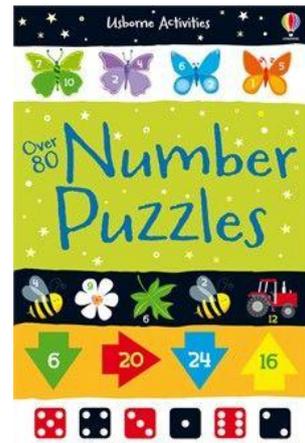
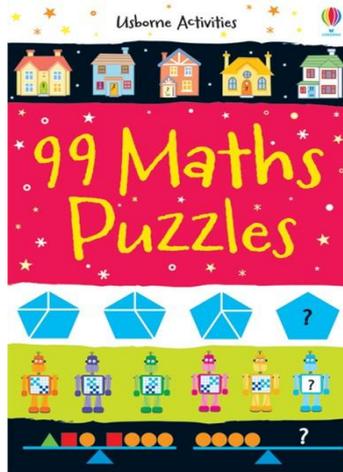
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Maths: the colorful mathematical ex... by reactiv... Zazzle



shutterstock

