

S.C.U.G.V.H.S.S.

PATTANAKKAD

MATHS CLUB PRESENTS

MAGIC OF MATHS

Magic of Maths



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Mathematical Literacy



Pythagoras

Pythagoras is often referred to as the first pure mathematician.

He was born on the island of Samos, Greece in 569 BC. Various writings place his death between 500 BC and 475 BC in Metapontum, Lucania, Italy. His father, Mnesarchus, was a gem merchant. His mother's name was Phthia. Pythagoras had two or three brothers.

Some historians say that Pythagoras was married to a woman named Theano and had a daughter Damo and a son named Telauges, who succeeded Pythagoras as a teacher and possibly taught Empedocles. Others say that Theano was one of his students, not his wife and say that Pythagoras never married and had no children. Pythagoras was well educated, and he played the lyre throughout his lifetime, knew

Poetry and recited Homer. He was interested in Mathematics, Philosophy, Astronomy and music and was greatly influenced by Pythagoras.

Pythagoras believed:-

- **All** things are numbers. Mathematics is the basis of everything, and geometry is the highest form of mathematical studies. The physical world can be understood through mathematics.
- **The** soul resides in the brain and is immortal. It moves from one being to another, sometimes from a human into an animal, through a series of reincarnations called transmigration until it becomes pure. Pythagoras believed that both mathematics and music could purify.
- **Numbers** have personalities, characteristics, strengths and weaknesses.
- **The** world depends upon the interaction of opposites, such as male and female, lightness and darkness, warm and cold, dry and moist, light and heavy, fast and slow.
- **Certain** symbols have a mystical significance. • **All** members of the society should observe strict loyalty and secrecy.



Euclid

Euclid is one of the World's most famous mathematicians, yet very little is known of his life, except that he taught at Ptolemy's University at Alexandria, Egypt.

Euclid's most famous work is his collection of 13 books dealing with geometry, called the Elements. As producer of the 'Elements', his most prominent work, Euclid became the leading mathematician and teacher of all time. The book comprises of sixteen volumes of geometry books consisting of the most useful geometrical proofs which have maintained their significance till the present day; this book also has information on the number theory, infinitude of prime numbers, Euclid's

Euclid did this by working out
the relation between the eyes
and the things seen by them.

The work 'optics' is
sometimes believed to be more
advanced mathematics than
the 'Elements'. Optics is not
like a theorem which is used
to prove a theory but actually
is used to prove a theory but
actually is used to highlight a
feature of an already present
theory. 'Catoptrics' dealt with
the mathematical theory on
mirrors. 'Conics' was about
conic sections and 'surface loci'
is conjectured to be about quadric
surfaces. Other attributions by
Euclid also included his works on
mechanics the source being Arabic in
nature.

and theory of proportions.

Other Works

Euclid has worked in many other areas of geometry such as in the book 'Data' where his plane geometry is mentioned. Another book 'On Divisions' also deals with Euclid's ideas on plane geometry. 'Phaenomena' by Euclid would be the modern day 'applied mathematics' which concerns the geometry of spheres used mostly in astronomy. Other survived works include 'Optics' and 'Perspectiva'. 'Optics' corrected the misconception of the time that the sun, moons and other heavenly bodies are the same size as they appear to the naked eye.



Srinivasa Ramanujan

Srinivasa Ramanujan, an Indian mathematician was born in 22nd December, 1887 in Madras, India. who lived during the British Rule in India. He made substantial contributions to mathematical analysis, number theory, infinite series, and continued fractions, including solutions to mathematical problems then considered unsolvable. Ramanujan initially developed his own mathematical research in isolation. He tried to interest the leading professional mathematicians in his work, but failed for the most part.

S. Ramanujan

Contributions to mathematics

His chief contribution to mathematics lies mainly in analysis, game theory and infinite series. He made in depth analysis in order to solve various mathematical problems by bringing to light new and novel ideas that gave impetus to progress of game theory. Such was his mathematical genius that he discovered his own theorem. It was because of his keen insight and natural intelligence that he came up with infinite series of π .

$$\frac{1}{\pi} = \frac{2\sqrt{2}}{9801} \sum_{k=0}^{\infty} \frac{(4k)!(1103+26390k)}{(k!)^4 396^{4k}}$$

This series made up the basis of certain algorithms that are used today. One such remarkable instance is when he solved the bivariate problem of his route at speed of movement.

with a novel answer that solved the whole class of problems through continued fraction. Besides that he also led to draw some formerly unknown identities such as by linking coefficients of and providing identities for hyperbolic secant.

He also described in detail the mock theta function, a concept of mock modular form in mathematics. Initially, this concept remained an enigma but now it has been identified as holomorphic parts of q -series forms. His numerous assertions in mathematics or concepts opened up new vistas of mathematical research for instance his conjecture of size of tau function that has distinct modular form in theory of modular forms.



Aryabhatta

Aryabhatta was an acclaimed mathematician astronomer. He was born in Kusumapura (present day Patna) in Bihar, India. His contribution to mathematics, science and astronomy is immense and yet has not been awarded the recognition in the World history of science. At the age of 25, he wrote his famed "Aryabhatiya". He was aware of the concept of Zero, as well as the use of large numbers up to 1018. He was the first to calculate the value fourth decimal point. He devised the formula for calculating areas of triangles and circles.

Assessments

ആകാശകൃത്രിമ ശാസ്ത്രം

സമയം

60 സെക്കന്റ് = 1 മിനിറ്റ്

60 മിനിറ്റ് = 1 മണിക്കൂർ

24 മണിക്കൂർ = 1 ദിവസം

7 ദിവസം = 1 ആഴ്ച

30 ദിവസം = 1 മാസം

12 മാസം = 1 കൊല്ലം

365 ദിവസം = 1 വർഷം

10 കൊല്ലം = 1 ദശകം

100 കൊല്ലം = 1 ശതകം

1000 കൊല്ലം = 1 സഹസ്രകം

തദ്ദേശ (പ്രദേശ)

16	ദിനങ്ങൾ	=	1 പന്ത്രണ്ട്
14	പന്ത്രണ്ട്	=	1 കല്ല
2	കല്ല	=	1 കാലം
4	കാലം	=	1 ഗണകൃഷ്ണ
20	ഗണകൃഷ്ണ	=	1 ദശ
2240	പന്ത്രണ്ട്	=	1 ദശ
10	നവകോടി	=	1 കി. മി.
1	മീറ്റർ	=	100 സെ. മി.
1	മീറ്റർ	=	1000 മി. മി.
1	കി. മി.	=	1000 മീറ്റർ

Thrombotic
Thrombocytopenic
Thrombocytopenic
Thrombocytopenic

കണക്കിലെ സൂത്രവാക്യങ്ങൾ

$$(a+b)(c+d) = ac + ad + bc + bd$$

$$(a+b)^2 = a^2 + 2ab + b^2$$

$$(a+b)(a-b) = a^2 - b^2$$

$$(a-b)^2 = a^2 - 2ab + b^2$$

കർണവരിഗതം = പാദവരിഗതം + ലംബവരിഗതം
 ത്രികോണത്തിന്റെ വിസ്തീർണ്ണം

$$= \frac{1}{2} \times \text{പാദം} \times \text{ലംബം}$$

$$= \frac{1}{2} bh$$

മുട്ടുത്രികോണത്തിന്റെ വിസ്തീർണ്ണം

$$= \frac{1}{2} bh \quad [b = \text{പാദം}, h = \text{ഉന്നതി}]$$

വൃത്തത്തിന്റെ വിസ്തീർണ്ണം

$$= \pi r^2$$

വൃത്തത്തിന്റെ പരിധി c

$$= 2\pi r$$

$$= \pi d$$

Handwritten text in red ink, possibly a signature or name, enclosed in a pink outline. The text is written in a cursive style and appears to read "Khatun" followed by a symbol resembling a dollar sign (\$) and "Khatun" followed by another dollar sign symbol (\$).

MATHS ABOUT ME

Number number all around,
Everywhere they can be found,
Numbers tell how old I am
And how many people in my farm.

How much I weight and just how tall
Where I live, and that's not all!

Numbers are a part of me
Money, time and history.

When to wake up and when to eat,
What size shoes to buy for my feet.

How much money something costs.
A number to call if my dog gets lost.

I don't know where I would be
If numbers weren't a part of me!

Maths

A Challenge

Try, try and try.
The more I try,
The more I cry.
I practice maths with my heart
and soul,
Yet I am not able to achieve my
goal.

I never get marks in maths,
In spite of my great endeavors
Lite is never in my favour,

I really want to improve my maths
because I love this subject
and for this I am trying my level best
I am candid so I confess,

In mathematics examination I
always create a mess, all the
answers I guess, and ultimately -

The marks I get are quite less.

I believe that if I do ample practice,

I will one day probably achieve my goal and I

Seriously have to improve, because in our lives maths plays a very significant role...

Handwritten text in red ink, possibly a signature or name, enclosed in a pink outline. The text is written in a cursive style and appears to read "S. J. Math" and "S. J. Math" repeated.

സംഖ്യ ഗോപുരം

$$1 \times 9 + 2 = 11$$

$$12 \times 9 + 3 = 111$$

$$123 \times 9 + 4 = 1111$$

$$1234 \times 9 + 5 = 11111$$

$$12345 \times 9 + 6 = 111111$$

$$123456 \times 9 + 7 = 1111111$$

$$1234567 \times 9 + 8 = 11111111$$

$$12345678 \times 9 + 9 = 111111111$$

Number Magic

$$9 \times 9 + 7 = 88$$

$$98 \times 9 + 6 = 888$$

$$987 \times 9 + 5 = 8888$$

$$9876 \times 9 + 4 = 88888$$

$$98765 \times 9 + 3 = 888888$$

$$987654 \times 9 + 2 = 8888888$$

$$9876543 \times 9 + 1 = 88888888$$

$$98765432 \times 9 + 0 = 888888888$$

$$\boxed{1} + \boxed{5} - \boxed{2} = 4$$

+

-

×

$$\boxed{7} - \boxed{4} \times \boxed{9} = 27$$

-

?

?

$$\boxed{6} \times \boxed{8} - \boxed{3} = 16$$

=

=

=

2

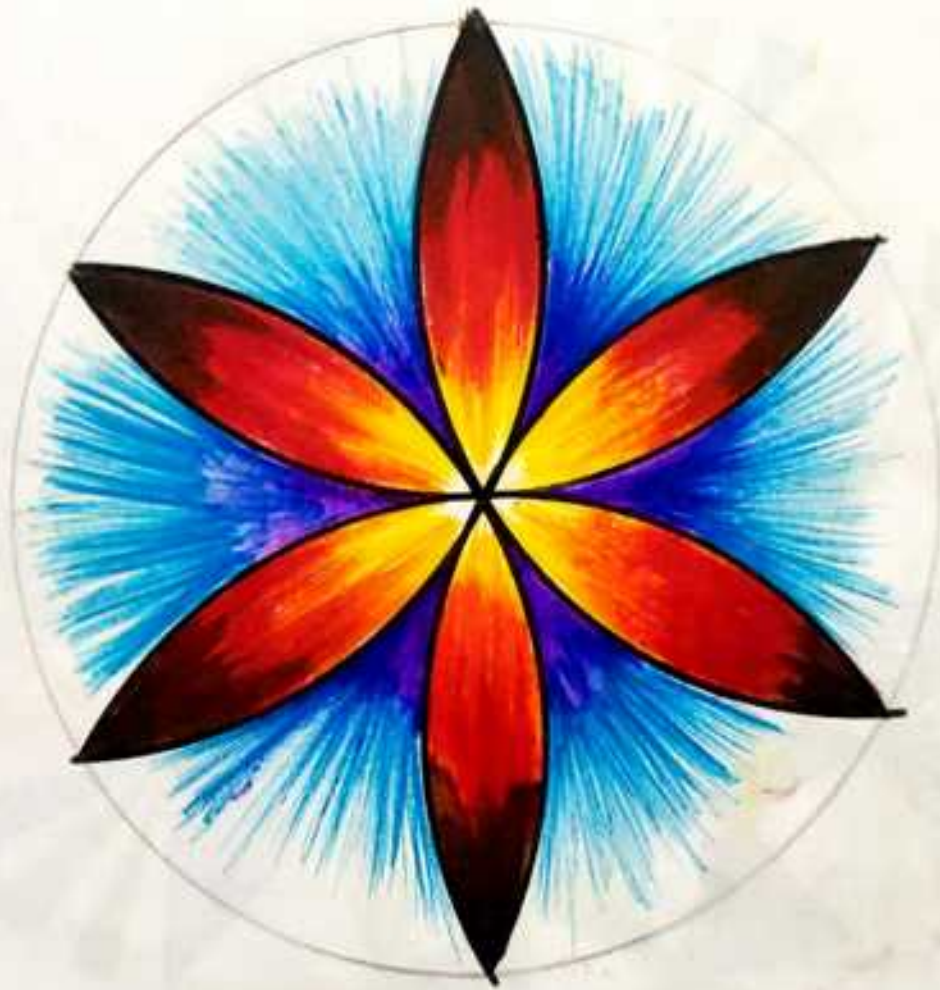
8

6

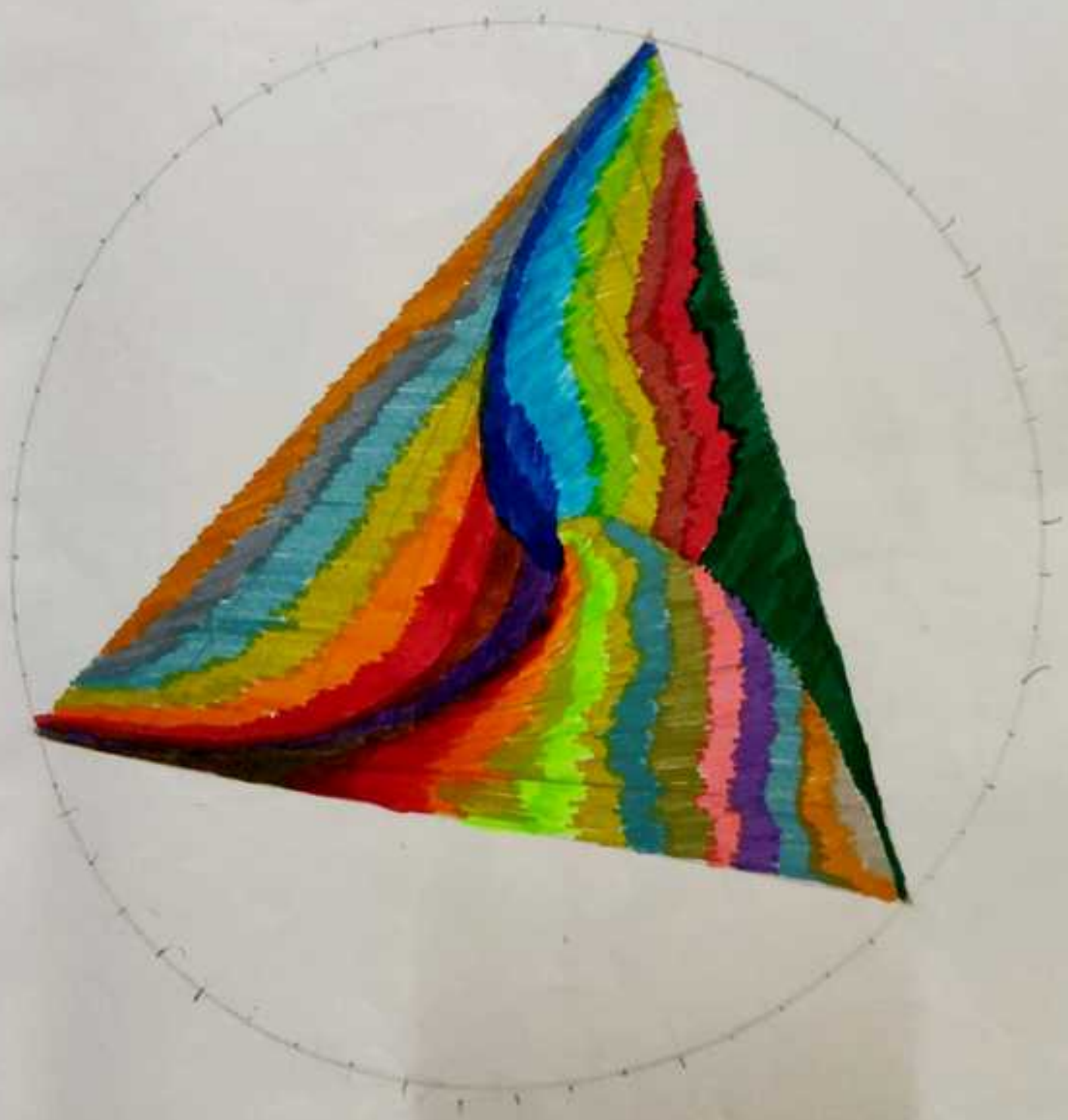
Beauty of Nine

$$\begin{aligned} 9999999 \times 1 &= 9999999 \\ 9999999 \times 2 &= 1999998 \\ 9999999 \times 3 &= 2999997 \\ 9999999 \times 4 &= 3999996 \\ 9999999 \times 5 &= 4999995 \\ 9999999 \times 6 &= 5999994 \\ 9999999 \times 7 &= 6999993 \\ 9999999 \times 8 &= 7999992 \\ 9999999 \times 9 &= 8999991 \end{aligned}$$

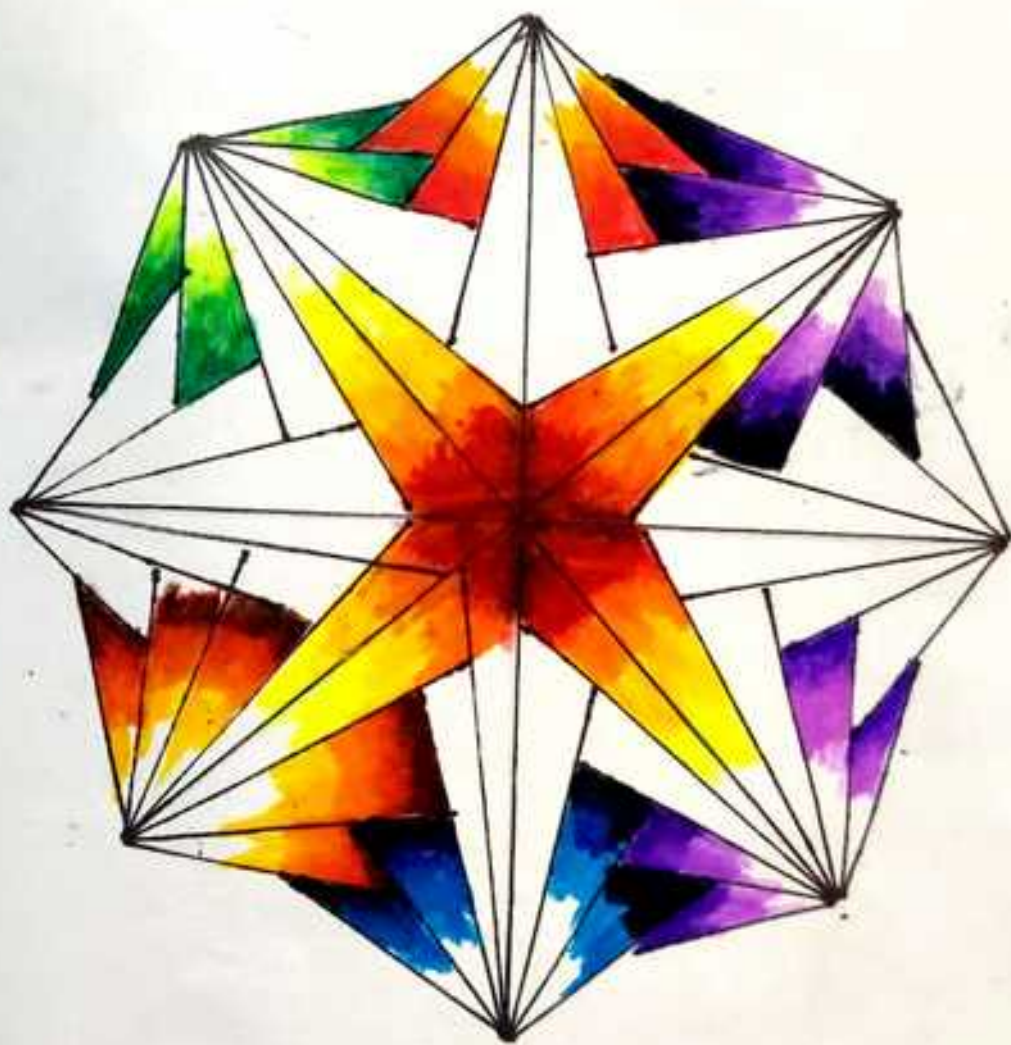
Geometrical
Patterns



Mary K.S









The End.