MAGAZINE

SHRIMATHI DEVKUNVAR NANALAL BHATT
VAISHNAV COLLEGE FOR WOMEN

(Autonomous college affiliated to University of Madras)
Re - accredited with "A" Grade by NAAC
Chromepet, Chennai - 600 044.

MATHEMATICS

2011 – 2012

An equation means nothing to me unless it expresses a thought of God.

- Srinivasa Ramanujam

"Ramanujam discovered so much
And yet left So much for others in
His garden".

- Freman J. Dyson

It is difficult for me
To say what I owe to
Ramanujam – his originality
has been a constant source
Of suggestions to me – his
Death is one of the worst
Blow I have ever had

- Prof. G .H. Hardy

Editorial

This magazine encodes the story of achievements & quest of excellence of the year 2010 -2011.

The pages takes you to the award winning thesis, articles, puzzles etc., related to mathematics.
It presents the achievements of the students in various competitions.

This issue is a product of teamwork.

HISTORY OF THE DEPARTMENT

DEPARTMENT OF MATHEMATICS..,

….A FLIP THROUGH THE PAST..,

Initially started in 1968, as allied paper to support the 'then' - PUC (pre-unversity class). Maths as a major degree was started in 1970, under the dynamic headship of Dr.C.P.Parvathy, Ph.D, who steered the department to dazzling heights in a short span of time. The department proclaims itself to be the only one to offer maximum number of allied courses, for Physics, Chemistry, Computer Science and Statistics simultaneously. Success was proved again subsequently, through the establishment of the degree programme under self financing category in 1991 to cater the extraordinary demand for the course. Emergence of a post graduate programme was initiated and was immediately started in 2004. The department heads changed over through Mrs. Chandra Madhavan and Mrs.Kannamma later. The challenging role of Ms.(late) Kanakavalli and Mrs.Janaki as efficient staff members who played in the upscalling of the department during these period needs special mention here. The department is currently headed by Tmt.Vijaya, and thus the odessy of the department of mathematics still continues awaiting to scale new peaks.

From the desk of Principal

“We are facing three great challenges namely, threat of biological and nuclear warfare, disparity between the rich and poor and environmental distortion which could destroy the human race. So let us dedicate our self to overcome these problems and to ensure that we lead a productive and a disciplined life."

Dr. (Tmt).G. Rani

FROM THE DESK OF
HEAD OF THE DEPARTMENT

Hello and Hi all!

A casual soft talk on the other day during the munch (lunch) interval on coming out with a 'Mag' has now metamorphosed into an actual one. Thanks for the stupendous efforts taken by our 'maths-jama'. The magazine shall accommodate, anything, related or unrelated to maths but stringed subtly to it and will also be a platform to showcase the talents of our budding students. The maiden issue brought, shall be refreshing and can take you to the warm nostalgic past with a gentle breeze. We hope and assure that you'll enjoy our sincere efforts.

Cheers...,

Tmt. R.VIJAYA
Associate Professor

Why are Indians good at mathematics?

It is an accepted fact that Indians are good at Math and it has given them advantage in doing well in India as well as immigrating to US or other developed countries and being successful there. In addition, kids of Indian parents in US outperform American kids in Math and science. Here are some facts about Math and Indians.

Historical Background

India has made significant contributions in the evolution of Mathematics. Aryabhatta, Brhamagupta and Bhaskara II are some of the famous mathematicians from ancient India. Concept of zero and the decimal system came from India. Significant work was done in the field of algebra and trigonometry. There is Vedic Math which teaches various computation techniques through sutras (rules). The growth and development by the mathematicians would have trickled through to the general population, making them interested and adept in computations.

Socioeconomic factors

Another factor is the Indian socioeconomic circumstances. Historically, engineers and doctors were the only professionals who had a prospect of lucrative jobs. Number of seats in colleges for these two streams was limited. In order to get admitted to engineering or medical school, a student has to pass very difficult entrance exam with stress on Math and Science subjects. Only the best of the best can get admission to a reputable college or university. This led parents, students, teachers and the school system to focus on doing well in math and science.

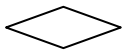
Tmt.T.Vijayalakshmi
Assistant Professor

Kambi kolam – A Mathematical View

Kolam is a form of traditional Indian folk art that is widely used in Southern part of India as customized decoration mainly by women folks. The theory of "Formal Languages" had been applied successfully to study the aspect of generating patterns of the kolam designs. These traditional designs also seem to imbibe mathematical properties such as symmetry, permutation etc...

Kolam, comprised of dots and patterns, is a decorative design drawn near the threshold of a house, prayer halls etc... In the northern parts of India, Rangoli is very popular. Decoration was not the sole purpose of a kolam. It involves good physical and mental exercise. Drawing a kolam keeps a person focused and requires a good deal of concentration. Kolam Practitioners, mostly women, memorize the complicated kolam designs using some syntactic rules. There are different types of kolam patterns in which dots or pullis and lines or curves. Curves that will be more pleasing to the eyes can be generated for getting attractive designs. Motivated by this, several syntactic methods have been found to generate such kolam patterns. If we observe any kambi kolam pattern the following primitive patterns namely Saddles, Drops, Pupil, Diamond and Fans will form the decorative kolam.

Saddles , Drops , Pupil , fans



Diamond

Dr. (Tmt.) S.Hemalatha
Assistant Professor

"Beauty in mathematics is seeing the truth without effort."-George polya

How to Be Good at Mathematics?

I love this question. Most people think that either you're good at mathematics or you're not.....period....end of story. But this is such a defeatist attitude, to say the least. And worse than that, it can be a self-fulfilling prophecy. If you think you aren't good at mathematics (or anything else for that matter), if you've always been told that you're not good at mathematics, if even your parents say that THEY were not good at mathematics, well then what chance do you have? The answer is, none. But I believe that all of this is a fallacy. There are several key elements necessary to be good at mathematics, and these are available to anyone who desires them.

1. You must be interested in mathematics. You must want to be good. If you find that after a while you start to see the beauty in mathematics this is all the better.

2. What many people don't realize is that mathematics does not come easily to anyone - not even to mathematicians. If it did, they would lose their interest in a heartbeat. My absolute favorite quote of all time comes from Albert Einstein - "Do not worry about your difficulties in Mathematics. I can assure you mine are still greater." Anyone who pursues mathematics reaches a point where it becomes difficult. But as they say about physical exercise - "No pain, no gain." The important thing to realize is that just because you don't understand a mathematical concept at first, or don't know how to solve a problem this doesn't mean you are not good at it. Imagine if Einstein had thrown up his hands and said "Oh, I'm just not good at this!" when he ran into his first difficulty!

3. Don't get hung up on thinking that every step you take as you are learning has to make sense to you; that you have to understand what it means, why you are doing it, where it will lead. I picture myself back in high school, loving my math and not caring in the least if I didn't know "why." And sometimes, I even felt like saying "Don't bother me with WHY - just let me do it." I've found that lots of other mathematicians and math teachers say the same thing. But the cool part is that as your knowledge deepens and broadens you probably will find that "why?" begins to become clearer. Sometimes you have to have a larger perspective to be able to step back and see how it all fits together. This comes with time. And don't worry - there'll always be a new "why?" on the

horizon.

4. Don't equate being quick with math to being better at math. Slow doesn't mean "not good”. Being quicker certainly did not make them better.

5. Don't be afraid to "get your hands dirty". Imagine that your car isn't running. You lift up the hood and stand there staring into the engine trying to figure out what's wrong, and wondering how to fix it. Standing and looking will never get it fixed. You have to get in there and check things out, try different things, get your hands dirty - until you find and then fix the problem. Well math is the same way. If someone who is "good at math" sees a problem they are not familiar with it would be very rare that they would see the whole solution laid out in their mind before they even start step one. But they are not afraid to start - anything that seems like it might lead somewhere. Then take the next step and the next step in a similar manner. And if they find that it is not leading anywhere, well then they crumple up the page and start over again trying something different.

6. Step away for a while from a problem that is perplexing you.

So go ahead; try it. Expect some frustration and great gratification once you've solved the problem. Revel in the gratification for a bit and then challenge yourself to begin the process again with a new problem. And try to relax about it and maybe even enjoy it

Tmt.P.VIDHYA
Assistant Professor

Astronomy Calendar In 2020

January: Quadratics Meteor Shower is expected on January 3 & 4.

February: On 15th Partial Solar Eclipse will only be visible in parts of Chile, Argentina and Antarctica.

March: On 31st 2018 there will be a blue moon.

April: On 21 and 22 Lyrids Meteor Shower will happen.

May: Eta Aquarids Meteor Shower will happen.

June: Penumbral Lunar Eclipse will be visible throughout most of Europe, Africa, Asia, Australia and the Indian Ocean on 5th .

July: Penumbral Lunar Eclipse will be visible throughout most of North America, South America, the eastern Pacific Ocean, the western Atlantic Ocean and extreme western Africa on 5th.

August: Perseids Meteor Shower will happen on 12 and 13.

September: On 11th Neptune at Opposition where the blue planet will be at its closest approach

October: On 21st and 22nd the Orionids Meteor Shower will happen

November: 30th Penumbral Lunar Eclipse will be visible throughout most of North America, the Pacific Ocean, and North Eastern Asia including Japan.

December: On 14th a Total Solar Eclipse. The path of totality will only be visible in parts of southern Chile and southern Argentina. A partial eclipse will be visible in most parts of southern South America, the South Eastern Pacific Ocean and the southern Atlantic Ocean.

Tmt. N.ANBARASI
Assistant Professor

ASSOCIATION REPORT
2010 - 2011

"Unity" this five lettered mantra is the essence of success of our association under the able guidance of our former principal Dr.T.Sumitra, the president of the union.

The Mathematics Association for the academic year 2010-2011 was conducted on 15th December 2010.

The Mathematics association conducted various inter-collegiate competitions and we got an overwhelming response from various colleges. Students from various colleges took active participation.

With the blessings of almighty, our association activity ended with success and great enthusiasm.

STUDENTS ACHIEVEMENTS
2010 - 2011

- Srinivasa Ramanujam Academy conducted "Thesis Writing Competition". Our college students M. Priyanka, S.Vinaya, R.Sahana and M.Jothi have won the prestigious "Srinivasa Ramanujam Award" among several participants from various colleges under the topic – "Mathematical aspects of the theory of relativity" & "Mathematical Induction in its several branches".

- V.Rohini have won the prestigious "Srinivasa Ramanujam Award" in the IQ Test conducted by Srinivasa Ramanujam Academy

- M.Priyanka,M.Shanthi,V.Rohini,M.Janani have participated in the 5-day "Appreciation Course In Mathematics" (ACM 2010)" during September 20th -24th,2010 held at Institute of Mathematical Sciences (IMSC), Taramani Chennai. Also excelled in the innovative mathematics contest & have won a Merit certificate.

- Among 800 applicants, 48 students were selected from all over colleges in Tamil Nadu .Our college students S.Vinaya, R.Sahana & M.Vanishree have been selected among them and attended an "Advanced Training Camp in Mathematics" (ATCM) during December 17th – 31st , 2010 which was sponsored by National Board of Higher Mathematics (NBHM), held at SSN college of Engineering, Chennai.

Prizes won by our students in Inter-Collegiate Competitions during 2010 -2011

S.NO	COLLEGE	EVENTS	ACHIEVERS		PLACE
			DEPT	ACHIEVERS	
1	MOP VAISHNAVCOLLEGE FOR WOMEN	FUSE THE MATH	II MATHS	S .REVATHY S.VINAYA R.SAHANA	I
2	GSS JAIN COLLEGE FOR WOMEN	MATH CHARADES	III MATHS	M.PAVITHRA B.BHAVANI	I
				M.SHANTHI M.PRIYANKA	II
	(Bagged over all rolling shield)	TECHNO MATH	III MATHS		II
		STREET PLAY/MIME	II MATHS	S .REVATHY S.VINAYA R.SAHANA B.VAISHNAVI SANTHOSH S.KIRUTHIKA	
3	STELLA MARIS COLLEGE	PROPOUND THE BEST	III MATHS	M.PRIYANKA	III

4	MADRAS CHRISTIAN COLLEGE	PAPER PRESENTATION	III MATHS	K.PARITHA	II
5	LOYOLA COLLEGE	COLLAGE MATH FUN	III MATHS III MATHS	M.SHANTHI M.PRIYANKA V.ROHINI M.PAVITHRA B.BHAVANI R.ISHWARYA	II II
6	ANNA ADARSH COLLEGE FOR WOMEN	BRIGANTINO ADZAP	III MATHS II MATHS	M.SHANTHI M.PRIYANKA V.ROHINI S .REVATHY S.VINAYA R.SAHANA S.KIRUTHIKA	I II
7	DR. MGR JANAKI COLLEGE FOR WOMEN	MATHEMATICAL MODELLING	III MATHS	M.SHANTHI M.PRIYANKA	III
8	QUEEN MARY'S COLLEGE FOR WOMEN	MATH CREATIVE SINGING PAPER PRESENTATION	II MATHS II MATHS	S .REVATHY S.VINAYA R.SAHANA S .REVATHY	I III

A brief report on Mathematics Talent & Training Search (MTTS) Programme

The 19th Mathematics Talent & Training Search Programme this year was conducted at three venues, Indian Institute of Chemical Technology (ICT) Mumbai, Visva Bharati University Santiniketan and M.S University Baroda. The selection process for this camp was based on the marks scored on previous stages in school and college and opinion about the student by the Head of the Department.

Out of 8,000 applicants all over the nation, I was selected for level 1 for which I applied at ICT, Mumbai. We were nearly 130 students including all three levels (level 0, 1 & 2). The camp was simulating, inspiring and challenging. The main aim of the camp was to do Mathematics on our own.

We attended the camp for 4 weeks. The camp was a little pressurizing at the beginning. But with the co-operation of the professors from various Central Universities it helped us to enjoy the essence of the camp. The classes were on the topics Linear Algebra, Topology, Algebra and Analysis, which were not regular class room sessions but highly interactive and we were provided platform to think along with teachers. It gave me opportunity to know how different students of my level had their approach not only in Mathematics but in decision making. We had group discussions regularly and seminars from end of the 2nd week.

The camp was actually an exposure to Mathematics conceptually, it made the students to realize getting solutions to problem alone does not complete the subject but it's beyond that. The faculties were pillars for this camp.Mr.S.Kumaresan, Dept of Mathematics & Statistics; University of Hyderabad is director of the Programme. The other tutors were from IITs and various colleges all over India. The camp was a golden opportunity to interact with such amazing resource persons who made me to know where I personally stand in the subject and my attitude towards Mathematics.

On the whole the camp was not just a camp for learning Mathematics but residing with participants and professors from various parts of the country for a month was a great experience, it helped me to develop a habit of observing good practices and learn from others. MTTS Programme develops not only an individual creativity in Mathematics but also personality!

S.VINAYA
III MATHS

AWARD WINNING THESIS

Abstracts

- **MATHEMATICAL ASPECTS OF THE THEORY OF RELATIVITY:**

In this thesis I have found about special theory of relativity and general theory of relativity in Einstein field equations, Mathematical techniques for analyzing space times, Frame fields, Symmetry vector fields, Cauchy problem in general relativity, Spinor formalism, Regge calculus and numerical relativity in Mathematical aspects and proved them in some experiments and fields.

T.PRIYANKA
2008 – 2011 BATCH

- **MATHEMATICAL INDUCTION IN ITS SEVERAL BRANCHES:**

Reasoning or drawing conclusions can be classified into two forms namely inductive reasoning and Deductive reasoning. When a person makes observation or experiments and on their basis reaches conclusions, he is said to reason inductively.

It is usually inductive reasoning that mathematical results are discovered. MATHEMATICAL INDUCTION is a key factor for proving theorems in its various branches. Without this concept technological development is a big challenge.

INDUCTION INVERSE:

You want to prove a theorem then
To prove it for every integer n
You prove it first for n equal one
And then the induction is begun
The proof goes on in the following way
You assume it next for n equal k
If you can show it then for k+1
Then the induction is truly done.

Mathematical Induction is applied in several branches of mathematics such as Graph Theory, Real Analysis and Modern Algebra etc. It is also used in some daily applications such as in ATM machines etc. In computer science it is used in proving component of the verification system EVES. (The language of EVES is called Verdi).

R.SAHANA
III MATHS

- **MATHEMATICAL ASPECTS OF THE THEORY OF RELATIVITY:**

Mathematics, the core subject of all fields plays a vital role as complement of Physics. Mathematics as Mechanics gives a good base for relativity. Relativity, in simple words gives dimension of the object which is constant by comparison with the object in motion. Relativity is classified as (i) general theory of relativity and (ii) special theory of relativity.

In Newtonian mechanics, mass, time, length and space were treated absolute. It is regarded that space existed without any reference to objects. Space was considered absolute and at rest. In the wave theory of light, it is assumed that medium called ether exists in space and pervaded all space in the universe. But as per Michelson and Morley experiment, the concept of ether and absolute space becomes meaningless. In Einstein's view, there is no absolute space and all motions are relative. The time, mass, length and space are interdependent and are not absolute.

By general theory of relativity, the geometrical form of an object remains the same irrespective of the changes in position or state of motion of the object or observer, the time interval between two events has the same value for all observers irrespective of their motion and if two events are simultaneous for an observer, they are simultaneous for all observers, irrespective of their position or motion. This means simultaneity is absolute, also the mass of the body is absolute and constant and independent of the motion of the body.

Einstein, in 1905, profounded the special theory of relativity. The special theory of relativity deals with objects and systems, which is either moving at a constant speed with respect to one another or at rest. It is a direct outcome of new realizations of the nature of mass, length and time. The two fundamental postulates of the special theory of relativity are:

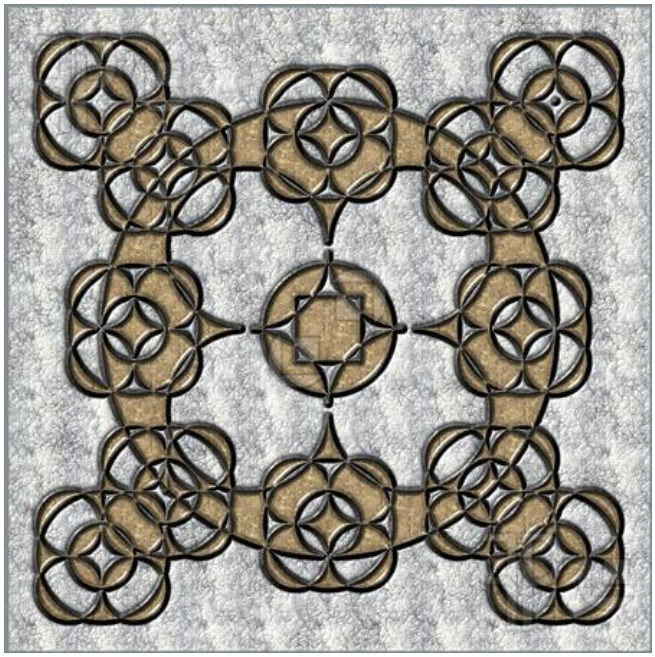
(i) The laws of Physics are the same in all inertial frames of references.

(ii) The velocity of light in free space is a constant in all the frames of reference. Some consequences of special theory of relativity are length

contraction, time dilation and variation of mass with velocity. A circular object will appear as an ellipse for a fast moving observer is an example of length contraction. Time dilation can be quoted with example, the clock in the moving space ships will appear to go slower that the clocks on the earth. Einstein's special theory of relativity gave rise to mass-energy equivalence $E=mc^2$.There are some Mathematical techniques dealing with relativity such as, Cauchy problem. Cauchy problem is an attempt to find a solution to a differential equation given initial conditions. In context of general relativity, it means the problem of finding solutions to Einstein's field equations-a system of hyperbolic partial differential equations-given some initial data on a hypersurface.The Cauchy problem allows one to formulate the concept of causality in general relativity, as well as 'parameterising' solutions of the field equations. And Numerical relativity is the sub-field of general relativity which seeks to solve Einstein's equation through the use of numerical methods. Thus Mathematical aspect of the theory of relativity is evident.

S.VINAYA
III MATHS

MATHEMATICAL IMAGE OF A TILE



STUDENT'S ZONE

World of Math's Archimedes

Introduction:

Archimedes is one of the greatest mathematicians of the ancient world. He was born in 287 B.C in the port of Syracuse, Sicily. He lived for 75 years. He died during the second panic war. He had proved that the surface area of a sphere is 4 times that of a circle, the volume of a sphere is two thirds the volume of a circumscribe cylinder and the surface are of a sphere is two thirds the surface area of a circumscribed cylinder including its bases.

Contributions:

Archimedes applied the method of exhaustion which was an early form of integration and found many results for finding areas, volumes and surface areas of many shapes. He devised ways to approximate the slope of the tangent lines of various curves. Archimedes approximation of π was the most accurate of his time. He also devised a way to approximate square roots and defined an ingenious system for expressing very large numbers.

Works

Only some of the works of Archimedes have survived.

Quadrature of the Parabola:

This has 24 propositions in which Archimedes proves by two methods that the area enclosed by a Parabola and a straight line is 4/3 times the area of a triangle with equal base and height.

Measurement of a circle:

Archimedes shows the exact value of π lies between $3\frac{10}{71}$ and $3\frac{1}{7}$.

He obtained this by circumscribing and inscribing a circle with regular polygons having 96 sides

The 11 Times Trick:

We all know the trick when Multiplying by ten add 0 to the end of the number, but did you know there is equally easy trick for multiplying a 2 digit number by 11 this is it
Take the original number and imagine a space between the 2 digits

(52×11) 52 ➔ 5-2

Now add the 2 number and put them in the middle

5-(5+2)-2 ➔ 5-7-2 ➔ 572

If the Number in the middle add up to 2 digit number, just insert the 2nd number and add 1 to the first (99×11) 99

9-(9+9)-9 ➔ (9+1)-8-9 ➔ 10-8-9

1089 ➔ It works every time

Quick Square

If you need to square a 2 digit number ending in %, you can do so very easily with this trick. Multiply the first digit by itself +1 and put 25 on the end that is all.

25^2 = (2× (2+1)) & 25
2×3 = 6
625

P.S. JAITHUN NISHA
I MATHS◊

THE NUMBER $9^{9^{9}}$ IS CONSIDERED A VERY INTERESTING NUMBER. WHY?

Ninth power of the ninth of nine is the largest in the world of numbers that can be expressed with just 3 digits. No one has been able to compute this yet. The very task is staggering to the mind.
The answer to this number will contain 369 million digits. And to read it normally it would take more than a year. To write down the answer, you would require 1164 miles of paper.

HOW WOULD YOU NAME A SIXTYONE DIGITS NUMBER SUCH AS THIS?
7, 346, 648, 004, 560, 986, 215, 348, 444, 286, 445, 305, 146, 039, 140, 046, 960, 678, 582, 256, 003?

SEVEN VIGINTILLION ,THREE HUNDRED FORTY SIX NOVEMDECILLION SIX HUNDRED FORTY EIGHT OCTODECILLION, FOUR SEPTENDECILLION, FIVE HUNDRED SIXTY SEXDECILLION , NINE HUNDRED EIGHTYSIX QUINDECILLION,TWO HUNDRED FIFTEEN QUATTOUR DECILLION ,THREE HUNDRED FORTY EIGHT DUODECILLION,FOUR HUNDRED FORTY FOUR UNDECILLION, TWO HUNDRED EIGHTY SIX DECILLION, FOUR HUNDRED FORTY FIVE MONILLION,THREE HUNDRED AND FIVE OCTILLION, ONE HUNDRED FORTY SIX SEPTILLION,THIRTY NINE SEXTILLION,ONE HUNDRED FORTY QUINTILLION,FORTY SIX QUARDRILLION,NINE HUNDRED SIXTY TRILLION, SIX HUNDRED SEVENTY EIGHT BILLION, FIVE HUNDRED EIGHTY TWO MILLION,TWO HUNDRED FIFTY SIX THOUSAND AND THREE.

B.VAISHNAVISANTHOSH
III MATHS◊

NEWTONS METHOD FOR CALCULATING A SQUARE ROOT

This method involves a bit of multiplying and dividing but it will arrive at the precise square root over time and trials.
Step 1: Let X be the number of which you wish to find the square root. Let G be your best guess at each trials.
Step2: To find the next G, call it G ', your set G' is equal to
G'=(X+G^2) / 2G
Step 3: This G' becomes your next G, iterate (i.e.,) repeat the calculation over and over (as shown below) and you will eventually arrive at square root you seek.
G"= (X+G'^2) / 2G'
G"'= (X+G"^2) / 2G"

G.GAYATRI
III MATHS◊

MATHEMATICS REFERS TO:

M - MASTREY OF BRAIN,

A - ALBUM OF FORMULA,

T - THICKNESS OF KNOWLEDGE,

H - HOIST FOR THINKING,

E - EVALUATION OF BRAIN,

M - MAGIC WITH NUMBERS,

A - ARTS OF SOLVING,

T - TALENT OF PERSON,

I - INSPIRATION FOR SOLVING PUZZLE,

C - CREATIVITY,

S - SUCCESS IS SURE

R.VALARMATHI
I MATHS◊

MATHEMATICS IN DAILY LIFE

ADD	HAPPINESS & KINDNESS
SUBTRACT	JEALOUSY & CRUELTY
MULTIPLY	HAPPINESS
DIVIDE	SADNESS
DIFFERENTIATE	PROBLEMS
INTEGRATE	GOOD DEEDS
RAISING POWER	PERSONALITY
MAXIMIZE FUNCTION	KNOWLEDGE
MINIMIZE FUNCTION	ANGER

FINITE	AGE
INFINITE	FAME
ANALYSE	IMAGINATION
INCREASING FUNCTION	QUALIFICATION
VARIABLES	SURROUNDING

P.KALYANI
I MATHS ◊

MATHEMATICS IN NATURE

INTRODUCTION

We invent mathematics just as we invent language and theories. What we discover is how mathematics works in the real world .We invent concept and symbols we discover real world phenomena.

Theoretical physics is mathematics and invention.
Experimental physics is observation and discovery.

Let us assume a special animal evolves which can make a symbolic model of these modeling processes. The animal calls this process mathematics

FIBONACCI SEQUENCE

Rabbits, rabbits, rabbits. Leonardo Fibonacci was a well-traveled Italian who introduced the concept of zero and the Hindu-Arabic numeral system to European in 1200AD. He also described the Fibonacci sequence of numbers using an idealized breeding population of rabbits. Each pair produces another pair every month, taking one month first to mature, and giving the sequence 0, 1, 1, 2, 3, 5, 8, 13… Each number in the sequence is the sum of the previous two

GOLDEN RATIO (PHI)

The ratio of consecutive numbers in the Fibonacci sequence approaches a number known as the golden ratio, or phi (=1.618033989…). The aesthetically appealing ratio is found in much human architecture and plant life. A Golden Spiral formed in a manner similar to the Fibonacci spiral can be found by tracing their seeds of a sunflower from the centre outwards

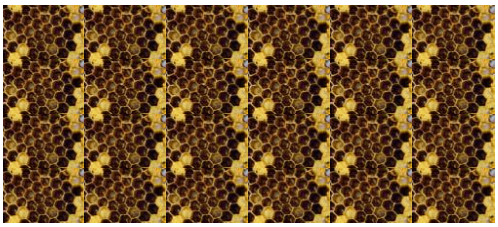
π

Any circle, even the disc of the Sun as viewed from Cappadoccia, central Turkey during the 2006 total eclipse, hold that perfect relationship where the circumference divided by the diameter equals π. First devised (inaccurately) by the Egyptians and Babylonians, the infinite decimal place of π (approximately 3.1415926….) have been calculated to billions of decimal places.

SHAPES – POLYHEDRA

For a beehive, close packing is important to maximize the use of space. Hexagons fit most closely together without any gaps; so hexagonal wax cells are what bees create to store their eggs and larvae. Hexagons are six-sided

polygons, closed, 2-dimensional, many-sided figures with straight edges



SYMMETRY

Five axes of symmetry are traced on the petals of this flower, from each dark purple line on the

petal to an imaginary line bisecting the angle between the opposing purple lines. The lines also trace the shapes of a star.

SYMMETRY

Many mathematical principles are based on ideals, and apply to an abstract, perfect world. This perfect world of mathematics is reflected in the imperfect physical world, such as in the approximated symmetry of a face divided by an axis along the nose. More symmetrical faces are generally regarded as more aesthetically pleasing.

In this world, we see each nook and corner the word maths, without math's we cannot be stands here. The world created by some of calculation and the world may be also destroyed by some calculation only. Before we had born, the math's born in this world, not only in this world, in the whole universe also. Each and every move we are with the math's, even a micro organism has a calculation for is next seconds. **Nothing is wrong to say MATHEMATICS is a "QUEEN OF SCIENCE" and "KING OF ART"**

A.SIVANITHYA
II MATHS◊

BRAIN CRACKERS:

Five men crash - land their airplane on a deserted island in the South Pacific. On their first day they gather as many coconuts as they can find into one big pile. They decided that, since it is getting dark, they will wait until the next day to divide the coconuts.

That night each man took a turn watching for rescue searchers while the others slept. The first watcher got bored so he decided to divide the coconuts into five equal piles. When he did this, he found he had one remaining coconut. He gave this coconut to a monkey, which took one of the piles, and hid it for himself. Then he jumbled up the four other piles into one big pile again.

To cut a long story short, each of the five men ended up doing exactly the same thing. They each divided the coconuts into five equal piles and had one extra coconut left over, which they gave to the monkey. They each took one of the five piles and hid those coconuts. They each came back and jumbled up the remaining four piles into one big pile.

What is the smallest number of coconuts there could have been in the original pile? (For answer refer page no. 35)

SHULAMETHY
I MATHS◊

MATHS TEASERS

Assume any number between 2 and 10

Multiply that number by 9

Add that arriving answer within itself

Subtract the number by 5

Now your answer will be "4"

T .PRIYANKA
I MATHS◊

When the multiplicands and multiply 97 by 96?

1) Put the two numbers 97 and 96 above and below on the left hand side.

2) Subtract each of them from the base 100 and write down the remainders 3 and 4 on the right side with minus (-) sign before them.

3) The product will have two parts, one on the left side and one on the right side. A vertical dividing liner may be drawn for the purpose of demarcation of the parts.

4) Cross-subtract deficiency 4 in the second row from the original number 97 in the first row (97-94=93)or cross-subtract in the converse way i.e.(3 from 96) and we get (96-3=93) the same. This is our left hand side portion of the required

G.SANGEETHA
III MATHS◊

MATHEMATICS IN LIFE

I am enclosed in the bracket of discipline.
And my life packed in a square of society.
My mind is a circle "the revolving city".
My brain is a triangle of work shop.

These polygonal years are just a shop
My age is an elongating rectangle.
My happiness is always divided by some sorrow.
There are many things that I have to add and borrow.

I have to subtract my ill wills.
My character is a cylinder through which you can see.
I try to multiply my happiness by helping others.
My life is a straight line which will stop at some point.

It is a parabola getting me to peak and back to success.
My hopes are flat to be molded anyway.
I want my personality to be a tough cube.
May leads are arrow headed towards success.

How am I,
That you have to guess

R.TAMILKODI
I MATHS◊

POEM

Life is ''sin-90''

That is ''one''

Love is ''cos-90''

That is ''zero''

But our 'friendship ' is ''tan-90''

That is ''INFINITE''.....

SHANMUGA SELVI
I MATHS◊

Interesting facts about maths

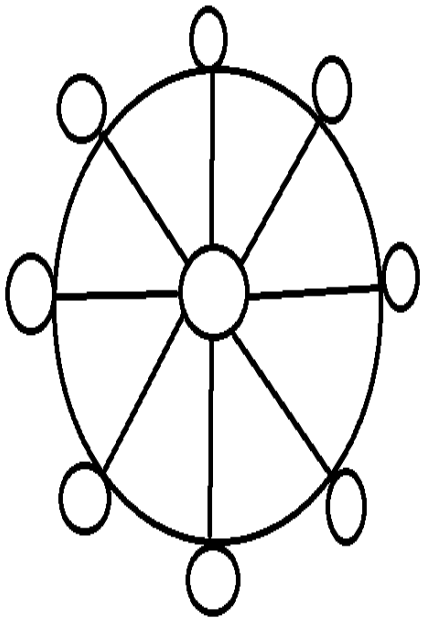
- The Five Most Important Numbers in Mathematics in One Equation : **e^i*pi + 1 = 0**
- A googol is the name for the number 10^{100}, or 1 followed by 100 zeroes

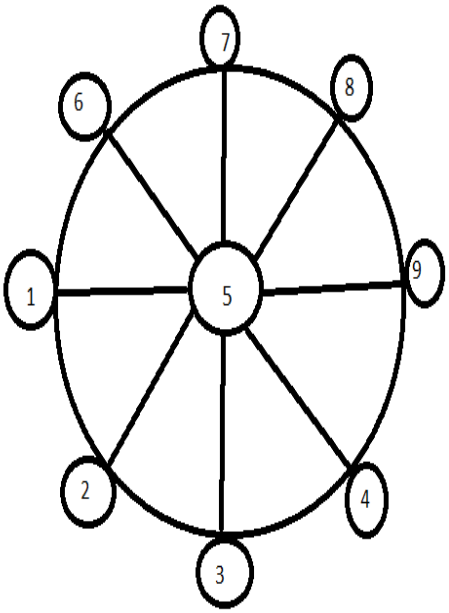
FUN WITH MATHS

NUMBER WHEEL

Here is a number wheel. Can you arrange the numbers 1 to 9 in such a way as to have one of them in the centre and rest at the ends of the diameters?

The sum of the three numbers on each diameter should be 15.





S.KIRUBHAKARI
II MATHS◊

A MATHEMATICAL INVITATION

Mr. & Mrs. Algebra

Welcomes you for Wedding of their son

Differentiation

With

Integration

(D/O.Mr. & Mrs. Calculus)

Place: Matrix Hall

5, parallel line st,

Square Root Tower,

Permutation Nagar,

(Near Polynomial Hospital).

With Best Compliments From,

Mr. & Mrs. Vectors, Mr. & Mrs. Theorem,

Bus Route: tan6 ɵ, cos18ɵ, sec45ɵ, cot3 ɵ, sin9 ɵ …

R.SAHANA

III - MATHS

A TRIBUTE TO MATHEMATICS

Hey Math!!

You are beautiful than seven wonders

You are higher than the Himalayas

You are wider than the Niagara

You are richer than the richest!!

Hey Math!!

Many wise men in this universe

Like Lagrange, Laplace & McLaren

Pythagoras, Archimedes & so on

Made the discovery of yours!!

Hey Math!!

Yours contents really tempted me!

Your concepts really amazed me!

Your applications really wondered me!

Your knowledge showcases the bravery in me!!

Hey Math!!

Your child is the Marvelous Matrix

Who teach us the easy tricks..

Your ward is the Valuable Vector

Who is the basic for the mesmerizing mechanics..

Hey Math!!

Your student is the Coordinate Geometry

Whose equations achieved a great victory..

Your beloved is the Twinkling Trigonometry

Who measures the gigantic invisible triangular mystery..

Hey Math!!

Your Prodigy is the Classic Calculus

Who links the universal space and sciences..

Your pet is the Stunning Statistics

Who says the possibilities with probabilities..

Hey Math!!

You are omnipresent like thee!

Your contribution is infinity!

You are a fun for the children!

You are fame for the legends!

You are a riddle for the youth!

You are as pride for the world!

You made and make wonders! And only

You make me Love you!!!

BY

S. REVATHY

III B. Sc MATHEMATICS

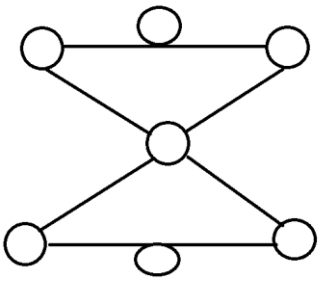
FUN WITH NUMBERS

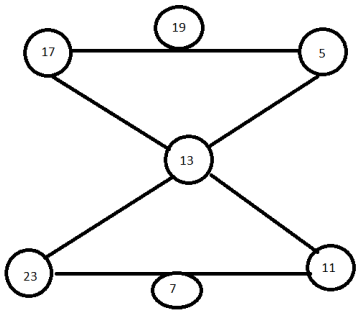
1 × 9 = 9	**1 × 99 = 99**	**1 × 99 = 999**
2 × 9 = 18	**2 × 99 = 198**	**2 × 99 = 1998**
3 × 9 = 27	**3 × 99 = 297**	**3 × 99 = 2997**
4 × 9 = 36	**4 × 99 = 396**	**4 × 99 = 3996**
5 × 9 = 45	**5 × 99 = 495**	**5 × 99 = 4995**
6 × 9 = 54	**6 × 99 = 594**	**6 × 99 = 5994**
7 × 9 = 63	**7 × 99 = 693**	**7 × 99 = 6993**
8 × 9 = 72	**8 × 99 = 792**	**8 × 99 = 7992**
9 × 9 = 81	**9 × 99 = 891**	**9 × 99 = 8991**

See the sum of product gives 9.

M.MAHALAKSHMI
I MATHS◊

A PRIME NUMBER GAME:





Here are 7 prime numbers: 5, 7, 11, and 13,17,19,23. Can you arrange these prime numbers in the 7 circles so that the rows and diagonals add up to the same prime number?

R. ABIRAMI
II MATHS◊

MATHEMATICS G.K.

1) What mathematical symbol did math whiz Ferdinand von Lindemann determine to be a transcendental number in 18252?

Ans: Pi

2) What do you call an angle more than 90 degrees and less then 180 degrees?

Ans: Obtuse

3) What Greek math whiz noticed that the morning star and evening star were one and the same in 530 B.C.?

Ans: Pythagoras

4) What's a flat image that can be displayed in three dimensions?

Ans: Hologram.

5) What digit did Arab mathematician al-Khwarizmi give to the west around 800 B/B?

Ans: Zero

6) How many equal sides does an icosahedron’s have?

Ans: Twenty

7) What do mathematicians call a regular polygon with eight sides?

Ans: An octagon

8) What century did mathematicians first use plus and minus signs?

Ans: The sixteenth

R.KALAIVANI
I MATHS◊

LOGIC THINKING

1) What weighs more - a pound of iron or a pound of feathers?

Answer: Both would weigh the same – come on, a pound remains a pound, irrespective of the object!

2) How many eggs can you put in an empty basket?
Answer: Only one egg, because after that the basket doesn't remain empty any more

3) If you take 3 apples from a group of 5, how many do you have?
Answer: Three - you just took them yourself!

4) How many 9s are there between 1 and 100?
Answer: Twenty 9s

5) I am an odd number; take away an alphabet and I become even. What number am i?
Answer: 7 (SEVEN-S=EVEN)

6) So you think you're good at math? Complete the sequence: 1=3, 2=3, 3=5, 4=4, 5=4, 6=3, 7=5, 8=5, 9=4, 10=3, 11=?, 12=?
Answer: 6. that is the number of letters in the spelling of each number!

7) 27 ducks are marching to the pond. 5 lose their way, 13 return and 9 of them make it to the pond. What happens to the rest of them?
Answer: None are remaining!(27-5= 22, 22-13= 9, 9-9=0!!!)

8) Arun had twelve ear buds in front of him. He took one away. Now he had nine in front of him. How is this possible?
Answer: The remaining buds were arranged to form the figure of 9!! How else??

K.ASHWINI
III MATHS◊

Answer brain cracker:

Let the original pile have n coconuts. Let a be the number of coconuts in each of the five piles made by the first man, b the number of coconuts in each of the five piles made by the second man, and so on.

Writing a Diophantine equation to represent the actions of each man, we have

$n = 5a + 1 \quad n + 4 = 5(a + 1)$

$4a = 5b + 1 \quad 4(a + 1) = 5(b + 1)$

$4b = 5c + 1 \quad 4(b + 1) = 5(c + 1)$

$4c = 5d + 1 \quad 4(c + 1) = 5(d + 1)$

$4d = 5e + 1 \quad 4(d + 1) = 5(e + 1)$

Hence $n + 4 = 5 \times (5/4)4\ (e + 1)$, and so $n = (55/44)\ (e + 1) - 4$.

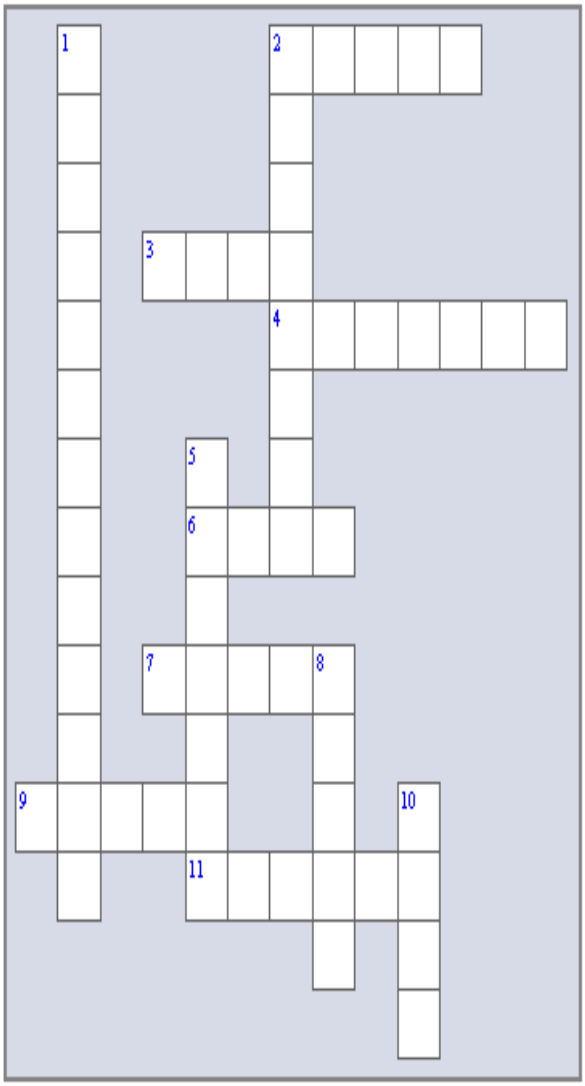
Note that, since 5 and 4 are relatively prime, $55/44 = 3125/256$ is a fraction in its lowest terms. Hence the only integer solutions of the above equation are where $e + 1$ is a multiple of 44, whereupon $d + 1$, $c + 1$, $b + 1$, and $a + 1$ are all integers.

So the general solution is $n = 3125r - 4$, where r is a positive integer, giving a smallest solution of 3121 coconuts in the original pile.

Maths Crossword

A Maths Starter of The Day

Maths Crossword 1



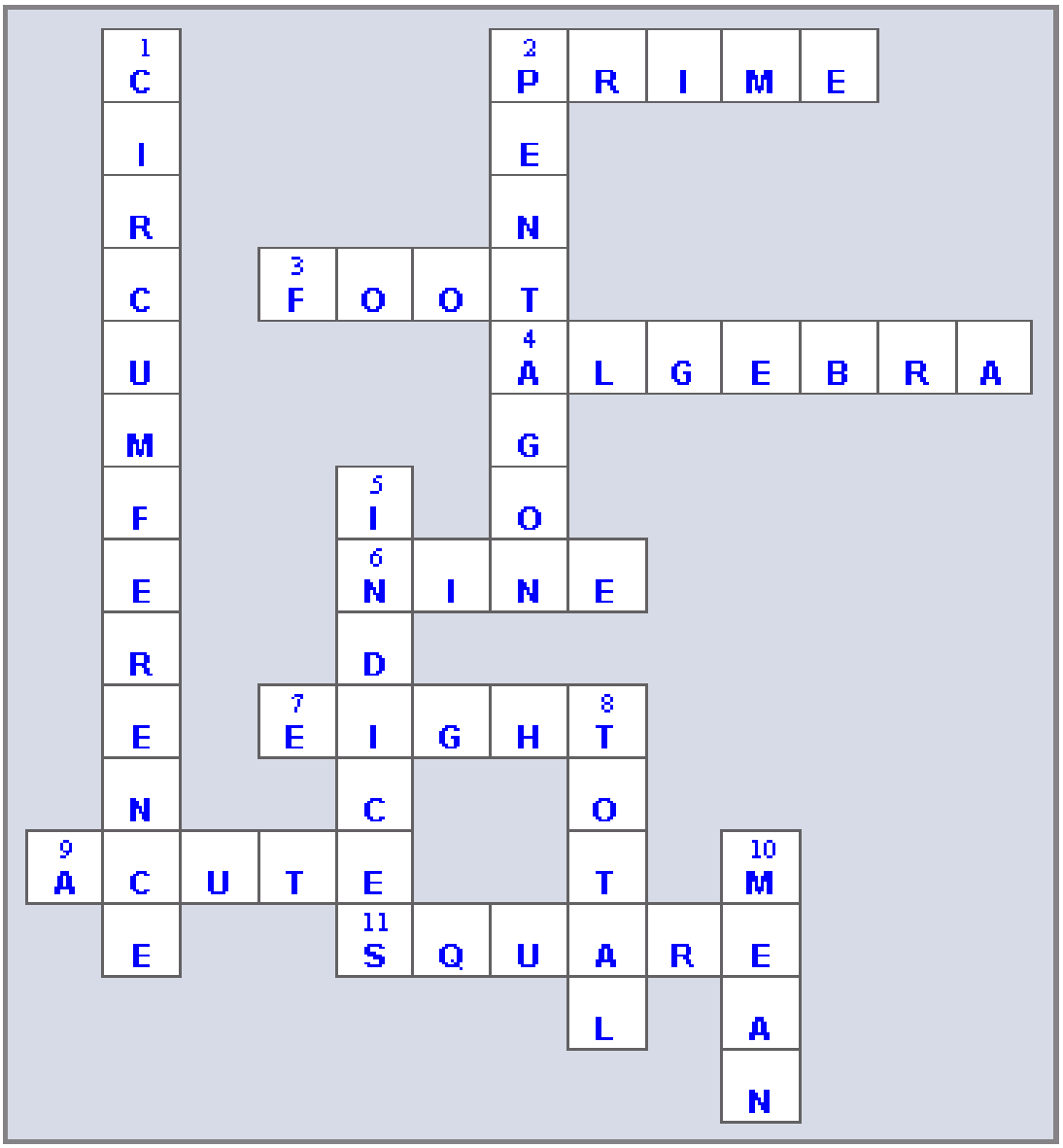
Across

2. This type of number is the most important to factor.
3. Twelve inches.
4. Letters representing numbers.
6. Three squared.
7. Nothing with a belt.
9. An angle less than right.
11. A regular polygon with interior and exterior angles equal.

Down

1. An all round perimeter.
2. An American government polygon.
5. Powerful numbers found in fishy places.
8. This sum is mixed up alott.
10. A selfish average.

Answers



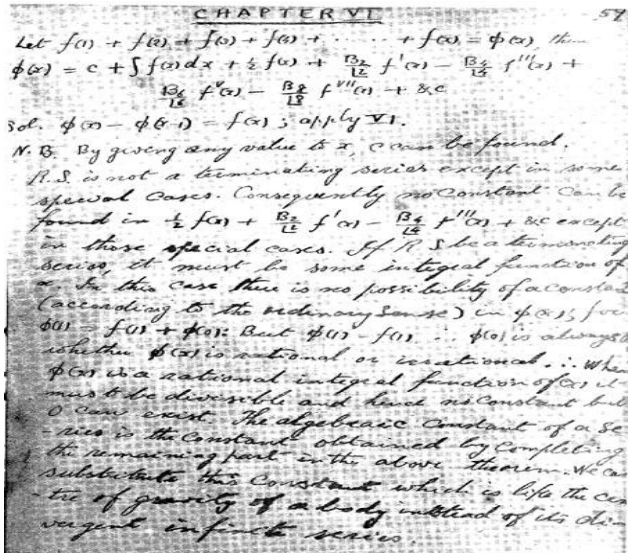
A.YASMINE NILOFER
II MATHS◊

Tribute to Ramanujan by Richard Askey

Richard Askey paid his tribute to Ramanujan in a very different way. He, requested Paul Garlund, sculptor, USA to prepare a bronze bust of Ramanujan. The seven busts commissioned are at: Mrs. Ramanujan's residence, Madras; Raman Research Institute, Bangalore; Department of Defense, Government of India, New Delhi; Tata Institute of Fundamental Research, Bombay; Trinity College, Cambridge; Askeys, Madison (Wisconsin) USA; and Chandrasekhar's, Chicago, USA.

Indian Government's Honor to Ramanujan

From Srinivasa Ramanujan's Notebook


CHAPTER VI

Let $f(x) + f(x) + f(x) + f(x) + \dots + f(x) = \phi(x)$ then

$$\phi(x) = c + \int f(x)\,dx + \tfrac{1}{2} f(x) + \frac{B_2}{\lfloor 2} f'(x) - \frac{B_4}{\lfloor 4} f'''(x) + \frac{B_6}{\lfloor 6} f^{v}(x) - \frac{B_8}{\lfloor 8} f^{vii}(x) + \&c$$

Sol. $\phi(x) - \phi(x-1) = f(x)$; apply VI.

N.B. By giving any value to x, c can be found.

R.S. is not a terminating series except in some special cases. Consequently no constant can be found in $\tfrac{1}{2} f(x) + \frac{B_2}{\lfloor 2} f'(x) - \frac{B_4}{\lfloor 4} f'''(x) + \&c$ except in those special cases. If R.S. be a terminating series it must be some integral function of x. In this case there is no possibility of a constant (according to the ordinary sense) in $\phi(x)$; for $\phi(x) = f(x) + \phi(x)$. But $\phi(x) = f(x)$ $\therefore$ $\phi(x)$ is always [illegible] whether $\phi(x)$ is rational or irrational. $\therefore$ When $\phi(x)$ is a rational integral function of (x) it must be divisible and hence no constant but 0 can exist. The algebraic constant of a series is the constant obtained by completing the remaining part in the above theorem. We can substitute this constant which is like the centre of gravity of a body instead of its divergent infinite series.

FEATHERS TO OUR CAP