

## CONTENTS

1. From the Editorial Desk	1
2. History of Mathematics-Statics	2
3. Statics-Basic Definitions	4
4. Know Your Mathematician	7
5. Statics-Crossword Puzzle	14
6. Cross out Crossword Puzzle	16
7. Mathematics in Architecture	18
8. Contribution of Women in Mathematical World	22
9. Math Glossary	28
10. Solution to the Problem of Previous Issue	31
11. Department Activities	34
12. Placement Details	45
13. Snapshots	46

- ❖ Solutions to the above problems are invited, at the earliest. The names of the readers who turn out first in providing answers to the problems will be published and the solutions will be published in the forthcoming issue.



## FROM THE EDITORIAL DESK

The PG Department of Mathematics has been established in the year 2003. It offers B.Sc., Mathematics with Computer Application, B.Sc., Mathematics and M.Phil., Research Programme.

The Department has to its credit, three National seminars and an Intercollegiate meet organized on 11<sup>th</sup> & 12<sup>th</sup> August 2005, 30<sup>th</sup> & 31<sup>th</sup> August 2007, 9<sup>th</sup> January 2014 and 13<sup>th</sup> September 2011 respectively. It has celebrated National Mathematical year 2012 on 24<sup>th</sup> August 2012. On memorial of Ramanujan's birthday Math Expo has organized by the department since 2013.

The Department is enriched with faculty members having wide knowledge in their specializations like Differential Equations, Fuzzy Set Theory, Graph Theory, Operations Research etc. The department has received two minor research projects funded by UGC. The department has produced 44 M.Phil., Research scholars from 2009 onwards.

The Department adds one more feather by publishing a Subject Based Yearly News Letter incorporating History of Mathematician, Crossword Puzzles, Cross out Crossword Puzzles, Mathematics in Architecture, Solutions to the Problems of Previous issue, Department Activities and Placement Details of the Students of Mathematics.

We welcome the suggestions and criticism for improvement in the content and presentation of materials of "MATH-MAZE".

## EDITORIAL DESK



## HISTORY OF STATICS

Statics is the branch of mechanics that is concerned with the analysis of loads (force and torque, or "moment") on physical systems in static equilibrium, that is, in a state where the relative positions of subsystems do not vary over time, or where components and structures are at a constant velocity. When in static equilibrium, the system is either at rest, or its centre of mass moves at constant velocity.

The subject of statics developed very early in history because the principles involved could be formulated simply from measurement of geometry and force. For example, the writings of Archimedes (287-212 B.C) deal with the principle of the lever. Studies of the pulley, inclined plane, and wrench are also recorded in ancient writings at times when the requirements of engineering were limited primarily to buildings construction.

There are few principles in mechanics, but they have wide applications in engineering. These principles form the basis for advanced research in vibrations, stability and strength of structures, fluid dynamics and so on. Thus, a thorough understanding of mechanics is essential to progress in these fields of research, or to simply become a good engineer.

Statics is the oldest physical science. The main theory of mechanics in antiquity was Aristotelian mechanics. In the middle ages, Aristotle's theories were criticized and modified by a number of figures, beginning with John Philoponus in the 6<sup>th</sup> century. A central problem was that of projectile motion, which was discussed by Hipparchus and Philoponus. This led to the development of the theory of impetus by 14<sup>th</sup> century French Jean Buridan, which developed into the modern theories of inertia, velocity, acceleration and momentum. This work and others was developed in 14<sup>th</sup> century, England by the Oxford Calculators such as Thomas Bradwardine, who studied and formulated various laws regarding falling bodies. On the question of a body subject to a constant (uniform) force, the 12<sup>th</sup> century Jewish-Muslim Hibat Allah Abu'l-Barakat al-Baghdaadi stated that constant force imparts constant acceleration, while the main properties are uniformly accelerated motion (as of falling bodies) was worked out by the 14<sup>th</sup> century Oxford Calculators. Two central figures in the early modern age are Galileo Galilei and Isaac Newton. Galileo's final statement of his mechanics, particularly of falling bodies, is his two New Sciences (1638). Newton's (1687) *Philosophiae Naturalis Principia Mathematica* provided a detailed mathematical account of mechanics, using the newly developed mathematics of calculus and providing the basis of Newtonian mechanics.

The basic principles of statics were developed very early. The fundamentals of levers, inclined planes, and other principles were needed by early civilizations to construct huge structures such as the pyramids. Below is a timeline giving important a milestone in the

*The mathematician has reached the highest rung on the ladder of human thought.*

- Havelock Ellis

development of mechanics. Statics is concerned about how a mechanical system would act, if everything is perfectly motionless and rigid.

### Important Developments in the History of Mechanics

400 BC	Archytus of Tarentum - Theory of Pulleys
287-212 BC	Archimedes - Lever equilibrium, buoyancy principle
1452-1519	Leonardo da Vinci - Equilibrium, concept of moments
1548-1620	Stevinus - Inclined planes, parallelogram law for addition of forces
1564-1642	Stevinus, Galileo - Virtual work principles
1629-1695	Huygens - Accurate measurement of the acceleration due to gravity
1654-1722	Varignon - Work with moment and force relationships
1667-1748	Bernoulli - Application of virtual work to equilibrium
1707-1793	Euler - Rigid body systems, moments of inertia
1717-1783	D'Alembert - Concept of inertia force
1736-1813	Lagrange - Formalized generalized equations of motion
1792-1843	Coriolis - Work with moving frames of reference
1879-1955	Einstein - Theory of relativity

During the analysis of systems of bodies and forces, it is critical to notate the pairs of forces so as to avoid becoming confused. To simplify your analysis, it is best to isolate the system, considering one body with the forces acting on it.

In mechanics, the four fundamental quantities called dimensions: length, mass, force and time. The units used to measure these quantities must be consistent with each other in the equations. There are a number of unit systems, but this text will use the ones commonly used in science and engineering.

The International System of Units (abbreviated SI from French: *Système international d'unités*) is the modern form of the metric system and is generally a system of units of measurement devised around seven base units and the convenience of the number ten. SI is the world's most widely used system of measurement, which is used both in everyday commerce and in science. The system has been nearly globally adopted with the United States being the only industrialized nation that does not mainly use the metric system in its commercial and standards activities.

*Perfect numbers like perfect men are very rare.*

- Rene Descartes

## STATICS - BASIC DEFINITIONS

### FORCE

A *force* is any cause which produces or tends to produce a change in the existing state of rest of a body or of its uniform motion in a straight line.

### TENSION

When we push or pull a body by means of a string or a rod, we exert some force on the body through the string or the rod. Such a force is called a *tension* or thrust.

### REACTION

Forces produced by direct contact are known as action and reaction.

### EQUILIBRIUM

When a number of forces act on a body and keep it at rest, the forces are said to be in *equilibrium*.

### MOMENT

The moment of a force about a point is defined to be the product of the force and the perpendicular distance of the point from the line of action of the force, that is, the *moment* of the force  $F$  about  $O$  is  $M = F * ON$ .

### MOMENT OF A COUPLE

*Moment of a couple* is the product of either of the two forces of the couple and the perpendicular distance between them.

### RESULTANT OF COPLANAR COUPLES

The *resultant* of any number of couples in the same plane on a rigid body is a single couple whose moment is equal to the algebraic sum of the moments of the several couples.

### WORK

When a force acting on a body moves its point of application, it is said to do *work* on the body.

*As for everything else, so for mathematical theory: beauty can be perceived but not explained.*

- Arthur Cayley

## **FRICTION**

If two bodies are in contact with one another, the property of the two bodies, by means of which a force is exerted between them at their point of contact to prevent one body from sliding on the other is called *friction*, the force exerted is called the force of friction.

### **STATICAL FRICTION**

When one body in contact with another is in equilibrium, the friction exerted is just sufficient to maintain equilibrium and is called statical friction.

### **LIMITING FRICTION**

When one body is just on the point of sliding on another, the friction exerted attains its maximum value and is called limiting friction, the equilibrium in this case is said to be limiting.

### **DYNAMICAL FRICTION**

When motion ensues by one body sliding over another, the friction exerted is called dynamical friction.

### **ANGLE OF FRICTION**

When one body is in limiting equilibrium over another, the angle which the resultant reaction makes with the normal at the point of contact is called the angle of friction.

## **CENTRE OF GRAVITY**

The *centre of gravity* of a body is that point through which the line of action of the weight of the body always passes in whichever position the body is held.

## **VIRTUAL WORK**

The body in equilibrium is not actually displaced, the displacement given to it is called a virtual one and the work done by a force acting on the body during the displacement is called *virtual work*.

## **COUPLES**

Two equal and unlike parallel forces not acting at the same point are said to constitute a *couple* .

*The measure of our intellectual capacity is the capacity to feel less and less satisfied with our answers to better and better problems.*

- C.W. Churchmann

## **STABLE EQUILIBRIUM**

If the forces acting on the body tend to make it return towards its position of equilibrium, then the equilibrium is said to be *stable*.

## **UNSTABLE EQUILIBRIUM:**

If the forces acting on the body tend to move it away from the position of the equilibrium, the equilibrium is said to be *unstable*.

## **NEUTRAL EQUILIBRIUM:**

If the forces acting on the body in the displaced position are in equilibrium, the equilibrium is said to be *neutral*.



*The simplest schoolboy is now familiar with facts for which Archimedes would have sacrificed his life.*

- Ernest Renan

## KNOW YOUR MATHEMATICIAN

*Poinsot*



*An expert problem solver must be endowed with two incompatible quantities: a restless imagination and a patient pertinacity.*

- Howard W. Even



**Poinsot** was born on 3<sup>rd</sup> January 1777 in Paris. At the end of October 1794 Poinsot, who was a student in his last year at the College Louis-le-Grand in Paris, presented himself as a candidate in the first competitive entrance examination to the future Ecole Polytechnique. Admitted despite an insufficient knowledge of algebra, he left in 1797 in order to enter the École des Ponts et Chaussées, where he remained for three years. Neglecting his technical studies which held little attraction for him in favor of Mathematics, he eventually gave up the idea of becoming an engineer. From 1804 to 1809 he taught Mathematics at the Lycée Bonaparte in Paris; he was then appointed inspector general of the Imperial University.

Despite the frequent travels to the provinces necessitated by this new post, on 1<sup>st</sup> November 1810 Poinsot was named assistant professor of analysis and mechanics at the École Polytechnique, substituting for Labey. Although he held this position until the school was reorganized in September 1816, he actually taught there for only three years, after which time he arranged for A.A.L.Reynaud and later for Cauchy to substitute for him. He owed his appointment at the Polytechnique to the favorable reception given to his *Éléments de statique* (1803) and to three subsequent memoirs that dealt with the composition of momenta and the composition of areas (1806), the general theory of equilibrium and of movement in systems (1806), and polygons and polyhedra (1809). His reputation also resulted in his election on 31<sup>st</sup> May 1813 to the Mathematics section of the Académie des Sciences, replacing Lagrange.

From 1816 to 1826 Poinsot served as admissions examiner at the École Polytechnique, and on several occasions after 1830 he worked with the school's Conseil de Perfectionnement. Although in 1824 he gave up his duties as inspector general, his nomination in 1840 to the Conseil Royal de l'Instruction Publique kept him informed of university problems.

Poinsot was determined to publish only fully developed results and to present them with clarity and elegance. Consequently, he left a rather limited body of work, which was devoted mainly to mechanics, geometry and number theory.

*Mathematical knowledge adds vigour to the mind, frees it from prejudice, credulity, and superstition.*

- John Arbuthnot

He showed almost no interest in algebra except for his early investigations concerning the fifth-degree equation and his remarkable analysis of Lagrange's *Traité de la résolution des équations numériques de tous les degrés* (1808). Similarly, the infinitesimal calculus appears in his work only in the form of extracts (published in 1815) from his course in analysis at the *École Polytechnique*.

Yet it was in mechanics that Poinsot most effectively displayed his gift for geometry. Although *Éléments de statique* (1803) was merely a manual designed for candidates to the *École Polytechnique*, the work possessed the great merit of applying geometric methods to the study of elementary problems of mechanics and of introducing the concept of the couple. The latter notion, moreover, held a central place in two more highly developed memoris that Poinsot presented to the *Académie des Sciences* in 1804 and published in the *Journal de l'École polytechnique* in 1806. The second of these memories inspired an interesting debate between Poinsot and Lagrange concerning the principles of mechanics.

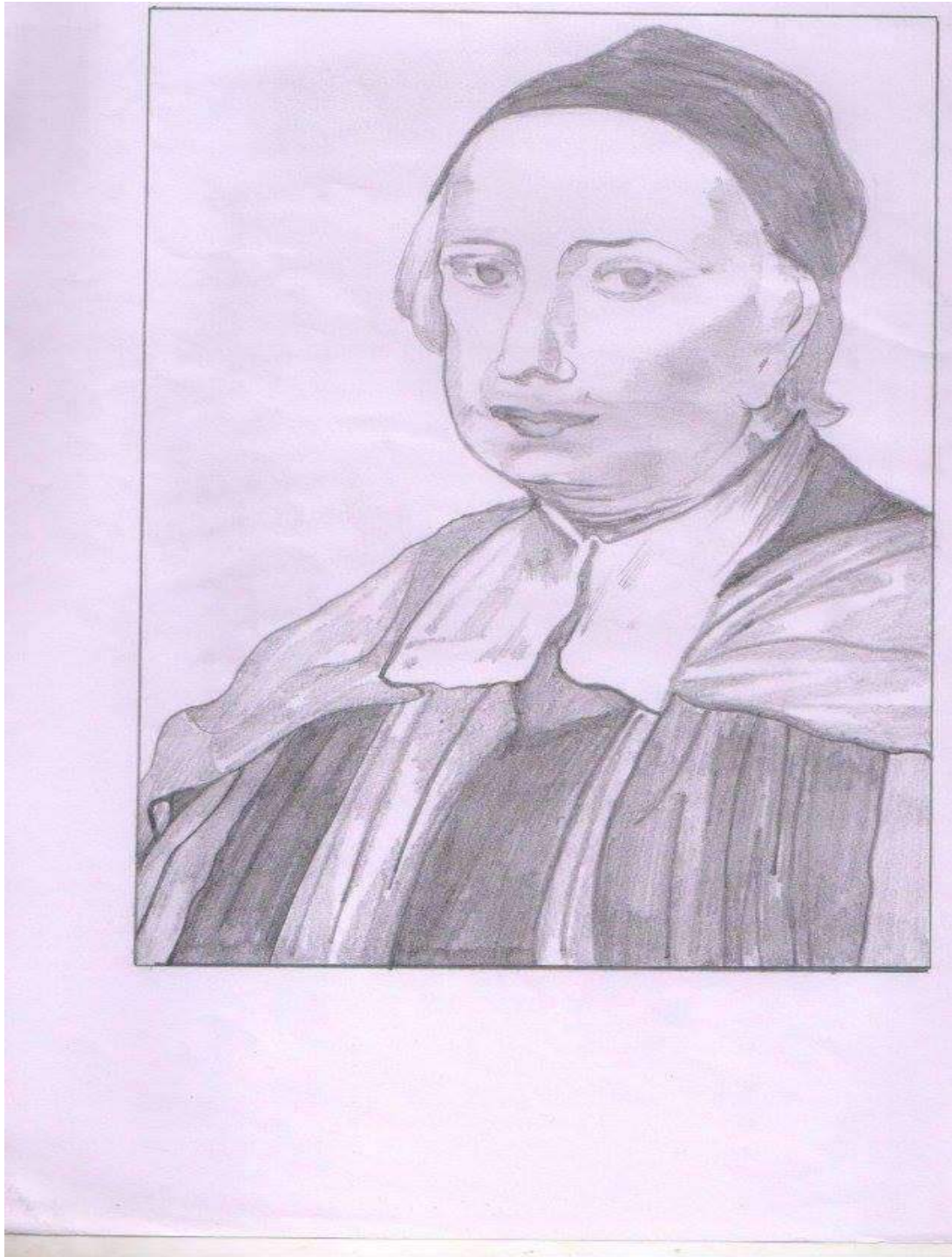
Among Poinsot's other writings on mechanics, the most important is *Théorie nouvelle de la rotation des corps* (1834). Pursuing the theoretical study undertaken in the eighteenth century by Euler, d'Alembert, and Lagrange, Poinsot established in a purely geometric fashion the existence of the axes of permanent rotation and worked out a very elegant representation of rotary motion by the rolling of the ellipsoid of inertia of a body on a fixed plane (Poinsot motion).

In frequent opposition to the French analytic school of the first half of the nineteenth century, Poinsot produced an original body of work by successfully submitting to geometric treatment a certain number of fundamental questions in the mechanics of solids. Such a great personality was died on 5<sup>th</sup> December 1859.

. *I must study politics and war that my sons may have liberty to study mathematics and philosophy.*

- John Adams

*John wallis*



*A formal manipulator in mathematics often experiences the discomforting feeling that his pencil surpasses him in intelligence.*

- Howard W. Eves

**John Wallis**, (born November 23<sup>rd</sup>, 1616, Ashford, Kent, England - died October 28<sup>th</sup>, 1703, Oxford, Oxfordshire), English Mathematician who contributed substantially to the origins of the calculus and was the most influential English Mathematician before Isaac Newton.

Wallis learned Latin, Greek, Hebrew, logic and arithmetic during his early school years. In 1632 he entered the University of Cambridge, where he received B.A. and M.A. degrees in 1637 and 1640 respectively. He was ordained a priest in 1640 and shortly afterward exhibited his skill in Mathematics by deciphering a number of cryptic messages from Royalist partisans that had fallen into the hands of the Parliamentarians. In 1645 the year of his marriage, Wallis moved to London, where in 1647 his serious interest in mathematics began when he read William Oughtred's *Clavis Mathematicae* ("The Keys to Mathematics").

Wallis' appointment in 1649 as Savilian professor of geometry at the University of Oxford marked the beginning of intense mathematical activity that lasted almost uninterruptedly to his death. A chance perusal of the works of the Italian physicist Evangelista Torricelli, who developed a method of indivisibles to effect the quadrature of curves, derived from the Italian Mathematician Bonaventura Cavalieri, stimulated Wallis' interest in the age-old problem of the quadrature of the circle, that is, finding a square that has an area equal to that of a given circle. In his *Arithmetica Infinitorum* ("The Arithmetic of Infinitesimals") of 1655, the result of his interest in Torricelli's work, Wallis extended Cavalieri's law of quadrature by devising a way to include negative and fractional exponents; thus he did not follow Cavalieri's geometric approach and instead assigned numerical values to spatial indivisibles. By means of a complex logical sequence, he established the following relationship:

$$\frac{4}{\pi} = \frac{3.3.5.5.7.7.9.9.11.11 \dots}{2.4.4.6.6.8.8.10.10.12 \dots}$$

Isaac Newton reported that his work on the binomial theorem and on the calculus arose from a thorough study of the *Arithmetica Infinitorum* during his undergraduate years at Cambridge. The book promptly brought fame to Wallis, who was then recognized as one of the leading Mathematicians in England.

*The study of mathematics cannot be replaced by any other activity that will train and develop man's purely logical faculties to the same level of rationality.*

- C.O Oakley

In 1657 Wallis published the *Mathesis Universalis* (“Universal Mathematics”), on algebra, arithmetic, and geometry, in which he further developed notation. He invented and introduced the symbol  $\infty$  for infinity. This symbol found use in treating a series of squares of indivisibles. His introduction of negative and fractional exponential notation was an important advance.

The idea of the power of a number is very old; the application of the exponent dates from the 14<sup>th</sup> century. The French Mathematician René Descartes in 1632 first used the symbol  $a^3$  but Wallis was the first to demonstrate the utility of the exponent, particularly by his negative and fractional exponents.

Wallis was active in the weekly scientific meetings that, beginning as early as 1645 led to the formation of the Royal Society of London by charter of King Charles II in 1662. In his *Tractatus de Sectionibus Conicis* (1659; “Tract on Conic Sections”), he described the curves that are obtained as cross sections by cutting a cone with a plane as properties of algebraic coordinates.

His *Mechanica, sive Tractatus de Motu* (“Mechanics, or Tract on Motion”) in 1669-71 (three parts) refuted many of the errors regarding motion that had persisted since the time of Archimedes; he gave a more rigorous meaning to such terms as force and momentum, and he assumed that the gravity of the Earth may be regarded as localized at its centre.

Wallis’ life was embittered by quarrels with his contemporaries, including the political philosopher Thomas Hobbes, who characterized his *Arithmetica Infinitorum* as a “scab of symbols,” and the Dutch Mathematician Christiaan Huygens, whom he once tricked with an anagram concerning a possible satellite of Saturn. Against the French philosopher and Mathematician René Descartes he was particularly severe. Approaching his 70<sup>th</sup> year, Wallis published, in 1685 his *Treatise on Algebra*, an important study of equations that he applied to the properties of conoids, which are shaped almost like a cone. Moreover, in this work he anticipated the concept of complex numbers (e.g.,  $a + b\sqrt{-1}$ , in which  $a$  and  $b$  are real).

*Mathematics, as much as music or any other art, is one of the means by which we rise to a complete self-consciousness.*

- John William Navin Sullivan

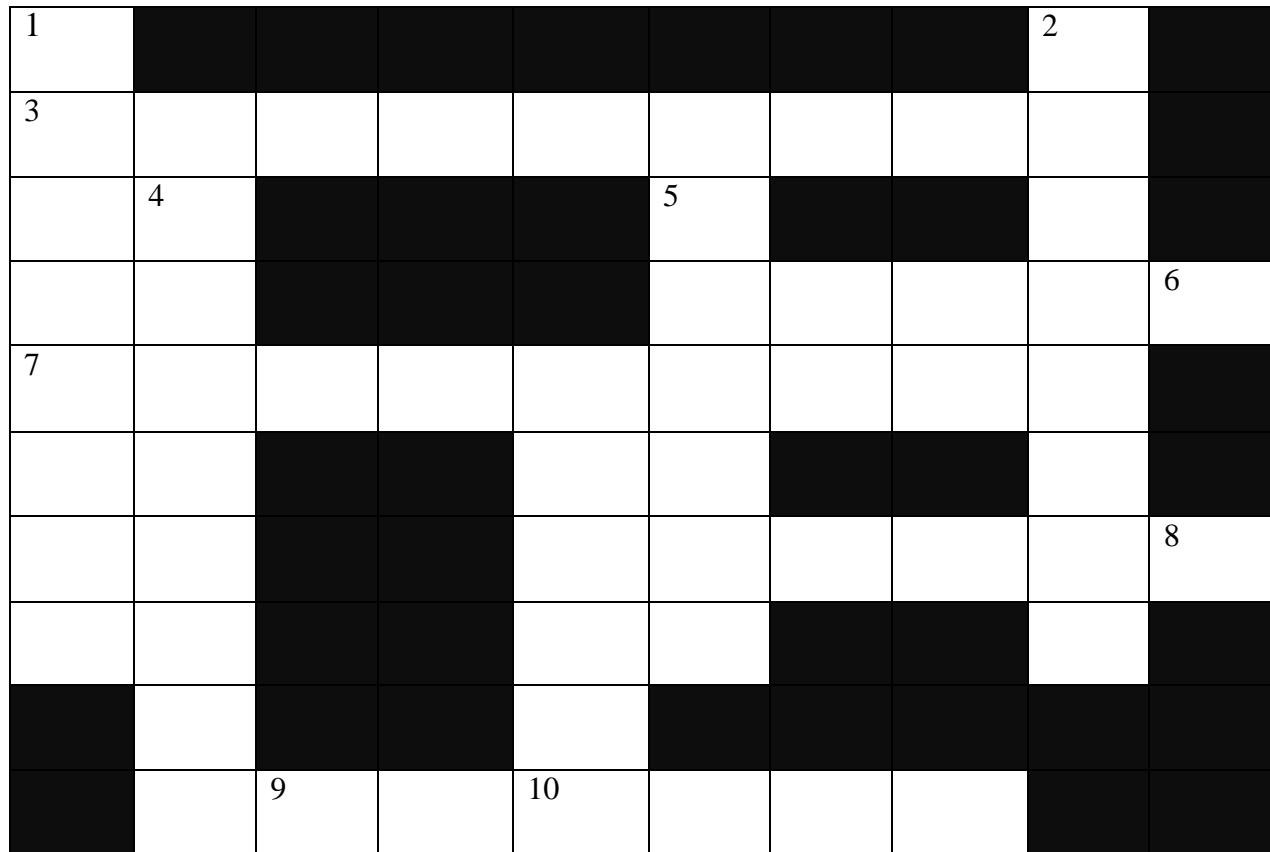
By applying algebraic techniques rather than those of traditional geometry, Wallis contributed substantially to solving problems involving infinitesimals-that is, those quantities that are incalculably small.

Thereby Mathematics, eventually through the differential and integral calculus, became the most powerful tool of research in astronomy and theoretical physics. Wallis' many mathematical and scientific works were collected and published together as the Opera Mathematica in three folio volumes in 1693-99.

*How could youths better learn to live than by once trying the experiment of living? Methinks this would educate their minds as much as mathematics.*

- Henry David Thoreau

## CROSSWORD PUZZLES



**Right to Left:**

- 3. For every action of force on a body, there is a -----.
- 7. The ----- force between the two bodies in contact prevents one from sliding over the other is called the force of friction.
- 9. ----- measures the tendency to rotate the body about a point.

*The union of the mathematician with the poet, fervor with measure, passion with correctness, this surely is the ideal.*

- William James

**Left to Right:**

6. The ----- of the limiting friction to the normal reaction is called the coefficient of friction.

8. The moment of a force about a point which lies on the line of action of the force is -----.

**Top to Bottom:**

1. If two bodies are in contact with one another, the force exerted between them at their point of contact to prevent one body from sliding other is -----.

2. The centre of ----- forces is a unique point.

4. The ----- friction is a self-adjusting force and is just sufficient to maintain equilibrium.

5. The -----ensures by one body sliding over another, the friction exerted is called dynamical friction.

**Bottom to Top:**

10. The centre of gravity of a uniform rod is at its -----\_point.



*Nature is an infinite sphere of which the center is everywhere and the circumference nowhere.*

- Blaise Pascal



## CROSSOUT CROSSWORD PUZZLE

E	Q	U	I	L	I	B	R	I	U	M	Q	S	V	D
A	D	N	J	M	O	I	E	T	W	A	Z	L	A	I
E	I	L	U	Z	B	F	S	N	X	K	G	I	R	A
H	G	I	O	R	P	O	U	N	D	A	L	D	P	G
Y	I	K	T	S	A	E	L	B	T	H	E	I	J	O
O	R	E	Z	I	W	A	T	E	N	J	P	N	P	N
M	D	N	S	A	Y	Q	A	L	O	Y	H	G	E	A
D	I	W	C	O	S	U	N	P	I	C	X	U	L	L
E	L	G	N	A	I	R	T	D	T	E	G	C	P	S
J	Z	V	L	F	T	B	Z	V	C	R	Q	F	U	B
O	B	M	R	K	F	S	E	D	I	C	N	I	O	C
N	Q	D	E	V	L	O	S	E	R	U	S	L	C	D
P	A	S	S	I	V	E	M	Y	F	W	C	Z	K	F

1. When one body in contact with another is in -----, the force exerted is called statical friction.
2. Unit of moment is a ----- foot.
3. Friction is a ----- force.
4. The least value of the resultant occurs when  $\cos\alpha$  is -----.

*Pure mathematics is, in its way, the poetry of logical ideas.*

- Albert Einstein

5. Forces are in equilibrium when the resultant is -----.
6. Centre of gravity of a uniform wire bent in the form of a -----.
7. The centre of gravity of a body, if it exists always ----- with the centre of mass.
8. When a given force is resolved into two components in two mutually perpendicular directions, the components are referred to as the ----- parts.
9. Two equal and ----- parallel forces not acting at the same point are said to constitute a couple.
10. The algebraic sum of the resolved parts of two forces in any direction is equal to the resolved parts of the ----- in the same direction.
11. When one body is just on the point of ----- on another, the friction exerted attains its maximum value.
12. The centre of gravity of a uniform parallelogram is at the point of intersection of its -----.
13. The resultant of any number of couples in the same plane on a ----- body is a single couple.
14. The ----- is positive when its moment is positive.
15. The coefficient of ----- is equal to the tangent of the angle of friction.



*Go down deep enough into anything and you will find mathematics.*

- Dean Schlicter

## MATHEMATICS IN ARCHITECTURE

### The Great Pyramid of Giza - Cairo, Egypt

The superlatives that describe the Great Pyramid of Giza speak for itself; it's largest and oldest of the three pyramids and was the tallest man-made structure in the world for 3,800 years, but there's also plenty of math behind one of the Seven Wonders of the Ancient World. There is debate as to the geometry used in the design of the Great Pyramid of Giza in Egypt built around 2560 BC, its once flat, smooth outer shell is gone and all that remains is the roughly-shaped inner core, so it is difficult to know with absolute certainty. The outer shell remains though at the cone, so this does help to establish the original dimensions. There is evidence, however, that the design of the pyramid may embody these foundations of mathematics and geometry:

- Pi, the Golden Ratio that appears throughout nature.
- Pi, the circumference of a circle in relation to its diameter.
- The Pythagorean Theorem - credited by tradition to mathematician Pythagoras (about 570 - 495 BC), which can be expressed as  $a^2 + b^2 = c^2$ .



### Taj Mahal - Agra, India

Sitting firmly at the top of many travelers' wish lists, the Taj Mahal in India is a delight for tourists, with many waiting to get that iconic photo in front of this beautiful building. But look closer and you will find a great example of line symmetry - with two lines, one vertical down the middle of the Taj, and one along the waterline, showing the reflection of the prayer towers in the water.

*Mathematics is the supreme judge; from its decisions there is no appeal.*

- Tobias Dantzig



### **The Eden Project - Cornwall, UK**

The Eden Project, in South West England, opened in 2001 and now ranks as one of the UK's most popular tourist attractions. Although visitors come to check out what's inside, the greenhouses - geodesic domes made up of hexagonal and pentagonal cells - are pretty neat too.

The Core was added to the site in 2005, an education center that shows the relationship between plants and people. It's little surprise that the building has taken its inspiration from plants, using Fibonacci numbers to reflect the nature featured within the site.

There's even more math to be found in the building structure, which is derived from phyllotaxis, the mathematical basis for most plant growth (opposing spirals are found in many plants, from pine cones to sunflower heads).



*It is clear that the chief end of mathematical study must be to make the students think.*

- John Wesley Young

### **Parthenon - Athens, Greece**

It is constructed in 430 or 440 BC the Parthenon was built on the Ancient Greek ideals of harmony, demonstrated by the building's perfect proportions. The width to height ratio of 9:4 governs the vertical and horizontal proportions of the temple as well as other relationships of the building, for example the spacing between the columns. It's also been suggested that the Parthenon's proportions are based on the Golden Ratio (found in a rectangle whose sides are 1: 1.618). The Ancient Greeks were resourceful in their quest for beauty - they knew that if they made their columns completely straight, an optical illusion would make them seem thinner in the middle, so they compensated for this by making their columns slightly thicker in the middle.



### **Chichen Itza - Mexico**

Chichen Itza was built by the Maya Civilization, who was known as fantastic mathematicians, credited with the inventing 'zero' within their counting system. At 78 feet tall, the structure of El Castillo (or 'castle') within Chichen Itza is based on the astrological system. Some fast facts: The fifty two panels on each side of the pyramid represent the number of years in the Mayan cycle, the stairways dividing the eighteen tiers correspond to the Mayan calendar of eighteen months and the steps within El Castillo mirror the solar year, with a total of 365 steps, one step for each day of the year.

*Mathematics is no more computation than typing is literature.*

- John Allen Paulos



### **Guggenheim Museum - Bilbao, Spain**

Bilbao may not be the first place you would think to travel to in Spain, but the Guggenheim Museum certainly gives you a good excuse to pay this northern port city a visit. Since opening to the public in 1997, the Guggenheim Museum Bilbao has been celebrated as one of the most important buildings of the 20<sup>th</sup> century and it's not hard to see why.

Intended to mimic a ship, the titanium panels, which look like fish scales, were designed to appear random but actually relied on Computer Aided Three Dimensional Interactive Application (CATIA). In fact, computer simulation made it possible to build the sorts of shapes that architects from earlier years could have only imagined.



*The moving power of mathematical invention is not reasoning but imagination.*

- Augustus de Morgan

## CONTRIBUTION OF WOMEN IN MATHEMATICAL WORLD

### HYPATIA



Hypatia, who can be considered the first famous woman Mathematician, was born in Alexandria in Egypt. Hypatia was born in the year 350 AD, and died in the year 415 AD. Hypatia studied the works and theories of the great philosophers Plato and Aristotle. Some of the things that made Hypatia the first famous woman Mathematician include

- ❖ The fact that she wrote an introduction or commentary on a famous Greek math text book known as “Arithmetica.”
- ❖ The fact that she edited works by Ptolemy and potentially by other Greek Mathematicians and philosopher.
- ❖ She commented on or edited a number of other different works, including works on geometry by Apollonius.

### MARIA GAETANA AGNESI



Maria Gaetana Agnesi was born in 1718 and died in 1799. She is Italian Mathematician and philosopher, possibly the first female Mathematics professor. She wrote one of the first calculus textbook in 1748. She was offered a professorship by the Bologna Academy of Sciences,

*The study of mathematics is apt to commence in disappointment.*

- Alfred North Whitehead

making her the first female mathematics professor since antiquity, but it is unknown whether she accepted.

### **MARIE - SOPHIE GERMAIN**



Marie-Sophie Germain born in 1<sup>st</sup> April 1776 and died in 27<sup>th</sup> June 1831 was a French mathematician, physicist and philosopher. Despite initial opposition from her parents and difficulties presented by society, she gained education from books in her father's library including ones by Leonhard Euler and from correspondence with famous mathematicians such as Lagrange, Legendre and Gauss. One of the pioneers of elasticity theory, she won the grand prize from the Paris Academy of Sciences for her essay on the subject. Her work on Fermat's Last Theorem provided a foundation for mathematicians exploring the subject for hundreds of years after. Because of prejudice against her sex, she was unable to make a career out of mathematics, but she worked independently throughout her life. In recognition of her contribution towards advancement of mathematics, an honorary degree was also conferred upon her by the University of Gottingen six years after her death. At the centenary of her life, a street and a girls school were named after her. The Academy of Sciences established The Sophie Germain Prize in her honor.

### **AUGUSTA ADA KING, COUNTESS OF LOVELACE**



*The only way to learn mathematics is to do mathematics.*

- Paul Halmos



Augusta Ada King, Countess of Lovelace born in 10<sup>th</sup> December 1815 and died in 27<sup>th</sup> November 1852. She was a British Mathematician and writer, chiefly known for her work on Charles Babbage's early mechanical general-purpose computer, the Analytical Engine. Her notes on the engine include what is recognized as the first algorithm intended to be carried out by a machine. As a result, she is often regarded as the first computer programmer. The only legitimate child of the poet Lord Byron, she was brought up by her mother. She married William, Lord King in 1835. King was made Earl of Lovelace in 1838 and Ada became Lady Lovelace. She died of uterine cancer in 1852.

## **EMMY NOETHER**



Emmy Noether has an official name Amalie Emmy Noether. She born in 23<sup>rd</sup> March 1882 and died in 14<sup>th</sup> April 1935. She was a German Jewish Mathematician known for her landmark contributions to abstract algebra and theoretical physics. She was described by Pavel Alexandrov, Albert Einstein, Jean Dieudonne, Hermann Weyl and Norbert Wiener as the most important woman in the history of Mathematics. As one of the leading Mathematicians of her time, she developed the theories of rings, fields and algebras. In physics, Noether's theorem explains the connection between Symmetry and Conservation laws.

## **GABRIELLE**



*It is impossible to be a mathematician without begin a poet in soul.*

- Sofia Vasilyevna Kovalevskaya

Gabrielle Emilie Le Tonnelier de Breteuil, marquise du Chatelet born in 17<sup>th</sup> December 1706 and died in 10<sup>th</sup> September 1749. She was a French Mathematician, physicist and author during the Age of Enlightenment. Her most celebrated achievement is considered to be her translation and commentary on Isaac Newton's work Principia Mathematica. The translation, published posthumously in 1759, is still considered the standard French translation. Her commentary includes a profound contribution to Newtonian mechanics-the postulate of an additional conservation law for total energy, of which kinetic energy of motion is one element.

### **SHAFI GOLDWASSER**



Born in New York City, Goldwasser obtained her B.S.(1979) in Mathematics and Science from Carnegie Mellon University, and M.S.(1981) and Ph.d.(1984) in computer science from the University of California, Berkeley under the supervision of Manuel Blum, who is well known for advising some of the most prominent researchers in the field. She joined MIT in 1983, and in 1997 became the first holder of the RSA Professorship. She became a professor at the Weizmann Institute of Science, concurrent to her professorship at MIT, in 1993. She is a member of the Theory of Computation group at MIT Computer Science and Artificial Intelligence Laboratory. Goldwasser was a co-recipient of the 2012 Turing Award.

### **SOFIA VASILYEVNA KOVALEVSKAYA**

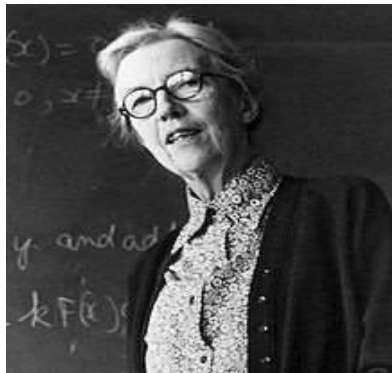


*Logic and mathematics are nothing but specialised linguistic structures.*

- Jean Piaget

Sofia Vasilyevna Kovalevskaya born in 15<sup>th</sup> January 1850 and died in 10<sup>th</sup> February 1891 was the first major Russian female Mathematician, responsible for important original contributions to analysis, partial differential equations and mechanics, and the first woman appointed to a full professorship in Northern Europe. She was also one of the first women to work for a scientific journal as an editor.

### **DAME MARY LUCY CARTWRIGHT**



Dame Mary Lucy Cartwright born in 17<sup>th</sup> December 1900 and died in 3<sup>rd</sup> April 1998. She was a British Mathematician. With J. E. Littlewoods she was the first to analyze a dynamical system with chaos. Cartwright was the first woman.

- ❖ to receive the Sylvester Medal
- ❖ to serve on the Council of the Royal Society
- ❖ to be President of the London Mathematical Society (in 1961 - 62) .

She also received the De Morgan Medal of the Society in 1968. In 1968 she was elected an Honorary Fellow of The Royal Society of Edinburgh (HonFRSE). In 1969 she received the distinction of being honored by the Queen, becoming Dame Mary Cartwright, Dame Commander of the Order of the British Empire.

### **MARY SOMERVILLE**



*A mathematician is a machine for turning coffee into theorems.*

- Paul Erdos

Mary Somerville born in 1780 and died in 1872. Mary Somerville was born at a time when it wasn't seen as necessary to give girls a good education. Mary however was very interested in Mathematics and tried to study whenever she could, either by teaching herself at home or by learning with friends and family members. When Mary married her second husband William, he was also interested in science and encouraged her to pursue her studies. In 1827 Mary was asked to translate a book by the French Mathematician Laplace. Mary's work was an immediate success and after this Mary continued to do lots of important research for the rest of her life. Mary was given lots of honours for her work, including having Somerville College at Oxford University named after her.

### **FLORENCE NIGHTINGALE**



Florence Nightingale born in the year 1820 and died in 1910. She called as 'the lady with the lamp' and know her as a famous nurse who was full of compassion and the founder of modern nursing. What is less well known is that Florence was in fact a pioneering statistician who used her work to cut death rates dramatically.

When Florence went to nurse in the Crimean war she used statistics to show that lots of the soldiers were dying due to the conditions of the hospitals, rather than from fighting. Florence's use of statistics helped to show governments why people were dying and helped reduce mortality rates in both the army and at home. In particular Florence developed lots of innovative graphs and charts which made statistics easy to understand for politicians, as before this time it was not common to represent statistics in this way. Florence Nightingale's work is so important that for nearly 20 years her image was on the back of the British £10 note.

*The definition of a good mathematical problem is the mathematics it generates rather than the problem itself.*

- Sir Andrew John Wiles

# MATH GLOSSARY

## **Balance Scales**

A set of scales used to measure the mass or weight of an object.

## **Bar Graph**

Bar graph is a pictorial representation of any statistics which is used to compare data. It shows quantity or numbers in the form of bars which can be either horizontal or vertical.

## **Bar Notation**

A bar notation is a process of writing the repeating decimals or digits using bar symbol (over the repeating digits).

## **Base**

In plane geometry or solid geometry, the bottom of a figure. If the top is parallel to the bottom (as in a trapezoid or prism), both the top and bottom are called bases.

## **Base Number**

Base number is the number raised to the power which represents the number of units of a number system. For example, the base number of decimal system is 10.

## **Bell Curve**

The bell shaped curve or the graph is the common type of distribution for a variable. It indicates the normal distribution.

## **Bernoulli Number**

Bernoulli numbers are the sequence of rational numbers.

## **Bernoulli trial**

Bernoulli trial is the repetition of same experiments several times in which either one of the two outcomes is possible each time-success or failure. Repeated trials are independent. Binomial probability formula is used to find the Bernoulli trials.

## **Beta**

It is the second letter of the Greek alphabet. Normally it denotes unknown angles.

*Mathematicians are born, not made.*

- *Jules Henri Poincare*

## **Beta Distribution**

It's a family of continuous probability distribution on the intervals of  $(0,1)$ . It calculates probability density function and cumulative distribution function.

## **Beta Function**

Euler integral of the first kind is called the beta function.

## **Bi-conditional**

Bi-conditional is a condition between two parameters in which either both the parameters are true or both false. It is represented by if and only if or iff.

## **Bigha**

Bigha is a traditional term used as a unit of measurement of land in several states of India. The precise measurement of a Bigha varies from one part of India to other. It's less than 1 acres (0.4 hectares) but it can be extended upto 3 acres (1.2 hectares). So, there is no accurate conversion for this unit in international system of units.

## **Binary number system**

A binary number system is also called as base-2 number system. This system uses only 0s and 1s to represent letters, numbers and other characters and it is used by almost all modern computers.

## **Binomial**

A Binomial is an algebraic expression which has two distinct terms.

## **Biot Savart Law**

Biot Savart Law is an equation that describes the magnetic field generated by an electric current. It relates the magnetic field to the magnitude, direction, length and proximity of the electric current.

## **Bisector**

A line which divides an object into two equal parts is called a bisector. A bisector can bisect a line, angle and so on.

## **Bivariate Data**

Bivariate data involves two variables in which both are analyzed simultaneously. It deals with the cause or the relationship between two variables.

*Mathematics knows no races or geographic boundaries for mathematics, the cultural world is one country.*

- David Hilbert

**Bond Price**

Bond price is nothing but the sum paid to buy a bond. Bond prices have an inverse relationship with interest rates. When interest rates increase, bond prices fall and when interest rates fall, bond prices increase.

**Bounded Function:**

Bounded function is a function whose values are bounded to a limit. For example,  $f(x) = 1$  means the function is neither bigger nor smaller than 1.

**Bounded Sequence:**

A sequence having a lower bound and an upper bound is called the bounded sequence.

**Box plot:**

A box plot is a graphical representation of statistical measures like median, upper and lower quartiles, minimum and maximum data values.

**Brachistochrone Curve:**

A curve between two points which is covered by a particle from one point, under constant gravity, to the other in the least time.

**Breadth:**

A distance from one side of an object to the other side is called breadth.



*'Obvious' is the most dangerous word in mathematics.*

- Eric Temple Bell

**SOLUTIONS TO THE PROBLEMS OF THE PREVIOUS ISSUE**

**CROSSWORD PUZZLES – REAL ANALYSIS**

**ANSWERS:**

**LEFT TO RIGHT**

1. Open n-ball
3. Empty
5. Zero
9. Compact

**RIGHT TO LEFT**

6. Closed
8. Set
10. Convergent

**TOP TO BOTTOM**

12. Open
2. Adherent
11. Dense

**BOTTOM TO TOP**

4. Complete
7. Relation



## CROSSOUT CROSSWORD PUZZLES

1. Relation
2. Inverse
3. Countable
4. Empty
5. Open
6. Compact
7. Euclidean metric
8. Convergent
9. Constant
10. Topological
11. Unique
12. Complete
13. Continuous
14. Supremum
15. Irrational



## CONGRATULATIONS

Congratulations to the following readers who turn out first in providing answers to the problems of the previous issue:

### CROSSWORD PUZZLE

S.Nivithini II M.A., (English)

S.Harini II M.Com.,

R.Saranya II M.Sc.,( Physics)

### CROSSOUT CROSSWORD PUZZLE

K.Sasirekha III B.Sc., (Physics)

P.Agalya III B.Sc., (Chemistry)

P.Prathiba II M.Com.,



## DEPARTMENT ACTIVITIES

1. **Bridge Course** was organized on 01.07.2015 by the PG Department of Mathematics for I-B.Sc., Mathematics (A & B) and Mathematics (CA) students on the topic “Fundamentals of Mathematics”, to test and improve their knowledge. The aim of the entry level test is to enable them to cope with the transform from school to college level. Basic skills of students was tested through entry level test, which carries questions from Trigonometry, Differentiation and Integration, Set theory and Matrices, Statistics, Analytical Geometry and Complex Analysis.
2. **One day faculty development programme** was organized by the PG Department of Mathematics on 27.06.2015 in which N.Loganathan M.Com., M.Phil., M.B.A., M.B.A.,ICWA., Ph.D., Cost Auditor, Mullai Academy, Karur gave some shortcut techniques to solve quantitative aptitude.
3. The department has **released a book** titled on “ Numerical Aptitude for Competitive Examinations” in the college union inaugural function on 22.07.2015.
4. 23 students and two faculty members were visit and record programme like speech, songs, drama and kit in the **Kongu community radio station** at Kongu Engineering College on 31.07.2015.
5. **Two day workshop** on “Fundamentals of Analysis” organized by the PG Department of Mathematics, Vellalar College for Women on 19.08.2015 and 20.08.2015 with Mr.N.Annamalai, DST-INSPIRE FELLOW[JRF], Department of Mathematics, Bharathidasan University, Tiruchirappalli.
6. 128<sup>th</sup> Ramanujan’s Birthday Celebration, “**MATH EXPO – 15**” was organized by the PG Department of Mathematics on 18.12.2015, Mr.S.D.Chandrasekar, Secretary, Vellalar College for Women, Erode, opening the MATH EXPO.
7. Our students introduced fun way of learning maths to the students of Panchayat Union School, Karapaarai, through innovative pedagogy on 09.02.2016, as part of **Extension Activity**.

8. **Association Competitions** like E-invitation making and Paper Presentation were conducted by the Department of Mathematics on 22.02.2016 & 23.02.2016 to activate the interest of the students.

9. **Special Meeting** was organized by PG Department of Mathematics on 26.02.2016, Dr.R.Roopkumar, Associate Professor and Head, Department of Mathematics, School of Mathematical and Physical Sciences, Central University of Kerala gave a lecture on “Determinants of linear transformation”.

## ACTIVITIES OF THE FACULTY

### 1. Research Activities of the faculty

- M.Phil., Produced -3

### 2. Details of conference/Seminars/Workshops/Symposium -Resource person / Presented / Attended by the staff members -

S.No	Department	No. of. faculty Resource Person/ Presented/Attended	2014-15			
			Institutional Level	State Level	National Level	International Level
1.	PG Department of Mathematics	Resource person	1	1	-	-
		Presented	-	1	2	1
		Attended	30	-	10	-

### 3. Research Publications:

#### **Mrs.G.Thamizhendhi**

1. Published an article on “Equitable, Restrained and k-Domination in Intuitionistic Fuzzy Graphs” in Annals of Global Journal of Pure and Applied Mathematics, Volume 12, No.1, March, 2015, pp. 125-145.

2. Published an article on “Intuitionistic Fuzzy Tree Center-Based Clustering Algorithm” in Annals of International Journal of Soft Computing and Engineering, Volume 6, Issue 1, March, 2016, pp. 50-65.

#### **Mrs.K.K.Myithili**

1. Published an article on “Transversals of Intuitionistic Fuzzy Directed Hyper Graphs” in Annals of Notes on Intuitionistic Fuzzy Sets Volume 21, No.3, October 2015, pp. 66-79, ISSN:1310-4926.

2. Published an article on “Chromatic values of Intuitionistic Fuzzy Directed Hyper Graph colorings” in Annals of International Journal of Soft Computing and Engineering(IJSCE), Volume 6, Issue-1, March 2016, pp. 32-37, ISSN: 2231-2307(Online).

3. Published an article on “Properties of Transversals of Intuitionistic Fuzzy Directed Hyper Graphs” in Annals of Advances in Fuzzy Sets and Systems, Volume 21, February 2016, pp. 93-105, ISSN: 0973-421x.

### STUDENT ACTIVITIES

(i) Participation in Seminar / Conference / Workshop/ Symposium - 91

(ii) Presentation of Papers in Seminar / Conference /Workshop/Intercollegiate Meet

S.No	Name and class of the student	State/ Regional/ National/ International	Conference/ seminar/ Workshop/ Symposium/ Intercollegiate Meet	Title of Seminar	Organizer	Date(s)	Title of the Paper	Remark (Award/ Prize etc.)
1	N.P.Vanmathy I-M.Sc, Maths	State	Intercollegiate Meet	Arithram' 15	Sasurie College of Arts and Science, Vijayamangalam	20.8.15	Application of Differential Equation	-
2	M.Naveena I-M.Sc, Maths							
3	M.Jothy II-M.sc, Maths	State	Symposium	Graph theory and its Applications	Bharathidasan College of Arts and Science, Ellispettai	18.9.15	Application of Graph Theory in Communication Network	-
4	P.Mekala II-M.sc, Maths							
5	N.P.Vanmathy I-M.sc, Maths	State	Intercollegiate Meet	Traze' 15	Kongu Arts and Science College (Autonomous), Erode	23.9.15	Applications of Mathematics in Real life	-
6	S.Ramya I-M.sc, Maths							
7	T.Harini II-B.Sc, Maths' A'	State	Intercollegiate Meet	Wizards- 15	Dr.SNS Rajalakshmi College of Arts and Science (Autonomous), Coimbatore	12.1.16	Applications of Mathematics	III
8	S.Bhavithra II-B.Sc, Maths' A'							
9	S.JayaPriya II- B.Sc, Maths(CA)	State	Intercollegiate Meet	MATHFEST -2016	Dr. N.G.P. Arts and Science College - Coimbatore	11.2.16	Emerging Trends in Mathematics	-
10	R.Indhu II -B.Sc, Maths(CA)							
11	M.Sandhiya II- B.Sc, Maths(CA)							
12	P.Yogalakshmi II- B.Sc, Maths(CA)							
13	J.Kousika II-M.sc, Maths	National	Seminar	National Conference on Recent Trends in Fuzzy logic	P.K.R Arts College for Women, Gobi	17.2.16	IFS In Career Determination	-
14	P.Mekala II-M.sc, Maths						Application of Fuzzy Logic on Speed Motor	-
15	M.Sankari I-M.Sc, Maths							
16	C.Ugambika I-M.sc, Maths							

17	T.Ramya III-B.Sc, Maths	National	Seminar	Application of Mathematics	Vellalar College for Women (Autonomous) Erode.	25.2.16	Applications of Differential Calculus	-
18	R.Ramya III-B.Sc, Maths						Fuzzy Clustering for Students Data Repository Monitoring and Identification	-
19	P.Mekala II-M.Sc, Maths						Detecting Brain Tumor using Fuzzy Techniques	-
20	J.Kousika II-M.Sc, Maths						Geometric Computing for Freeform Architecture	-
21	K.K.Sangeetha I-M.Sc, Maths						Control Theory and its Applications	-
22	R.Pavithra I-M.Sc, Maths						Differential Equations and its Applications	II
23	Kezieh Joseph III-B.Sc.,Maths(CA)							
24	Dilna Thomas III-B.Sc.,Maths(CA)							
25	M.Sowmiya II-M.Sc, Maths	National	Conference	AMTCM- 2016	Nandha Arts & Science College, Erode	29.2.16	Control Theory and its Applications	-
26	R.Kalaivani II-M.Sc, Maths						Differential Equations and its Applications	II
27	A.Nandhini I-B.Sc, Maths 'B'							
28	B.Sivaranjini I-B.Sc, Maths 'B'							

## (iii) Co-curricular, Cultural and Sports activities

S.No.	Name and Class of the Student	Event / Programme	Date	Organizer	Award / Prize / Position
1	R.Mounica III B.Sc, Maths	Drawing	06.08.2015	Lotus Hospital, Erode.	II
2	R.Mounica III B.Sc, Maths	Art Work	24.08.2015	Tamil Nadu State Aids Control Society	II
3	P.Sangavi III B.Sc, Maths(CA)	Group Dance	23.09.2015	Kongu Arts and Science College (Autonomous), Erode.	I
4	V.Bhagya Lakshmi III B.Sc, Maths(CA)				
5	S.Roshini I B.Sc, Maths'B'				
6	R.VishnuPriya I B.Sc, Maths'B'				
7	M.Pavithra I B.Sc, Maths'B'				
8	N.Sowmiya I B.Sc, Maths'B'				
9	S.Deepa Sri I B.Sc, Maths(CA)	Miming	29.09.2015	P.K.R Arts College for Women, Gobichettipalayam.	II
10	M.Nandhini I B.Sc, Maths(CA)				
11	E.Vaishnavi I B.Sc, Maths(CA)				
12	V.Nandhini I B.Sc, Maths(CA)				
13	K.Srithra I B.Sc, Maths(CA)				
14	N.Dharanipriya I B.Sc, Maths'A'	Kamban Kazhagam KovaiKalloor ikalukKana Kamba Ramayana Tamil Speech	07.10.2015	Vellalar College for Women(Autonomous), Erode.	I Prize with Cash Award (Rs.600)
15	S.Ramya I M.sc, Maths	Math Modeling	18.12.2015		I



16	A.Krishnalakshmi I M.sc, Maths	Math Expo - 2015		Vellalar College for Women(Autonomous) Erode.	II
17	S.Naveena II B.Sc, Maths(CA)				
18	E.Ramiya II B.Sc, Maths(CA)				
19	D.Angelin Priyadharashini II B.Sc, Maths' A'				
20	S.P.Dhivyapriya II B.Sc, Maths' A'				
21	A.Agalya I B.Sc, Maths' A'				
22	P.Hemadharshini I B.Sc, Maths' A'				
23	G.Janani I B.Sc, Maths(CA)				
24	E.Vaishnavi I B.Sc, Maths(CA)				
25	A.Krishnalakshmi I M.Sc, Maths	Math Modeling	12.01.2015	Dr.SNS Rajalakshmi College of Arts and Science College (Autonomous), Coimbatore.	I
26	S.Ramya I M.Sc, Maths				
27	S.Ramya I M.Sc, Maths	Math Modeling	22.1.2016	Sri Krishna Arts & Science College, Coimbatore.	I
28	A.Krishnalakshmi I M.Sc, Maths				
29	K.Saranya III B.Sc, Maths	Knock your Brain			
30	A.Nithya III B.Sc, Maths				
31	S.Priyadharshini III B.Sc, Maths(CA)	Math Sketching			II
32	E.pavithra III B.Sc, Maths(CA)	Math Sketching	22.1.2016	Sri Krishna Arts & Science College, Coimbatore.	

33	A.Nithya III B.Sc, Maths	Vegetable Carving	28.1.2016	Vellalar College for Women (Autonomous),Erode	II
34	N.Dharanipriya I B.Sc, Maths 'A'	Speech	30.1.2016	Navarasam Arts and Science college, Arachalur.	I
35	P.Suriya I B.Sc, Maths 'B'	Foot Ball	05.02.2015 to 07.02.2016	Sports Development Authority of Tamilnadu	II (Rs. 3000)
36	A.Vijayakumari I B.Sc, Maths 'B'				
37	V.Bhavithra II B.Sc, Maths 'A'	Group Dance	06.02.2016	Vellalar College for Women (Autonomous),Erode	III
38	R.Indhumathi II B.Sc, Maths 'A'				
39	V.Priyanga II B.Sc, Maths 'B'				
40	C.Parkavi II B.Sc, Maths 'B'				
41	R.Yuvasri III B.Sc, Maths				II
42	T.Vinothini I B.Sc, Maths(CA)	Rangoli			III
43	M.Kowsalya I B.Sc, Maths 'A'	Fancy Dress	12.02.2016	Vellalar College for Women (Autonomous),Erode.	I
44	K.Varsha I B.Sc, Maths 'B'				I
45	M.Tharani I B.Sc, Maths 'B'				I
46	K.Priyadharshin I B.Sc, Maths 'B'				II
47	T.Deepika II B.Sc, Maths 'A'				I
48	S.P.Divyapriya II B.Sc, Maths 'A'				
49	M.Poovizhi II B.Sc, Maths 'B'				II
50	S.Sowndharya II B.Sc, Maths 'B'				II
51	T.Ramya III B.Sc, Maths				
52	P.Priyashree I B.Sc, Maths(CA)				

53	S.Nithya I B.Sc, Maths'B'	Kho-Kho	12.02.2016	Vellalar College for Women (Autonomous),Erode.	Winner		
54	R.Vishnupriya I B.Sc, Maths'B'						
55	S.Roshini I B.Sc, Maths'B'						
56	P.Dhivya II B.Sc, Maths'A'						
57	R.Gunapriya II B.Sc, Maths(CA)						
58	M.Mohanapriya II B.Sc, Maths(CA)						
59	B.Malarvizhi III B.Sc, Maths(CA)						
60	V.Vinnothini I B.Sc,Maths(CA)						
61	S.Roshini I B.Sc,Maths'B'	Throw ball			12.02.2016	Vellalar College for Women (Autonomous),Erode.	Runner
62	V.Vinnothini I B.Sc,Maths(CA)						
63	S.Sajitha II B.Sc,Maths(CA)						
64	V.Deepika II B.Sc,Maths(CA)						
65	P.Govartthini I B.Sc,Maths(CA)						
66	P.Surya I B.Sc,Maths'B'	Foot Ball	12.02.2016	Vellalar College for Women (Autonomous),Erode.			Runner
67	T.Ramya III B.Sc,Maths						
68	P.Sangavi III B.Sc,Maths(CA)						
69	S.Priyadharshini III B.Sc,Maths(CA)						
70	T.Mynadevi III B.Sc,Maths	100 m					12.02.2016
71	T.Mynadevi III B.Sc,Maths	200 m			III		

72	S.Sajitha II B.Sc,Maths(CA)	4*400 m	12.02.2016	Vellalar College for Women (Autonomous),Erode.	II
73	B.Prathiba III B.Sc,Maths(CA)	Swimming 50 m Relay			II
74	P.Sangavi III B.Sc,Maths(CA)				
75	N.Dharanipriya I B.Sc, Maths 'A'	Speech	14.02.2016	Sri VenkateshwaraKalviArako daiAranilai	I (Rs.1500)
76	P.Sangavi III B.Sc, Maths(CA)	Dance	16.02.2016	Nandha Arts & Science College, Erode	II
77	V.Bhagyalakshmi III B.Sc, Maths(CA)				
78	N.Sowmiya I B.Sc, Maths 'B'				
79	R.Vishnupriya I B.Sc, Maths 'B'				
80	M.Pavithra I B.Sc, Maths 'B'				
81	S.Rooshini I B.Sc, Maths 'B'				
82	S.Monisha I B.Sc, Maths(CA)	Miming	17.02.2016	Sri Amman Arts & Science College, Chittode	I
83	M.Nandhini I B.Sc, Maths(CA)				
84	S.V.Vinothini I B.Sc, Maths(CA)				
85	N.Ramya I B.Sc, Maths(CA)				
86	V.Deepika I B.Sc, Maths(CA)				
87	R.Yuvasri III B.Sc, Maths	Dance	26.02.2016	Shree Venkateshwara Hi-Tech Engineering College,Gobichettipalayam	I

88	A.Nandhini I B.Sc, Maths'B'	Paper Presentation	26.02.2016	Vellalar College for Women (Autonomous),Erode.	I
89	S.Nithya I B.Sc, Maths'B'				I
90	P.ShreeMathi I B.Sc, Maths'B'				II
91	R.VishnuPriyaa I B.Sc, Maths'B'				II
92	S.Jayapriya II- B.Sc, Maths(CA)				I
93	E.Ramiya II- B.Sc, Maths(CA)				I
94	V.GunaShanmugaPriya III- B.Sc, Maths(CA)				II
95	T.Soundarya III- B.Sc, Maths(CA)				II
96	A.Nithya III- B.Sc, Maths	E-invitation making	26.02.2016	Vellalar College for Women (Autonomous),Erode	I
97	V.Niveka I B.Sc, Maths'B'				II
98	A.Abitha II- B.Sc, Maths(CA)				I
99	S.Sowmiya III- B.Sc, Maths(CA)				II
100	V.Bhavithra II- B.Sc, Maths(A)	Dance	11.03.16	Sri Ramakrishna Mission Vidhyalaya College of Arts and Science, Coimbatore	I
101	V.Priyanka II- B.Sc, Maths(B)				
102	V.Padmavathi II- B.Sc, Maths(B)				
103	C.Parkavi II- B.Sc, Maths(B)				
104	M.Pavithra I- B.Sc, Maths(B)				

## PLACEMENT DETAILS

We feel proud that our students have been placed in the following reputed institutions.

S.No	Name of the Student	Class	Company Name
1	B.Bhuvaneshwari	III B.Sc.,Maths(CA)	AEE.BEE Academy
2	Dilna Thomas	III B.Sc.,Maths(CA)	Tech Mahindra
3	E.Gowri	III B.Sc.,Maths(CA)	Infosys
4	D.Keerthika	III B.Sc.,Maths(CA)	Wipro
5	Kezaih Joseph	III B.Sc.,Maths(CA)	Infosys(BPO)
6	V.Nithya	III B.Sc.,Maths(CA)	Infosys
7	E.Pavithra	III B.Sc.,Maths(CA)	Wipro
8	L.Sharadha Mishra	III B.Sc.,Maths(CA)	AEE.BEE Academy
9	S.Vignaya	III B.Sc.,Maths(CA)	Infosys
10	V.Dharshini	III B.Sc.,Maths	Wipro
11	R.Mounica	III B.Sc.,Maths	Wipro
12	T.Ramya	III B.Sc.,Maths	Wipro
13	S.ShanmugaPriya	III B.Sc.,Maths	AEE.BEE Academy
14	J.Swathi	III B.Sc.,Maths	AEE.BEE Academy
15	K.M.YasminFarzana	III B.Sc.,Maths	Wipro
16	R.Yuvasri	III B.Sc.,Maths	Infosys