DEPARTMENTAL ACTIVITIES 2019 - 20

ISR PROGRAM

GUEST LECTURE

WORLD SCIENCE DAY

MATHEMATICAL SOCIETY

DEPARTMENT OF MATHEMATICS
ST. ALOYSIUS (AUTO) COLLEGE, JABALPUR

NEWS LETTER 2019-2020

Year 2020

Year 2020 can be expressed pictorially as the sum of squares of four consecutive primes, 17, 19, 23 & 29.

- 23rd Sept. 2019- **Guest Lecture** for PG Students.
  Resource Person: Dr. Anita Benafer, JEC, Jabalpur.
  Topic: Application of Operations Research.
- 5th Oct. 2019- **Extempore Competition** on Mathematics.
- 21st-22nd Oct 2019- **Institutional Social Responsibility:**
  Taught IX, X, XI & XII of Ramakrishna Ashram S.S. School as part of ISR Program
- 11th Nov. 2019- **World Science Day**: Speech Competition
- 16th Dec. 2019- **AAGAZ-2019**: Poster and Model Competition (Interschool;/Intercollegiate-District level)
- 12th Sept. -18th Dec.2019- **Certificate Course** on Research Documentation through Latex.
- 3rd-28th Feb. 2020- **Certificate Course** on Basics of MATLAB.
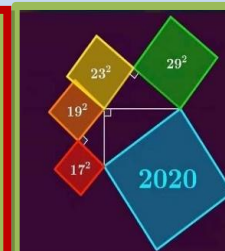- 26th May 2020- **National Webinar** on Research Documentation through Latex

New Way to Solve Quadratic Equations

Mathematician Dr. Po-Shen Loh of Carnegie Mellon University has derived a new way to solve quadratic equation problems which involves fewer steps.

Method

1) If you find r and s with sum –B and product C, then $x^2 + Bx + C = (x-r)(x-s)$, and they are all roots.

2) Two numbers sum to –B when they are $\frac{-B}{2} + u$, $\frac{-B}{2} - u$.

3) Their product is C when $\frac{B^2}{4} - u^2 = C$.

4) Square root always gives valid u.

5) Thus $\frac{-B}{2} + u$, $\frac{-B}{2} - u$ work as r and s, and are all roots.

Two more number system

Apart from known number systems there are some special number systems too like Quaternion and Octonion

Quaternion is used to describe 3-dimension shapes in 4-dimension space or to manipulate objects in 3 dimension like a rotating cube.

Octonion helps us to navigate in 8 dimensions. This number system is used in particle behaviour under strong field. It is used in calculating launched registry in aerospace vehicle, computer graphic, programming robots and many more. It allows for the existence of sterile neutrino.

Largest known prime number
M77232917
Discovered with over 23 million digits

Primes are divisible only by themselves and one. Search for ever larger primes requires complicated computer software collaboration

A recent collaborative computational effort has uncovered the longest known prime number which is over 23 million digits long.
It is given the name
M77232917

The Abel Prize Laureate 2019

The Norwegian Academy of Science and Letters awarded the Abel Prize for 2019 to **Karen Keskulla Uhlenbeck,** Universityof Texas at Austin, USA 'for her pioneering achievements in geometric partial differential equations, gauge theory and integrable systems, and for the fundamental impact of her work on analysis, geometry and mathematical physics'

Student Editors
Mr. Mohnish Dubey   Ms. Sakshi Singh   Ms. Shalu Kumari