Institute of mathematics & its applications

North West Branch

A Brief History of Primes

David Naughton
(Manchester Grammar School)

6.00pm Wednesday 8 November 2017
Refreshments at 5.45pm

Frank Adams Room 1 (TBC)
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ABSTRACT

In this talk I intend to take a notion that has permeated number theory, and is taught to students in primary school; that of prime numbers, and that there are in fact infinitely many of them. I am going to present several proofs that there are in fact infinitely many primes. From the simplest of the early proofs by Euclid, to Euler and Erdös, whose proofs actually did much more than to simply demonstrate the infinitude of the primes. In the case of Erdös he actually showed that the sum of their reciprocals in fact diverges. I will talk about why the proof of something that is in fact already known, is yet so vitally important. Most remarkable of all such proofs in one by Harry Furstenberg at the age of just 19, using a very topological argument. This will bring us on to discovering how Furstenberg's radically different approach opened up a whole new study in the field of Number Theory, and led to some huge breakthroughs in the study of patterns within the primes and to recent work by Terry Tao and Ben Green.

This talk will be a mixture of the historical and the mathematical, yet very little knowledge will be assumed.

The Speaker David Naughton, studied Mathematics at The University of Manchester, before completing his PhD, again in Manchester, in Ergodic Theory and Dynamical Systems in 2014. His mathematical interests centre on the applications of dynamical systems and Ergodic theory in Number Theory.
He now teaches Mathematics at the Manchester Grammar School, but is always keen to keep up his interest in the current goings on in the world of Mathematical research.

For further information, please contact Margaret Eastwood m.eastwood@mmu.ac.uk
No charge is made to attend meetings. Non-IMA members are welcome.