

Jules Henri Poincare

French Mathematician: Born: Nice, April 29, 1854. Died: July 17, 1912

Poincare has been called one of the last universal mathematicians because he could do first class creative mathematics in many different branches. He also wrote extensively in Astronomy. Because of the increasing specialization of mathematicians in the 20th and 21st Century, it is unlikely that someone doing so much work in so many different branches will emerge again.

Early in his life Poincare had motor coordination problems and poor eyesight. He was thought, maybe, to be a bit retarded. However, a photographic memory helped him do well in school. He lived through the horrors of the Franco-Prussian war, and died before the first World War, and mathematics interested him a lot more than nationalism.

Poincare earned his Ph.D. in 1879 and worked at the University of Paris after that. His work on the three-body problem in celestial mechanics and tides and rotating fluids helped establish the tidal hypothesis of the creation of the moon. He was also one of the first to see the creative genius of Albert Einstein and he wrote extensively on mathematical creativity.

The Poincare Conjecture (1904):

The claim concerns a space that locally looks like ordinary three dimensional space but is connected, finite in size, and lacks any boundary (a closed 3-manifold). The Poincaré conjecture claims that if such a space has the additional property that each loop in the space can be continuously tightened to a point, then it is just a three-dimensional sphere.

This conjecture was proved by Grigori Perelman in a series of papers made available in 2002 and 2003. The Poincare conjecture was, before being proven, one of the most important open questions in topology and was one of the seven Millennium Prize Problems. Perelman's work was verified in 2006 and this remains the only one of the seven Millennium Prize Problems to be solved to this time. (2009).