

Eye – catching mathematical headlines

Modern tabloid journalists clearly would have been in their element covering the bitter feud about credit for the cubic and quartic formulas during the 16th century and the colorful personalities like Tartaglia and Cardano who were involved in this controversy. During the past four centuries there have not been many mathematical stories that are comparable in terms of content and sensationalism, and for the most part this is best for everyone in and out of mathematics. However, there have been a few electrifying stories which have generated headlines in the nonmathematical world, and we shall summarize some recent examples here (but not in tabloid journalistic style and definitely not with the attention – grabbing photos that usually accompany tabloid articles!).

1954 – “Disgraced” major World War 2 codebreaker found dead

June 7, 1954. **Alan Turing**, the British logician and cryptographer who led the successful and crucial efforts to crack Axis naval codes and developed the foundations for much of modern computer science, was found dead at his home in Wilmslow, Cheshire, England; the officially stated cause of death was suicide by poisoning, but there is some evidence suggesting that the death may have been accidental. In March of 1952 Turing was convicted of obscene conduct under since – repealed 1885 laws prohibiting all male homosexual acts; as a consequence of this conviction, he lost the security clearance needed for him to continue research on classified matters, and in lieu of imprisonment he reluctantly consented to hormonal treatments which most people now regard as inhumane. There is no evidence that Turing ever did anything to warrant the removal of his security clearance, but shortly before this time some important diplomats and scientists were exposed as enemy agents who were also homosexual, and the high anxiety levels in the early phase of the Cold War led many to draw highly prejudicial conclusions on both sides of the Atlantic. Prior to the revelation of his homosexuality, Turing had been awarded the Order of the British Empire for his wartime work, which allowed the British navy to stay one step ahead of the Germans and to win the tide – turning Battle of the Atlantic. His theoretical computing concept, now known as a **Turing machine**, has become the standard framework for studying problems in the theory of computing, and Turing also made noteworthy contributions in several other areas, including mathematical biology and artificial intelligence. In 2008 the British government officially apologized for its treatment of Turing, whom **TIME** magazine had named as one of the 100 most influential persons of the 20th century.

1978 – Long time graduate student kills mathematics professor

August 18, 1978. A severely disgruntled graduate student clubbed a Stanford University mathematics professor to death. **Karel deLeeuw** was brutally murdered by Theodore Strelski, who had been a graduate student for the extraordinarily long period of 19 years and had been told that he would not receive a degree from the Department's doctoral program; other faculty members were also on a list of potential targets. Strelski was found guilty of second degree murder, but he was determined to have had

diminished mental capacity at the time of the crime and received a fairly light prison sentence. After his release from prison in the 1985, Streleski appeared on a prominent nationally syndicated television talk show, where he expressed a complete lack of remorse for his crime but stated that he had no plans to kill anyone else. There was predictable outrage at the airing of such a show and a related article in a fairly reputable magazine about celebrities, particularly since there was no significant effort to investigate the validity of Streleski's allegations about the victim. The prominent talk show host's position was that the great discrepancy between the violent crime and light sentence in this case deserved to be publicized, but his comments did not address questions about whether the murder victim's side of the story was presented adequately.

1993 – Major seventeenth century math problem finally solved

June 23, 1993. A mathematical research lecture at Cambridge University ended with a dramatic statement that a major open question in the subject had been answered.

Andrew Wiles of Princeton University concluded a series of lectures by observing that his results yielded a proof of a statement known as Fermat's Last Theorem. This question is simply stated and had attracted much attention from both amateur and professional mathematicians, but for 350 years progress towards solving it had been mainly limited to special cases. Other leading researchers in the area spoke tentatively about the work with guarded optimism, but they withheld final judgment until the accuracy of the work could be independently verified. This process took two years. During that time serious issues involving the validity of one key step arose and the validity of the argument was in doubt for a time, but Wiles and a coworker were able to find an alternative approach which was valid and avoided the difficulties that had been noted. Subsequently Wiles and his collaborator also managed to find a new argument which justified the disputed step in his original approach, and in 1998 the International Mathematical Union awarded Wiles a special prize for his accomplishments.

1994 – Mathematician's roller coaster ride to the Nobel Prize

October 11, 1994. The Nobel Prize in Economics was awarded jointly to three individuals for their work on the mathematical theory of games. One of the recipients was **John F. Nash**, an American mathematician who made monumental mathematical discoveries during the 1940s and 1950s but was struck down at the height of his career with serious mental health problems which plagued him for decades. Ironically, he was awarded the prize for research done during his undergraduate years and not for his later contributions to theoretical mathematics, for which he is best known and highly respected within mathematics itself. The incredible story of his life, including his mathematical triumphs, his afflictions, and his eventual recovery, is recounted in the book, ***A Beautiful Mind***, by Sylvia Nasar, and an award – winning motion picture (somewhat) based upon the book popularized his story even further.

1996 – Unabomber had been a highly talented mathematician

April 3, 1996. Police arrested an individual suspected of being the notorious “Unabomber,” who had set off bombs at various sites during the preceding 18 years, leaving a human toll of 3 dead and 23 injured (some seriously). The suspect, **Theodore Kaczynski**, had abandoned a very promising career as a research mathematician around the end of the 1960s and adopted a reclusive, survivalist lifestyle at an isolated location in Montana. He eventually entered a guilty plea and received a life sentence for his crimes. His writings indicate that his motives were a sense of outrage about technological progress and his perceptions about the concentration of economic power in the country and the world.

2006 – Reclusive mathematician rejects subject’s top honor

August 24, 2006. At its quadrennial meeting in Madrid, the International Mathematical Union announced that four mathematicians were awarded Fields Medals, which are the highest honor in mathematics and viewed as comparable to a Nobel Prize (there are colorful stories which claim to explain why there is no such prize in mathematics, but they are not regarded as credible). One of the recipients, **Grigoriy Perelman**, declined to accept his award. The subject of Perelman’s work was a previously open question, first posed in 1904, which the prestigious Clay Mathematics Institute in Massachusetts had listed as one of its six Millennium Problems in 2000. Perelman’s work gave ways of overcoming major obstacles in some groundbreaking earlier research of others, and several first rate mathematicians invested years of effort in verifying that his highly original approach was indeed mathematically valid. Perelman’s stated reasons for rejection involved a sense of isolation from the mathematical community, possibly related to differences of opinion about the extent to which he deserved credit for the solution to the problem, but he has consistently and politely declined to elaborate on his views. The Fields Medal rejection was not surprising because Perelman had already turned down other prizes and offers of distinguished academic positions, and at the time of the award he was living a reclusive and frugal life at his mother’s small, extremely modest apartment in St. Petersburg, Russia. Perelman’s isolation from the mathematical community has increased during the intervening years.