The Life of Pi

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Abstract. *In December 2002, over a trillion digits of π were computed in Tokyo. Forty years ago computing the billionth digit of π seemed to be impossible in the rest of time.*

The story of Pi reflects the most seminal, the most serious and sometimes the silliest aspects of mathematics. A surprising amount of the most important mathematics and a significant number of the most important mathematicians have contributed to its unfolding — directly or otherwise.

Pi is one of the few concepts in mathematics whose mention evokes a response of recognition and interest in those not concerned professionally with the subject. It has been a part of human culture and the educated imagination for more than twenty five hundred years (my title is that of this year's Booker Prize winning novel by Yann Martel). The computation of Pi is virtually the only topic from the most ancient stratum of mathematics that is still of serious interest to modern mathematical research. And to pursue this topic as it developed throughout the millennia is to follow a thread through the history of mathematics that winds through geometry, analysis and special functions, numerical analysis, algebra and number theory. It offers a subject which provides mathematicians with examples of many current mathematical techniques as well as a palpable sense of their historical development. My talk will provide witness to many of these claims and will be presented partly over the Internet. Indeed, we will 'compute' a trillion digits of Pi — during the lecture. (See also **www.cecm.sfu.ca/personal/jborwein/pi_cover.html**.)

References

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