The Philamath's Alphabet—G

Galois: Abel's work on the unsolvability of the general quintic equation was continued by the brilliant young French mathematician Évariste Galois (1811–1832), who determined (in terms of the so-called *Galois group*) which equations can be solved by radicals. Galois had a short and turbulent life, being sent to jail for political activism. He died tragically in a duel at the age of 20, having sat up the previous night writing out his mathematical achievements for posterity.

Gauss: Carl Friedrich Gauss (1777–1855) presented the first satisfactory proof of the fundamental theorem of al-

gebra (that every polynomial equation has a complex root) and made the first systematic study of the convergence of series. In number theory he initiated the study of congruences and proved the law of quadratic reciprocity. He also showed that a regular n -sided polygon can be constructed with straight-edge and compasses whenever n is a Fermat prime (such as 17, as shown on the stamp).

Gazeta mathematica: The Romanian monthly *Gazeta mathematica* was first published in 1895. With its aim of developing the mathematical knowledge of high-school students, it has had an enormous influence on mathematical life in Romania for many decades.

Gerbert: Gerbert of Aurillac (938–1003) trained in Catalonia and was probably the first to introduce the Hindu-Arabic numerals to Christian Europe, using an abacus that he had designed for the purpose. He was crowned Pope Sylvester II in 999.

Goldbach's conjecture: In 1742 Christian Goldbach wrote to Leonhard

Euler conjecturing that every even integer (> 2) can be written as the sum of two prime numbers. Although this remains unresolved, a partial result of Chen Jing-Run (1966), shown on the stamp, implies that every sufficiently large even integer can be written as the sum of a prime number and a number with at most two factors.

Gregorian calendar: The Julian calendar of 45 BC had $365\frac{1}{4}$ days, which was eleven minutes too long. In 1582, Pope Gregory XIII issued an edict that corrected the over-long year by removing three leap days every 400 years, so that 2000 was a leap year but 2100, 2200 and 2300 are not. The Gregorian calendar was quickly adopted by the Catholic world, and other countries eventually followed suit: Germany in 1700, Britain and the American colonies in 1752, Russia in 1917, and China in 1949.

Galois

Gazeta mathematica

Goldbach's conjecture

Gauss

Gerbert

Gregorian calendar

Please send all submissions to the Stamp Corner Editor,

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