

18.04 Some Genuine History

Mon 29 Sep 03

Now that Chapters 1-3 and Exam #1 are done, and we prepare to move on to complex integration, you may enjoy this brief digression to remind us where much of this stuff actually came from.

Fri Feb 26 00:05:20 1999

To: Alar Toomre

Subject: more on pi, e

Hi Alar,

I stumbled upon an interesting article on the history of mathematical notation on the web, which documents the origins of "e" and "pi":

"e" is clearly due to Euler, who apparently did not choose "e" to refer to "Euler".

The terms IMAGINARY and REAL were introduced in French by Rene Descartes (1596-1650) in "La Geometrie" (1637).

The term IMAGINARY PART was used by Sir William Rowan Hamilton in an 1843 paper.

LOGARITHM was coined in Latin as logarithmus by John Napier (1550-1617) in 1614 in Mirifici Logarithmorum Canonis descriptio. The word appears in English in a letter of March 10, 1615, from Henry Briggs to James Ussher: "Napier, Lord of Markinston, hath set my Head and Hands a Work with his new and admirable Logarithms. I hope to see him this summer, if it please God, for I never saw a book which pleased me better or made me more wonder."

The term LOGARITHMIC SPIRAL was introduced by Pierre Varignon (1654-1722) in a paper he presented to the Paris Academy in 1704 and published in 1722.

LOGARITHMIC FUNCTION is found in the 1902 Encyclopaedia Britannica [James A. Landau].

The term ANALYTIC FUNCTION was first used by Marquis de Condorcet (1743-1794) in his unpublished Trait du calcul integral (Youschkevitch, pages 37-84) [Giovanni Ferraro].

ANNULUS is found in 1834 in the Penny Cyclopedia (OED2).

SINE. According to some sources, sinus first appears in Latin in a translation of the Algebra of al-Khowarizmi by Gherard of Cremona (1114-1187).

The term COSINE was coined in Latin by Edmund Gunter (1581-1626) in 1620 in Canon triangulorum, sive, Tabulae sinuum et tangentium artificialium ad radium 100000.0000. & ad scrupula prima quadrantis, Londini: Excudebat G. Iones, 1620. According to the University of St. Andrews website, Gunter wrote co-sinus, although David Eugene Smith (1860-1944) in his History of Mathematics (vol. II), on page 619, writes: "...Edmund Gunter (1620) suggested co.sinus, a term soon modified by John Newton (1658) into cosinus, a word which was thereafter received with general favor."

DeMOIVRE'S THEOREM appears in the Century Dictionary (1889-1897).

EXPONENTIAL FUNCTION appears in an 1843 paper by Sir William Rowan Hamilton [James A. Landau].

FOURIER'S THEOREM is found in English 1834 in Rep. Brit. Assoc. (OED2).

FOURIER TRANSFORM is found in English in 1923 in Proc. Cambridge Philosophical Society (OED2).

MODULUS (of a complex number) was introduced by Augustin-Louis Cauchy (1789-1857) in 1821.

PURE IMAGINARY is found in 1881 in Elements of Algebra by G. A. Wentworth: "When a is zero, the root is a pure imaginary." The term may appear in the 1876 edition of An Elementary Treatise on Elliptic Functions by Arthur Cayley, which has-not been consulted; it does, however, appear in the 1961 Dover "corrected republication" of the 1895 edition of that work [James A. Landau].