

Logs and antilogs

Logarithm ('log') tables, in conjunction with antilog tables, were routinely used for mathematical, scientific and engineering calculations from the late sixteenth century through to the advent of electronic computers and pocket calculators in the 1970's.

Multiplication : $a \times b$: antilog ($\log a + \log b$)

Division : $a \div b$: antilog ($\log a - \log b$)

Involution : a^n : antilog ($n \log a$)

Evolution : $\sqrt[n]{a}$: antilog $[(\log a) / n]$

They were originally devised by John Napier (1550-1617), a Scottish mathematician and Protestant theologian, and then developed by Henry Briggs, an Englishman (1561-1630), who published a table of 14 figure 'common' (ie base 10) logarithms in 1617. Base 10 logarithms are sometimes known as Briggsian logarithms, and the 4 figure version are the ones Castle provides in this edition, though he also published a 5 figure edition.

Tables of 'natural' (ie base 'e', the Euler number) logarithms – sometimes known as hyperbolic or Naperian logarithms – were developed later in the century for use with the calculus. Castle does include a 4 figure version in this edition.

https://www.gracesguide.co.uk/Frank_Castle

FRANK CASTLE (1856 - 4 Aug 1928) was born at Dewsbury and after receiving his technical education at the Royal College of Science, London, served a seven years' apprenticeship with Messrs. Burman and Firth, engineers and tool-makers of Dewsbury.

He spent a further two years in engineering works, during which he introduced several improvements in grinding machinery, but in 1883 returned to the Royal College of Science as an assistant and demonstrator in the mechanics and mathematics department.

He remained at the college until 1909 and afterwards became an examiner in workshop mathematics and technical drawing to the London County Council, and later examiner and science master at Eastbourne Technical Evening Schools. He was the author of numerous books on practical mathematics and machine drawing.