

From the letter of Newton to Oldenburg (to be forwarded to Leibniz) of October 24, 1676.

“the basis of these operations, sufficiently obvious (since now I cannot continue my explanation) I have thus rather concealed 6a 2c d æ13e 2f 7i 3l 9n 4o 4q 2r 4s 9t 12v x.”

The decoded sentence was later published by Wallis as “*Data Æquatione quotcumque, fluentes quantitates involvente, fluxiones invenire, et vice versa,*” of which the literal translation is: *Given any equation, involving fluent quantities, to find the fluxions, and vice versa.* Fluentes in the work of Newton are changing quantities, and fluxions their rates of change. The word “function” was introduced later by Leibniz, but it did not acquire its modern meaning until the work of Fourier and Lejeune Dirichlet in the first half of XIX century.

In modern language Newtons sentence could be interpreted as a statement that he discovered how to differentiate functions and to solve differential equations. Other interpretations also can be given, see, for example Arnold, Ordinary Differential Equations, Introduction.

Later Newton’s students, “jackals of the lion”, as L. T. Moore calls them, said that Leibniz stole his calculus from Newton by deciphering the above sentence. Others argued reasonably that to decipher this sentence would be harder than to invent calculus...

Source: L. T. Moore, Isaac Newton. A Biography, Dover, NY, 1934.