a perusal of a graph and that

$$\frac{d}{dx}\left\{\underset{\delta\to 0}{Lt}\left(\frac{x^\delta - 1}{\delta}\right)\right\} = \underset{\delta\to 0}{Lt}\left\{\frac{d}{dx}\left(\frac{x^\delta - 1}{\delta}\right)\right\}.$$

We therefore begin all over again to find an argument that is more readily justifiable. Personally, I next try to differentiate $\log x$ from first principles and find inevitably that this process involves the same limit as held us up before. I then go straight to $\int_1^x \frac{dt}{t}$ and use this as a new definition for $\log_e x$. It gives the same function as the one we interpolated on the set of graphs with which we began.

Yours sincerely, A. W. FULLER

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P.S.

A mistake in the textbook I am using suggests a useful introduction to "conditions for validity."

"Show that $\tan^{-1}\frac{1+x}{1-x} = \frac{\pi}{4} + \tan^{-1} x$"

We differentiate $\tan^{-1}\left(\frac{1+x}{1-x}\right) - \tan^{-1} x$ and find the derivative zero. We conclude that the difference is constant, and find it by putting $x = 0$. The result is false for $x > 1$.

We are led to the condition "Provided y is a (continuous and) differentiable function of x, and $\frac{dy}{dx} = 0$, then y is constant."

$\left(\text{Tan}^{-1}\frac{1+x}{1-x}\right.$ is discontinuous at $x = 1.\Big)$

To the Editor of the *Mathematical Gazette*

DEAR SIR,

May I suggest a new approach to one corner of our nomenclature? For "anti-log" there are neither apologists nor alternatives. Yet our verb for the inverse operation to taking logs seems to carry the implication that one is either opposed to logs (anti-capital punishment) or compensating for them (anti-missile missile).

Similarly generation of students after generation have to be cautioned that $\sin^{-1} A$ does not mean $1/\sin A$ [just as $\sin^2 A$ does not mean $\sin(\sin A)$.] Here again a perfectly legitimate inverse function is handicapped by having incompletely unambiguous symbolism.

Should we replace anti-log by gol

$\sin^{-1}$ by nis

$\cos^{-1}$ by soc

$\tan^{-1}$ by nat,

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which are short distinctive easily pronounceable syllables? Even nish, shoc and nath are nearly as good but what is to be done with cosec^{-1}? One can always juggle without it and so perhaps it should go into the cupboard under the stairs with fluxion, versine, exsecant, slug and other debris.

Exp takes care of anti-natural log so gol can be confined to anti-common log.

Braintree C.F.E. Yours sincerely, G. S. LIGHT

To the Editor of the *Mathematical Gazette*

DEAR SIR,

Dr Kerr's excellent article on Mathematics in Colleges of Technology, which appeared in No. 362, gives a good idea of the courses for the Diploma in Technology in Mathematics, the first of which started at Northampton College of Advanced Technology, London, in January 1958. As Dr Kerr writes, the courses differ in some details, but they all have the object of teaching the kind of mathematics which is finding more and more application in engineering, industry and scientific research.

There is another side to the teaching of mathematics in Colleges of Technology, and that is the very important one of teaching mathematics to specialists in engineering or science. Apart from preparing unsuitable syllabuses and writing scathing reviews of books that engineers have been forced to write by the lack of interest shown by mathematicians, university lecturers in mathematics have given little help in this field, and it is to be hoped that the teaching of mathematics to the non-specialists who form the bulk of the student population will not be neglected by Colleges of Technology as well.

One other point which may cause misunderstanding is the paragraph "Other Diploma Courses." At Northampton College courses for the award of the Diploma of Northampton College, London (D.N.C.L.) have been running for some time. The D.N.C.L. is a post-graduate award, and most of the students are, in fact university graduates. It is not true therefore, in this case, that "the level is considerably lower than that of the Diploma in Technology." No doubt other Colleges award post-graduate diplomas, and it is necessary to ask, in every case, what sort of a diploma it is.

Yours sincerely, G. A. GARREAU

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