

P. J. Rippon

The last issue of the Newsletter contained an article on infinite exponentials in which the following problem (dating back to 1907) was stated.

For any complex number  $a$  let  $a_1 = a$  and

$$a_{n+1} = \exp[a_n \log a], \quad n = 1, 2, \dots,$$

where the principal branch of  $\log a$  is taken.

Is the sequence  $a_n$  convergent whenever  $a$  lies in

$$R_C = \{e^{\zeta} e^{-\zeta} : |\zeta| \leq 1\}?$$

This problem has now been given a more-or-less complete solution by Dr. I.N. Baker of Imperial College, London, who uses the classical theory of iteration as developed by Fatou and Julia. In fact  $a_n$  is convergent when  $a$  is an interior point of  $R_C$  and when  $a$  is of the form  $e^{\zeta} e^{-\zeta}$ ,  $\zeta$  being a root of unity. However for most points of  $\partial R_C$  the sequence  $a_n$  is divergent.

Details should appear.

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You who are reading this most likely know what's wrong with secondary school mathematics in Ireland [1]. The only question you need to have answered now is: "When is something going to be done about it?"

At the time of writing (October 1982) the Department of Education Mathematics Syllabus Committee is supposed to be in session. The agenda, as far as I know, does not mention Syllabus change but the Irish Maths. Teachers Association representative on the Committee will be asking that the IMTA's Draft Syllabus submitted last year be considered as a basis for a new scheme. For some IMTA members this session of the Syllabus Committee is tantamount to a sitting of the Delphic Oracle. Years of deliberation and consultation of members have gone into preparing the IMTA's case. Their brief is now in the hands of God. Or rather, it has been for about 18 months.

The IMTA's case is for a reduction by about one-third in the Higher Leaving Cert. courses - which should result in large percentages of examinees scoring high marks (why not?) in their exams. The IMTA are firmly behind an anti-abstract groundswell among teachers.

The groundswell has been there for years but with a fall-off of interest by Maths. teachers in their subject (as evidenced by enrolments in their Association) and the onset of the micro-computer, the Maths. teachers dummytit, there is no more hope of the groundswell coming to anything than there is of the Exchequer financing radical change.

This last consideration might prove to be a decisive one. Proponents, for example, of three Leaving Cert courses (lower, middle and higher) are almost certain to have their ideas frozen in the chill of public cut-backs. Indeed it may even be that any change which requires expenditure (e.g. on teacher retraining courses) which run into five (would you believe four?) figures will die a lonely death in the corridors of Marlborough Street where Department of Education finances are controlled. But that's only speculation.

Yet how dire is the need for change? Pretty dire, even viewed from the outside. That dirty word "fail" has not yet been erased from the minds of this country (surely an object lesson in how to brain-wash a whole people if ever there was one) even though no such category exists officially. One cannot fail the Leaving Certificate. It is an official impossibility.