2.   (Posed by the topologist Morton Brown)   Suppose that a_1, a_2 are real and not both zero, and

$$a_{n+2} = |a_{n+1}| - a_n, \quad n = 1,2,\ldots .$$

Prove that the sequence $\{a_n\}$ always has period 9.

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CONFERENCE REPORTS

FOURTH CONFERENCE ON APPLIED STATISTICS IN IRELAND

The Fourth Conference on Applied Statistics in Ireland was held in the Kilkea Castle Hotel, Castledermot, Co. Kildare, on 29-30 March 1984.   This conference was the fourth in a series which brings together individuals of diverse statistical inter- ests from industry, government and education.   Fifty-three participants (including two from overseas) attended the confer- ence and helped create an atmosphere conducive to the exchange of statistical ideas.   An added bonus to this year's conference was the book displays provided by both Chapman and Hall Ltd and John Wiley and Sons Ltd.   C.O.P.S. Ltd displayed IBM personal computers and some relevant statistical software.

The conference programme was divided into five sessions of contributed papers as well as two principal invited addresses. The first invited address was given by Mr Thomas P. Lenihan, Director of the Central Statistics Office.   Mr Lenihan gave an overview of the C.S.O. and its activities, and one could not but be impressed by the diversity and scope of this important information collecting agency.   Mr Charles Smith, chief stat- istician at Guinness Ireland Ltd, gave the second principal address in which he described the role of statistics at Guinness. It was quite interesting to note how diversely talented a large company like Guinness expects its statisticians to be.   Although the role of the statistician in industry seems to be well app- reciated (for historical and other reasons) at Guinness, it was perhaps a bit discouraging to learn that the number of statist- icians employed at Guinness has decreased markedly in recent years.

The first session of contributed papers was led off by Adrian Dunne (UCD) who demonstrated the potential of an object- ive design strategy for pharmacokinetic model discrimination. Graham Horgan (TCD) then described some of the practical prob- lems in the statistics of image processing, particularly with

regard to the case of satellite photography for environmental purposes. John Haslett (TCD) discussed the utilization of spatial information in performing discriminant analysis on multivariate data (e.g. with LANDSAT). Arnold Horner (UCD) and James Walsh (Carysfort) completed the initial session when they described a project they have undertaken to make information on the geography of Irish agricultural statistics more readily intelligible and more widely and rapidly diffused. Their recently published *Agriculture in Ireland - A Census Atlas* is the result of this project in which the mapping done is computer assisted.

Aidan Moran (UCC) began the second session by discussing some of the problems which arise in ranking students on the basis of an entrance scholarship examination at UCC which involves the selection of several different subjects. He demonstrated that as certain subjects seem to dominate the scholarship awards, some form of standardization is needed. Owen Egan (Educational Research Centre) discussed in the context of a regression model the performance of primary teachers' assessments of their pupils' abilities versus assessments based on test scores, and concluded that the teachers' assessments are as defensible as any that might be made under the prevailing error factors. Eamonn McEntee (Ulster Polytechnic) concluded the session by presenting some useful ideas on how the microcomputer might be used in the teaching of statistics.

Stephen Gardiner (Department of Agriculture for Northern Ireland) initiated the third (early morning) session in discussing recent research at the Plant Testing Station, Department of Agriculture (NI) involving the use of electrophoresis in studying competitive ability of perennial ryegrass cultivars in conventional swards. David McSherry (QUB) described ISIS (Interactive Statistical Information System), a programme he has developed designed for patient record management and statistical analysis in a study of femoral neck fracture in the elderly. Peter Whalley (Open University) presented a paper on the applicability of psychological data to multivariate

analysis. Eddie Gillespie (Ulster Polytechnic) concluded the session with a paper showing how in multiple linear regression the assumption of measurement error in the explanatory variables does not always cause regression parameters to be biased towards zero (as in simple linear regression), and that the direction of the bias depends on the degree of orthogonality between the explanatory variables.

In the fourth session Adrian Raffery (TCD) presented a new multivariate exponential distribution and compared it favourably with several of the more traditional multivariate exponential distributions. Mohammed Khan (Kent State University, Kent, Ohio) presented a sequential design scheme for estimating the optimal inspection time of a system of N independent and identical components.

Antony Unwin (TCD) in the fifth session described models for estimating the probability that another sample of votes would give a different election result and discussed the importance of the sampling effect in recent Irish elections. Don Bary (UCC) presented an interesting paper highlighting the need in many situations for a nonparametric approach to regression theory. Gabrielle Kelly (UCC) concluded the conference with a paper demonstrating the usefulness of the bootstrap method in estimating standard errors of regression coefficients.

This year's conference was organized by Dr P. Boland, with the assistance of Dr F. Murtagh and Dr D. Williams. It is anticipated that the tradition of these successful conferences will be continued in 1985 under the organization of Cork statisticians.

P.J. Boland