

## CORRESPONDENCE

### HELP SOUGHT

To the Editor, *The Mathematical Gazette*

DEAR SIR.—This amateur is interested in cubic residues. He has achieved some results, but does not know whether they are new or old. Dealing only with  $(6k + 1)$  type primes,  $p$ , he has

(1) An algorithm for the CR's (cubic residues) of all  $p \equiv 1 \pmod{18}$ , and all  $p$  for which  $3CRp$ ,

(2) A short cut to the solution of  $E^3 - 1 \equiv 0 \pmod{p}$ , and a number of miscellanea.

Now he needs skilled advice. Is there a professional, similarly interested and not too busy, who would volunteer? All letters will be answered.

Yours faithfully,

Flat 5, 29 Craneswater Park,  
Portsmouth, PO4 ONX

NIGEL CRIDLAND

I am sorry to have to record that Mr. Cridland died while proofs were in their last stages. Will anyone interested in this work please write to me as quickly as possible.

E. A. MAXWELL

To the Editor, *The Mathematical Gazette*

### THE LINEAR EQUATIONS PROBLEM

DEAR SIR.—Some thoughts on "Modern" school courses are prompted by two articles in the *Gazette* for December 1970:

In Classroom Note 233 Mr. A. K. Austin describes interviews for university mathematics courses. It appears that "traditional" candidates can solve  $x^2 - 3x + 2 = 0$  to produce  $x = 1$  or  $x = 2$  with no clear understanding of what they have done or what it means. Mr. Austin hopes that, with modern mathematics, students may understand better what the solutions mean, and I feel sure that this is so: my concern is that they will still be able to produce the solutions.

The other article, that by Mr. Merlane on Matrix Methods, points the danger. Mr. Merlane starts by describing the reaction of pupils to the solution of simultaneous equations by premultiplication with an inverse matrix: "Why perform this rigmarole when a perfectly good method already exists?" At the end of the article the suggested way to overcome this objection appears to be that they should not be taught the "perfectly good method"!

In between, Mr. Merlane describes a first course in Linear Algebra which is lucid and illuminating. He suggests that this course would lay foundations in the fourth form for later sixth form work, and it clearly would. But why should students be denied the practical and simple method of solving simultaneous equations, because they are learning matrix algebra? Two objections are given in the article:

(a) "The method is not one that sheds much light on the concepts of linear equations and mappings, both of which are unifying structures in mathematics."