

To the Editor, *The Mathematical Gazette*

FRIDAY 13TH

DEAR SIR.—In the article, *Friday 13th* (*Math. Gaz.* LV, No. 394 (December 1971) 412–5), J. O. Irwin finds that “in the 287 years 1901–2187, Jan. 1st occurs exactly 41 times on each day of the week”, and later conjectures “that 287 years is the longest consecutive period for which the occurrence of equal frequencies is possible”.

However, in the 378 years 1812–2189, Jan. 1st occurs exactly 54 times on each day of the week. I have not been able to stretch this period, but doubt whether it can be stretched.

It is here convenient to use the Quaker method of numbering the days of the week.

		Number of day of week on which Jan. 1st occurs						
1812–1895	(28 × 3 years)							
1896–1900		1	2		4		6	7
1901–2096	(28 × 7 years)							
2097–2100				3	4	5	6	
2101–2184	(28 × 3 years)							
2185–2189		1	2	3		5		7

Yours sincerely,

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To the Editor, *The Mathematical Gazette*

THE LINEAR EQUATIONS PROBLEM

DEAR SIR.—I relished the coverage given in reply to my article on “The Use of Matrix Methods when Solving Simultaneous Linear Equations” (*Gazette* LIV, No. 390 (December 1970) 337) and wonder if I might be permitted a reply.

It seems fair to say that no one has quarrelled with my opinion that a curriculum should not encourage the circumstances which provoked my pupils’ question. Considerable thought went into rebutting my considerations (a) and (b) which I made deliberately provocative.

The article was written early in 1969 when I became increasingly aware that some main-school texts were including matrix methods for solving sets of linear equations in two and three unknowns, without any consideration of the geometrical background or the future developments. What perturbed me more was the encouragement given to this trend by public examination questions some of which specified a matrix method for such a problem. My aim was to show that matrix methods had a context of their own and that my experience indicated that with careful handling this need not be feared. Against the rather stark presentation of a matrix method with little, if any, discussion of the cases when $\Delta = 0$, the elimination method was presented with a full discussion including graphs. This seemed to me to be a most biased state of affairs.

I think that several questions remain unanswered. For a start, why

do we include simultaneous linear equations in an O-Level or C.S.E. syllabus? Their revered position, as that of quadratic equations, is a traditional one, and if it is concluded that they are worthy of inclusion, then the least consequence is that they are taught in context and not as an end in themselves, either by matrix methods or otherwise.

I am greatly in sympathy with Dr. Gillies' article (*Gazette* LV, No. 394 (December 1971), 382), but I doubt whether his programme could be afforded the time in an O-Level syllabus. Furthermore it could be argued that his (academic) motivation is more appropriate for the sixth former. I agree with him that elimination methods can be systematised and then generalised, but at present this development is never contemplated in the framework of mathematics for twelve- to fifteen-year-olds, and any attempt at this in a modern syllabus would be difficult to sustain.

If I may say so, I think that Mr. F. Gerrish has missed the point of my article in his first paragraph (*Gazette*, LV, No. 394 (December 1971), 443). The geometrical picture that I aim to get across is independent of the technical problem of finding the solution set. Despite his strictures against a safe and exclusive diet of 2×2 matrices, I doubt whether the same clarity can be achieved otherwise.

Yours sincerely,

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G. MERLANE

GLEANINGS FAR AND NEAR

"I was, I believe, the first person who in parliament ventured to recommend a uniformity of weights and measures; and especially a decimal system of coinage, which produced eventually the adoption of the sovereign instead of the guinea. I was the mover of the new Board of Longitude, and of all the measures for the improvement of chronometers, as our old friend, Dr. Young, was always forward to acknowledge. I was for many years of the Council of the Royal Society, and forwarded, as far as my humble influence, and still humbler knowledge went, every experimental improvement.

"One remarkable improvement I attempted, as long as I was at the Council, but never succeeded in inducing England, France and the Northern powers to adopt—one common *thermometrical* scale. Is it not the greatest absurdity in the world, that the element of heat, common to all mankind, and of such a clear incessant and vital importance, not merely to science, but to everyday life, should be measured in the three great classes of the civilized world by three scales, Réaumur, the Centigrade and Fahrenheit—not merely different, but absolutely incommensurable—no integral number of any one being convertible into any integral of either of the two others, and this in a matter identical to all! I even went so far as to endeavour to have it talked about at the Congress of Vienna. I probably should have succeeded but for Buonaparte's return from Elba."

Extract from a letter from Croker to Murray, from *The Croker Papers* (per Mr. J. H. D. Parker).