To the Editor of the *Mathematical Gazette*

Dear Sir,

It would be interesting to have a large number of terms of the expression for $\pi$ as a continued fraction with unit numerators, which starts

$$3 + \frac{1}{7+ \frac{1}{15+ \frac{1}{1+ \frac{1}{292+ \frac{1}{1+ \frac{1}{1+ \cdots}}}}}.$$

For a random irrational number (assuming that ‘random’ can be defined!) the probability that a denominator of the continued fraction is a given positive integer $r$ is easily shown to be $1/r(r + 1)$. Now some irrational numbers are clearly not random. For example, quadratic irrationals recur, and $e$ has a regular pattern. A sufficiently long expression for $\pi$ would indicate whether $\pi$ is random in this sense.

Of course, a continued fraction has the advantage over a decimal that it is independent of the scale of notation.

Yours etc.,  E. J. F. Primrose

To the Editor of the *Mathematical Gazette*

Dear Sir,

I would like to reply to one of the points raised by Mr. E. H. Lockwood (*Math. Gaz.*, 1958, **42**, 202). As a mathematician, he suggests that we should “teach our pupils to use letters to represent numbers, rather than distances, times or sums of money.” As a teacher of chemistry I, along with many other teachers of the physical sciences, among whom I cite, in particular, Professor E. A. Guggenheim, instruct students in what Professor Guggenheim aptly terms the quantity calculus (*Journal of Chemical Education*, 1958, **35**, 606). It appears that the quantity calculus originated in the writings of A. Lodge (*Nature*, 1888, **38**, 281) and J. B. Henderson (*Math. Gaz.*, 1924, **12**, 99). In this calculus each letter, like $P$, symbolizes a physical quantity which is represented as the product of a measure (a real number) and an expression (often abbreviated) of the physical units which are being used. There are thus many possible representations of a physical quantity, as in the example $P = 1$ atm $= 1,013,250$ dynes cm$^{-2} = 1.013250$ bar $= 1.0332275$ kg. cm$^{-2} = 76$ cm mercury $= 29.92120$ in. mercury $= 14.696006$ lb. in$^{-2}$. To illustrate I will translate into the language of the quantity calculus the following statement of Mr. Lockwood (loc. cit.). “At $h$ feet above sea level the distance of the horizon is approximately $\sqrt{3h/2}$ miles.” In terms of the quantity calculus this becomes: “If $h$ and $d$ are the distances above sea level and to the horizon, then $d$/miles $\approx \sqrt{3h/2}$ feet.” The student of physical science eventually encounters