To the Editor of the *Mathematical Gazette*

DEAR SIR,

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

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

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 π would indicate whether π 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 $d/\text{miles} \simeq \sqrt{3h/2\text{ feet}}$." The student of physical science eventually encounters

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