

get advice from those who are more reliable. It is not a question of mathematics, but one of statistics and psychology.

It might be interesting to attempt a classification of unsoundness, from the obvious misprint to the hopelessly obscure question, but it would be difficult. To conclude, here are three examples of rather unusual types. An ambiguous question, set to candidates for Science scholarships: A uniform rod of length  $2a$  hangs, in a horizontal position by two light vertical strings of length  $b$ . Find the period of small oscillations.

A well-known result that is difficult to prove, also set to candidates for Science scholarships:

Prove that the solid which has the greatest volume for a given surface area is a sphere.

Set in London Inter. (Eng.), a question with too much data. This contained seven incompatible measurements, any six of which would give an answer, so that the seven answers were different. Other "correct" answers could be obtained by using all the data in various ways. This sort of question does not worry a candidate unless he has time to check his results, but is interesting to mark.

Yours etc., G. A. GARREAU

To the Editor of the *Mathematical Gazette*

DEAR SIR,

I should like to suggest two other windmills for Mr. Hope-Jones to tilt at. No doubt if he were fined 40 shillings he would indignantly defend the rights of the pound sterling; but how much more serious a matter might it be if the fine were mistakenly entered as '2 lb.'

Those of us who have to teach our pupils to distinguish between mass and weight, and who try to restrain them from using such phrases as *a force of 3 lb.*, receive too little support from some examiners and some text-book writers.

Many of us, again, teach our pupils to use letters to represent numbers, rather than distances, times or sums of money. We make them start an algebra problem, for example, by writing *Let  $x$  miles be the distance*, and finish it with  $x = 3$ . *Therefore the distance is 3 miles.* We hope that, trained in this way, they will not go wrong when they meet such a statement as *At  $h$  feet above sea level the distance of the horizon is approximately  $\sqrt{(3h/2)}$  miles.* But can we expect them to be more particular about these points than the examiners whose questions they have to answer?

There is, too, the unsatisfactory compromise *Let  $x$  be the distance in miles*, inaccurate and misleading, but tolerated because it is customary. Either  $x$  is a number or it is a distance. it cannot be both at once.

Yours etc., E. H. LOCKWOOD