# CORRESPONDENCE

## GEOBOARD GEOMETRY

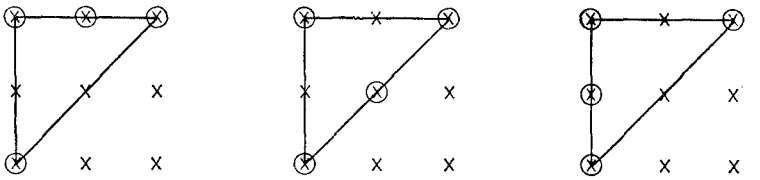
To the Editor, *The Mathematical Gazette*

DEAR SIR,

With reference to the article "Geoboard Geometry" by J. R. Branfield in the *Mathematical Gazette* for December 1970, there appear to be two mistakes compensating each other. These were found when we were investigating this situation with Mr. Branfield. He says no one else has informed him of this error, so he has asked us to write to you.

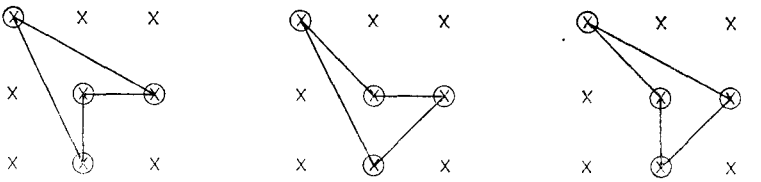
In counting quadrilaterals made by four pins, Mr. Branfield finds 40 cases where there are three chosen pins in a line plus a fourth pin to make a triangle. However, there are more than the four right angled isosceles triangles which he gives.

Each of the four possible positions for such triangles can be arrived at in three ways, as shown in our first figure:



The total is therefore 48, and not 40 as given. So we may expect $126 - 48 = 78$ genuine quadrilaterals.

In drawing the various quadrilaterals we agree on Mr. Branfield's total of 94. However, he accounted for a discrepancy of 8 by finding cases where the same set of four points could give rise to two different quadrilaterals. In fact there are further discrepancies. One of the 'm' quadrilaterals is shown in our second figure, and by using the same four pins, two 'o' quadrilaterals can also be formed.




In a similar way the other 9 'm' and 'o' quadrilaterals also fall into 3 groups of 3 using the same pins. Therefore there are 4 groups of 3 for 'm + o'. A similar situation also arises with n and p quadrilaterals:

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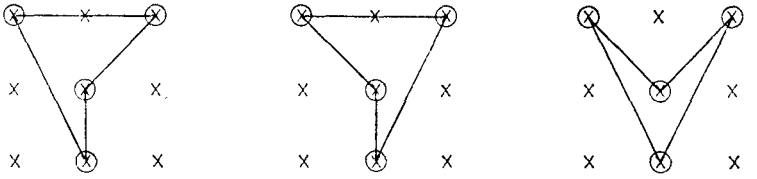

'n'(1st) 'n'(2nd) 'p'

There are therefore $94 - 8 \times 2 = 78$ quadrilaterals.

Yours faithfully,

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## REVIEW CORRECTION

To the Editor, *The Mathematical Gazette*

SIR,

I refer to the review of my *Advanced Level Applied Mathematics* on page 49 of Number 395 of the *Gazette*. The fourth edition was dated 1968, not 1969, and I am happy to state that the extensive revision required to convert to SI units was carried out for the fifth edition which appeared in 1970.

Yours faithfully,

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*Bithop's Stortford,*
*Herts.*

## CORRECTIONS

1. We regret that, because of failure of proofs to reach the author in time, there are several errors in the article on "The dissection of a circle by chords" in the last issue of the *Gazette* (May 1972). Correct statements of Theorems 2 and 3 on p. 115 are:

THEOREM 2. Let $n$ points be given in the plane, together with the $\binom{n}{2}$ straight lines through each pair of them. Then if no three of the points are collinear, no two of the lines parallel and no three of them concurrent except in the given points, the plane is divided into

$$3\binom{n}{4} + 3\binom{n}{2} - n + 1 \qquad \text{parts.}$$

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