

$a, b, c, d$  are positive integers and  $bc - ad = 1$ , prove that there is no fraction  $x/y$  between  $a/b$  and  $c/d$  such that  $y$  is less than  $b + d$ .

If

$$a/b < x/y < c/d,$$

then

$$ay/b < x < cy/d,$$

and

$$(ay + 1)/b \leq x \leq (cy - 1)/d,$$

so that

$$b + d \leq (bc - ad) y = y.$$

Yours, etc.,

R. C. LYNESS.

### SCHOOL CERTIFICATE MATHEMATICS.

To the Editor of the *Mathematical Gazette*.

SIR,—The Local Examinations Syndicate of the University of Cambridge have just issued a new Alternative Syllabus in Geometry and Trigonometry for the School Certificate Examination, copies of which may be obtained from Syndicate Buildings, Cambridge, on application. I have been instructed by the Committee responsible for the syllabus to ask for space in your columns to call attention to some points which they have in mind.

1. The courses leading up to School Certificate Geometry have been governed for twenty years by the agreement reached in or about 1923 by the Examining Bodies to adopt a uniform list of theorems. This followed reports issued by the Mathematical Association and the Association of Assistant Masters.

2. Although the time is now ripe for a change, the Syndicate recognise that no single Examining Body can hope to devise a syllabus that will be universally accepted. They have ventured to issue an alternative syllabus now because, unless some move is made during the war to meet the demand for (1) more trigonometry, (2) less memory work, (3) more three-dimensional work, mathematical teaching may get more and more out of step with the times.

3. The Committee acknowledge with gratitude the advice they received from members of the Teaching Committee of the Mathematics Association, and offer their apologies for giving so little time for discussion. They hope that by hastening the issue of the syllabus and so making possible its experimental adoption in a few schools, they are providing concrete material for discussion among members of your Association out of which a new agreed mathematical syllabus may emerge after the war.

4. In reducing considerably the number of theorems to be learned but retaining a fixed sequence over a small field, the Committee have been influenced not only by the need to make room for more trigonometry but also by a desire to give boys and girls an opportunity of appreciating the significance of a rational argument without being wearied and perhaps confused by having to learn a large number of formal theorems whose logical sequence has become somewhat obscured. The syllabus stresses the connection between geometrical facts and suggests that the standard form for riders should be "Assuming  $X$ , prove  $Y$ ".

My own opinion, based on experience of syllabus construction over the last fifteen years and shared by others on the Committee, is that we now need a permanent but fully representative body which could review School Certificate and Higher School Certificate Mathematics syllabuses from time to time in the light of experience and the emergence of applications in new fields.

Yours faithfully,

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(Assistant Secretary,

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