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REPLY TO A NOTE OF H. MINC

In the process of printing paper [1] a few mistakes found their way into the text and altered the sense of some assertions.

The correct wording of the theorem given in paper [1] and quoted by H. Minc in [2] is as follows:

Let matrix  $A = [a_{kl}]$  be symmetric and let it satisfy the following conditions:

$$(\alpha) \quad a_{ii} > \sum_{\substack{i=1 \\ i \neq l}}^n |a_{li}|,$$

$$(\beta) \quad a_{kl} \leq 0 \quad \text{for} \quad k \neq l,$$

( $\gamma$ ) in each row (column) of matrix  $A$  there are at least two elements different from zero.

Then an inverse matrix  $A^{-1}$  exists, all its elements being positive.

The wording of condition ( $\gamma$ ) is correct in the English and Russian summaries; in the Polish version a part of the text, from the word "stopnia" to " $= [a_{kl}]$ ", should be deleted. In the first line of the English summary the word "necessary" should be replaced by the word "sufficient", paper [1] being concerned with sufficient conditions, as stated above in the Russian summary. Moreover, in the relation " $a_{ii}^{(1)} = \dots$ " on p. 142 and in condition ( $\alpha$ ) the sign  $\geq$  should be replaced by the sign  $>$ .

The counterexamples given by H. Minc in [2] do not undermine the validity of the theorem in its correct wording given above. The first counterexample attacks the condition of necessity, while paper [1] deals only with the sufficient conditions of the existence of an inverse matrix (cf. the Russian summary). The second counterexample does not satisfy condition ( $\alpha$ ) of the theorem given above.

References

[1] T. Kaczorek, *O macierzach, których macierze odwrotne mają elementy dodatnie*, Zastosow. Mat. 5 (1960), pp. 141-148.

[2] H. Minc, *On matrices with positive inverses*, Zastosow. Mat. this volume, pp. 165-169.

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*REPLIKA NA NOTĘ H. MINCA*

STRESZCZENIE

Nota zawiera wyjaśnienia w sprawie głosu dyskusyjnego H. Minca ogłoszonego w niniejszym zeszycie *Zastosowań Matematyki*.

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*ЗАМЕЧАНИЕ ПО ПОВОДУ ЗАМЕТКИ Х. МИНЦА*

РЕЗЮМЕ

Заметка содержит объяснения по поводу дискуссионного выступления Х. Минца, опубликованного в настоящей тетради *Применений Математики*.

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