ON MATHEMATICAL PROBLEM

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This mathematical problem was stated in [1]. It was partially solved in [2]. We improve this result using the method [3].

Definition 1. [3]. *If $Ax \equiv F$ then x is said to be a solution of the equation*

$$Ax = F.$$

We propose

Definition 2. *If $Ax \sim F$ then x is said to be a generalized solution of the equation*

$$Ax = F.$$

Consider the problem

$$A^{p+q}x = B_{p+q}. \tag{1}$$

Theorem 1. *If $A \in L_{2,0}$ then the problem has a solution.*

Proof 1. *Uses the method of transformations [3, Chapter 2].*

Theorem 2. *If $A \in L_{2,2}$ then the problem has a generalized solution.*

Proof 2. *Uses the second method of transformations [3, Chapter 3].*

Hypothesis 1. *If $A \in L_{2,4}$ then the generalized solution is unique.*

A computer program to solve the problem if A is a matrix and B is a vector was implemented. It gave an approximate solution.

References

[1] Valiev S., Asad-zade T. (1991) New mathematical problem. *Abstracts of International conference "Mathematics and its new applications".* Southern University, Dagabad, pp. 64–65.

[2] Badamshin Sh., Alimoglu F. (2004) Book on mathematical problems. "Math-Science" Publishing House, Elmabad, 200 p.
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[3] Naryn uulu Ch. (2009) Mathematical method. *Eastern Mathematical Magazine*, vol. 9, no. 2, pp.120–129.