TASKS WITH BOOLE VARIABLES

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Application of mathematical methods to the decision of economic tasks consists of a few stages, and most difficult for students is the stage of drafting of mathematical model. Application of boole variables from one side substantial extends the circle of standard tasks, with other it is the cause of difficulty of transition from economic model to mathematical one.

To want of time we examine usually only one standard task with the use of boole variables. That does not allow understanding all advantages of introduction of such variables. At the same time, this class of tasks gives fine opportunities for development of skills of algorithmic and logical thought.

There is a class of tasks, where the necessity of introduction of boole variables is obvious. It is a task about appointments, a task about a backpack, etc. But there is a set of tasks in which it is necessarily to make an optimum choice on the great number of interdependent alternatives. It is tasks of planning of production with the permanent elements of expenses, a task of alternative production, a transport task with the fixed additional payment, a task about modernization of production, a task of optimization of capital investments, etc.

We suggest the next way for studying this theme. On a lecture the basic types of limitations, connected with the choice of alternatives, are examined in detail. On practical lesson a choice of restrictions for the various tasks is analyzed. And it is showing how the introduction of boole variables allows transforming into a task of linear programming the task, not being by this in initial statement. Each student must solve individual task, for which it is necessary to construct mathematical model and to find the decision by means of Excel.

In the report we suppose to offer a set of exercises to this theme.