

ON PELLUCID SOLVING OF NON-STANDARD MATHEMATICAL PROBLEMS COMPETITIVE

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This publication is intended for the master class. We are telling of tasks, each of which represents a certain, often complicated logical-mathematical intrigue and yet allow a clear, relatively simple solution. That is, a solution that is clear for grades of 5-11 respectively, of high school, we emphasize - clearly without lengthy calculations.

The material is taken from several sources: it is certainly the professional experience of the authors, is also well-known collections of numerous Olympiads, mathematical folklore and, finally, a popular project <http://www.diofant.ru/>, covering more, then 7 thousand participants from dozens countries (many tasks is invented by the participants themselves, or they are taken from various international sources).

Analyzing these materials, the authors consistently amazed at how the abundance of non-standard mathematical models can give a real life!

We are giving here the names of some of the models (which is most likely will not say anything now to the reader, but can show how large the set of real objects, admitting involvement in a rigorous mathematical model):

- Two skiers on rough terrain;
- Identify critical "storeys" of two glass beads;
- Some nonstandard logic problems;
- Transportation of pig iron (analysis of residues);
- Several examples of non-standard problems on the motion (with delays);
- Examples of non-standard problems with dice,
and many other original models.