BASIC PRINCIPLES REGARDING THE CREATIVE SOLUTION OF PROBLEMS

ABSTRACT.The aim of this paper is to illustrate three basic principles in solving creatively mathematical problems:

    a) the algorithmicity principle;

    b) the generality principle;

    c) the generalization principle.

The first principle claims for a solution to be clearly constructed and well ordered, step by step.This principle is generally itself a creative principle in solving mathematical problems, but its importance consists in the fact that it open the way for the next creative steps of a solution.

These creative steps are based on applying the generality and/or the generalization principle, respectively.

The generality principle assumes to adapt/construct/obtain only those methods able to solve a given problem, which could be

applied to other similar or kindred problems.

By applying the generalization principle in solving a problem, we try to obtain a more general statement of the initial problem, even new problems, by replacing a particular data or assumption by a general one(s).

By applying systematically one or both these two principles in solving problem we expect to help students to learn

-to analyse in detail the crucial moments and reasonings in the solution of a problem

-to discover the reasonings they can improve or generalize.

-to endow with generality attributes the used method(s).

-to discover the questions arising from the given problem and its solution.

-to formulate suitable new problems arising from the given problem.

An example as well as some references are finally given.

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