POSTMODERN FEATURES IN PROBLEM SOLVING

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Situation with the postmodernism is rather often strikingly similar to what we usually say about the future: we can not be sure we will hold on to our present holdings in the future and at the same time we fearlessly state what we will not have. Generally speaking, postmodernism in many areas proves to be a sort of real transition. These changes are not always very pleasant. In fact, sometimes they seem to be completely unacceptable. We may have the feeling that some modern or actual process firstly is taken under observation and only afterwards we may try to understand what might happen with it under real-life change of some essential circumstances.

Modern (math) problem solving usually means a clear presentation of question raised together with the honorable solutions which do not involve anything what would not be necessary for the understanding of the real content of the problem and the way it is solved.

In other words, we are trying to present the naked objective mathematical truth without additional details but otherwise everything must be well presented and possibly without any emotions.

By taking that for granted further on you may involve the psychology of one who is solving and especially having in mind one, who is eager to solve. More explicitly, you are making the content and even representation of solution of (math) problem more dramatic.

Let us regard the following three problems:

1. When a positive integer is increased by 10%, the result is another positive number whose digit-sum has decreased by 10%? Is this possible?

2. On their infrequent leisure time the immortal Bremen four – Donkey, Dog, Cat and Rooster divided the usual chess board into four equal parts and started examining one of these parts containing 16 fields (8 white and 8 black fields, colored in the usual chess order), i.e. a 4 x 4 square.

The zigzag-form path consisting of 4 white fields, one from each row, such that every pair of neighbouring fields share *only a common corner* was called by them a *Bremen path*. The musicians immediately started furious discussions about how many *Bremen paths* there are in that small 4 x 4 square. Patron of the Bremen city Roland gave evidence that they sat late and couldn‘t come to the common conclusion how many *Bremen paths* there are in that small 4 x 4 square.

Could you explain in an understandable way to that immortal Bremen four how many *Bremen paths* could be detected in that (rather small) 4 x 4 square?

3. Let a1, a2, …, an be distinct positive integers and let M be a set of n – 1 positive integers not containing s = a1 + a2 + … + an. A grasshopper is to jump along the real axis, starting at the point 0 and making n jumps to the right with lengths a1, a2, …, an in some order. Prove that the order can be chosen in such a way that the grasshopper never lands on any point in M.

Are these problems postmodern?

References:

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