There are questions with hidden answer, but without a way to find the answer

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Abstract

Re-proof of Gödel incompleteness theorem. I use no mathematical expressions.

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Due to the Incompleteness Theorems of Gödel [1], one can say that there might be true statements, which do not have valid proofs. One could think in this way also about the attempts to prove Fermat's Last Theorem outside the set theory methods. However, I was lucky to find such proof.

In school task-books, all problems have a solution. On the other hand, the universities are often teaching problems without known solutions (but with an unknown, hidden answer, e.g. we do not know whether the Twin Prime Conjecture is true or false, but there is a definite answer to it). While I was successful in searching for solutions to the Riemann, Goldbach, Twin Prime and ABC Hypotheses, I cannot yet find a solution to the Beal Conjecture. Maybe the Beal Conjecture does not have a solution, in other words: it has an answer that can not be reached on a logical path.

We have faced problems, which had no solution during the year 2020 AD. Let's say they are n out of N problems. Thus, we can estimate the number x of problems that have not found a solution between 2020 AD and 30 000 AD (and beyond): $0 < x/N < n/N$. By the definition of probability, the chance (looked at the end of 2019 AD) that a blindly picked problem has no solution is $p = x/N$. I argue that p cannot be zero if N is large enough. Here the set N contains the problems at the start of 2020 AD only. This number is a fundamental constant throughout all future. The x and n are sub-sets of N. In my interpretation of Gödel's theorem, this fact ($p \neq 0$) was first discovered by Gödel. But I can derive it in the following way:

1. There is a non-vanishing probability that some problems in N will not receive enough attention, that they will be too hard to approach, or that they are simply not important, not popular. Thus, $x \neq 0$.

2. Some hypotheses have a limited number of solutions, for example, two. But we don't know that. Having found these two solutions, we will look for the third. The probability of finding the third solution is less than 100 % even using unlimited resources and research time. The probability of finding solutions is not dictated by the order of the solutions found. Therefore, the probability of finding the very first solution is also less than 100 %. Since there are problems where the probability of finding a solution is less than 100 %, there are also problems where the number of possible solutions is zero [because of the definition of probability].

[1] Kurt Gödel, "Some basic theorems on the foundations of mathematics and their implications", in Solomon Feferman, ed., 1995. Kurt Gödel Collected Works, Vol. III, Oxford University Press, pp. 304–323.