Review of: "Impossibilities, mathematics, and logic"

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Potential competing interests: No potential competing interests to declare.

This paper might become an interesting overview for a broad audience to show the beauty and usefulness of mathematics. In order to achieve this, I think more examples of proofs should be given in detail and references should be given for all proofs mentioned, enabling the reader to find the proofs and to read more about the topics in question.

In the proof that the square root of 2 is irrational, it should be mentioned at the start of the proof that we may assume that p and q have no factor in common. Otherwise we do not get a contradiction.

For Cantor's diagonal argument at least a reference should be given, but maybe it is not too difficult to explain the proof in the paper. The insight is in the proof, so if the proof is not too complicated, it is better to present it.

I suggest to start the sentence “Another proof of impossibility is the proof by descent” at a new paragraph. Again, at least a reference to the proof should be given, possibly the proof itself. Again, a reference to the proof is missing here.

Also for the impossible constructions with compass and straightedge appropriate references should be given. The gap between “double” and “the volume” should be removed.

Finally, a serious mistake in the last claim of the paper: Godel's theorem only holds for (axiomatizable) formal systems containing Peano axioms for arithmetic; it is not true for arbitrary formal systems. Again, appropriate references to proofs of Godel's theorem should be given.