Cerebral Genus

Dead Duck or Phoenix?

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Abstract

I present an application of topology to the characterization of brain health.

1. Introduction

Recent studies suggest that one's life depends critically on the condition of their brain. We explore sufficient conditions to solve the following problem.

Problem 1. *Determine if your brain is unhealthy.*

The author decided to investigate this problem using topological methods when he learned[AW] that the word "topological" decomposes into "top" (head) + "o" (hole) + "logical" (smart).

2. Result

We use one of the most fundamental concepts of topology in order to solve the problem.

Definion 1. *The **cerebral genus** is the number of holes it has.*

Below is a necessary condition of a healthy brain.

Lemma 1. *[OH13] A healthy brain has a nonnegative genus.*

We use the well-known Positivity Lemma, stated above, in the main result.

Theorem 1. *[OH13] A positive cerebral genus g is a sign of an unhealthy brain.*

There is a safe proof, but I provide a constructive one below.

Proof. Carve a decently-sized hole in your brain, perhaps with a swift bullet. It is easy to see, say by asking your doctor, that you will die soon. □

3. Conclusion

The reader is encouraged to remain open-minded and attempt to disprove the theorem. The author offers $50 to the first reader who survives the attempt.

The health characterization of brains of genus 0 remains an open problem, as is the construction of jokes involving the phrases "pick your brain", "open minded", "closed minded".

References

[AW] Aaron Williams. Personal communication. Mar 15, 2017.

[OH13] Oscar Hernandez. Common Sense. 2013.