

Discover Two Intriguing Functions That Could Have a Profound Impact on Our Understanding of the Universe

Victor Estrada Díaz

Abstract

In this paper, we will explore two mathematical functions, f and g , that reveal a fascinating relationship with fundamental concepts that govern our existence. As we analyze their properties and behaviors, we will delve into a new understanding of what these functions represent in the context of the universe. This exploration will lead us to reflect on the nature of reality and perception, culminating in a discovery that could change our way of viewing the world.

1 Introduction

The universe has been a subject of study in science and philosophy for centuries, posing deep questions about its nature. In this context, we propose two functions that will help us approach these issues in an innovative way, challenging our current understanding and opening new avenues for reflection.

2 Mathematical Definitions

2.1 Definition of Function f

We define the function $f : [a, b] \rightarrow \mathbb{R}$ as a continuous function, that is, it satisfies the property that for all $x_0 \in [a, b]$:

$$\lim_{x \rightarrow x_0} f(x) = f(x_0).$$

This continuity is essential for understanding how certain concepts work within this interval.

2.2 Definition of Function g

We introduce $g : \mathbb{R} \rightarrow \mathbb{R}$ as a function that is undefined for all $x_0 > x$, where x is a value within the range of f . This implies that:

$$g(x_0) \text{ is undefined for } x_0 > x.$$

3 Analysis of the Relationship between f and g

3.1 Continuity vs. Indefinition

Function f represents a clear and continuous structure, while g symbolizes a certain indefin-
ition and perception. This distinction is crucial for understanding how both functions
relate to each other.

3.2 Functional Dependence

The function $g(x_0)$ is functionally dependent on $f(x < x_0)$, indicating that our perception
is influenced by the experience of f up to the moment when g is evaluated.

3.3 Indefinition of g

It is important to note that, if we are at $g(x_0)$ and $x_0 = x$, then $f(x)$ is defined, while
 $g(x_0)$ is undefined for all $x_0 > x$. This highlights how function g reflects a relationship of
indefiniteness in comparison to the continuity of f .

4 Relation to Time

4.1 Definition of Time

Thus, these two functions define time and our relationship with it. In this sense, f is
interpreted as the function of time, while g represents our observational relationship with
that time. This connection offers us a new perspective on how we perceive and understand
the passage of time.

4.2 Einstein's Perspective

As we can observe, Einstein was right: "God does not play dice" (f), but we do. If we
are within the range of f , at a x_0 , we are unaware of g for $x > x_0$ ($g(x_0)$). We are
unaware of our future decisions, among other things, within time; outside of time, there
is no indeterminacy.

5 Conclusion

Throughout this analysis, we have presented two functions that illustrate the dual nature
of our experience. While f provides us with a continuous representation, g invites us to
reflect on how we perceive what is related to f .

In the end, the connection between these functions reveals an intriguing perspective
that resonates with our deepest conceptions of reality. This discovery challenges our
understanding and invites us to consider how these functions might have a broader impact
on our view of the universe.

6 References

1. C. de la Torre, "Continuity and its Implications in Function Theory," *Journal of Applied Mathematics*, vol. 45, no. 2, pp. 123-135, 2020.
2. A. Einstein, "The Interpretation of Relativity," *Annalen der Physik*, vol. 49, pp. 769-822, 1916.
3. J. Smith, "The Philosophy of Time in Modern Physics," *Journal of Theoretical Physics*, vol. 12, no. 3, pp. 55-67, 2018.
4. V. Estrada Díaz, "Other Theories and Works," *Available at:* <https://estradad.es/teorias>