Journal of Humanistic Mathematics

Volume 7 | Issue 1 January 2017

Every Minute of Your Life Has Been Interesting

Susan D'Agostino
Southern New Hampshire University

Recommended Citation

D'Agostino, S. "Every Minute of Your Life Has Been Interesting," *Journal of Humanistic Mathematics*, Volume 7 Issue 1 (January 2017), pages 117-118. DOI: 10.5642/jhummath.201701.09 . Available at: https://scholarship.claremont.edu/jhm/vol7/iss1/9

JHM is an open access bi-annual journal sponsored by the Claremont Center for the Mathematical Sciences and published by the Claremont Colleges Library | ISSN 2159-8118 | http://scholarship.claremont.edu/jhm/

Every Minute of Your Life Has Been Interesting

Susan D'Agostino

Mathematics Department, Southern New Hampshire University, USA
s.dagostino@snhu.edu

Synopsis

In this short paper, we prove that every minute of your life has been interesting. We also provide four exercises intended to solidify understanding of this result, including one exercise related to the torturously boring family road trip you took as a child.

In this paper, we aim to show that every minute of your life has been interesting. In order to do so, we need the following definitions:

Definition 1. *Let S be a set. An* **order** *on S is a relation $<$ on S such that:*

- *If x and y are elements of S, then one and only one of the following statements is true:*

  (i) $x < y$;

  (ii) $x = y$;

  (iii) $y < x$.

- *If x, y, and z are elements of S, $x < y$, and $y < z$, then $x < z$.*

Definition 2. *An* **ordered set** *is a set S on which an order is defined.*

Before proceeding to the proof of our claim, the reader is reminded that the Well-Ordering Principle states that every nonempty set of positive integers has a least element. We now present the main result of this paper:

Theorem 1. *Every minute of your life has been has been interesting.*

Proof. Let M be the set of all minutes of your life. Then M may be represented as an ordered set of positive integers. Let N be a subset of M such that N contains all of the minutes of your life that are not interesting.

We proceed by contradiction. That is, we assume that $N \neq \emptyset$ (i.e. N is nonempty). By the Well-Ordering Principle, there exists a minute n from set N such that n is the smallest element of N. But since this makes n the earliest non-interesting minute of your life, n is actually interesting. Thus n is not an element of set N. But this is a contradiction. Therefore, we conclude that every minute of your life has been interesting. QED □

Exercises:

1. Prove that the summer you were ten years old and took a torturously boring cross-country road trip with your family was interesting.
2. Prove that every hour you have yet to experience will be interesting.
3. Have all of the instants of your life been interesting? Provide a proof or justify why not. (Hint: The set of all instants of your life is an uncountably infinite set.)
4. Can you use the ideas in Theorem 1 to prove that all people in the world happy? If so, prove it. If not, explain why.