Kurt Godel
the incompleteness of axioms for arithmetic
Life

- Kurt Gödel was born on April 28, 1906 in what was then the Austro-Hungarian city of Brünn, and what is now Brno in the Czech Republic.
- At age eight, after reading a medical book, Gödel became convinced that he had a weak heart, a possible complication of the rheumatic fever that he had recovered from at age six.
- Got married to Adele Nimbursky Porkert, September 20, 1938
- Gödel's father Rudolf August was a businessman, and his mother Marianne was a well-educated and cultured woman to whom Gödel remained close throughout his life, as witnessed by the long and wide-ranging correspondence between them.
Mathematical Accomplishments

- the incompleteness of axioms for arithmetic

  “The system of Presburger arithmetic consists of a set of axioms for the natural numbers with just the addition operation (multiplication is omitted)”

- relative consistency of the axiom of choice

The axiom of choice is an axiom in set theory with wide-reaching and sometimes counterintuitive consequences.
The Incompleteness Of Axioms For Arithmetic

Gödel’s proof was over the axioms of Peano Arithmetic (P.A.). Assume all statements over \( N \):

- For any \( x \), \( x=x \)
- For any \( x, y \), if \( x=y \) then \( y=x \)
- For any \( x, y, z \), if \( x=y \) and \( y=z \) then \( x=z \)
- For any \( a, b, a \in N; a = b \rightarrow b \in N \)
- \( 0 \in N \)
- For every \( n \in N, S(n) \in N \)
- For every \( n \in N, S(n) \neq 0 \)
- For \( \{m, n\} \in N, S(m) = S(n) \rightarrow n=m \)
- If \( 0 \in K \) and for all \( n \in N, n \in K \) then \( S(n) \in K \)

\( \infty + 1 \)

MATH is AWESOME
Mathematical Accomplishments: Importance

- “Allows you to be able to find real numbers in equations“Peano arithmetic, can directly express statements about natural numbers.”

- The reason why it is important is due to hurt allowing us to be able to understand the equations easier and being able to deem them
Kurt Gödel was born on April 28, 1906 in what was then the Austro-Hungarian city of Brünn.

Ford model T was send to market and was the largest produced vehicle ever created 15 million cars.

Married to Adele Nimbursky Porkert

"in any consistent axiomatic mathematical system there are propositions that cannot be proved or disproved within the system and that the consistency of the axioms themselves cannot be proved."

Description countries gather together to create the allies and the axis powers. He was alive for both wars being able to see what occurred in both and how rough life was.

The cause of his death was due to Malnutrition due to him only eating food that his wife would prepare. Once he was hospitalized because she had a stroke he refused to eat any food and died due to him not eating any food.
Sources

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- https://www.exploratorium.edu/complexity/CompLexicon/godel.html