1125-VB-516 **Chandra Kethi-Reddy*** (chan.dra@knights.ucf.edu), 2122 Westbourne Dr, Oviedo, FL 32765. *Resolving the Unsolvable and Graphing the Infinite.* Preliminary report.

Infinite numbers are reinterpreted as numbers which count and differentiate the "speeds" at which non-finite sets produce new mathematical entities, i.e., the "stream rate" of infinite sequences. This makes the infinite more intuitive and concrete to analyze. I provide a new interpretation of why the continuum hypothesis is independent from ZFC. On a related note, I argue it is possible to construct a procedure akin to a Dedekind cut using logarithms to generate infinities between the aleph-numbers. Log-log graphs are repurposed to create a new coordinate system that extends the Cartesian version by tiling it, allowing one to graph new functions, including those with surreal and surcomplex values. The theory of paraconvergent series is also introduced, with a conjecture that every divergent series has a paraconvergent solution. A paraconvergent solution is one that, like Grandi's series, provides a solution to non-converging infinite series. I challenge the implicit assumption that divergent series use an infinite number of binary addition operations. I argue instead that they only use a single infinitary operation. Thus, the study of algebraic structures built with infinitary operations can lead to considerable progress in the general analysis of functions. (Received September 07, 2016)