

Averages and Means in Elementary Calculus

Michael W. Ecker, Pennsylvania State University Wilkes-Barre Campus

Abstract

Recurring student errors that surprisingly yield correct answers provide an opportunity for all to learn. This article highlights a few explorations dealing with averages and means, starting with an example from calculus. From the various confusions over averages in particular, one can glean insight into when and why certain functions behave as they do.



Michael W. Ecker is an associate professor of mathematics at Pennsylvania State University's Wilkes-Barre campus. Having taught college mathematics since 1972, he received his PhD in mathematics from the City University of New York in 1978 under Harry Rauch. As founder of The AMATYC Review problem section in 1981, a position he held until 1997, he has posed and solved hundreds of problems in over a dozen mathematics journals. He created such computer columns as "Mathematical Recreations" in Byte in 1984, "Recreational Computing" in Popular Computing in 1983, and the same in Creative Computing in 1985. From January 1986 to January 2007 he wrote, edited, and published his own newsletter REC (Recreational & Educational Computing), featuring the interplay of mathematics, computers, and recreations, along with his unifying concept of mathematical black holes. He is the author of over 500 newsletters, columns, reviews, and articles, many computer related, as well as five books and/or solutions manuals. His other passions include racquetball, sweets, and wife Renee.