

Introducing Calculus Students to Asymptotic Methods

Atika Benaddi, Xiaoxuan Ji, Philippe Savoye, and Xia Zhou,
Commonwealth University–Mansfield

In this article, we describe how calculus students can be introduced to asymptotic methods by using asymptotic series to numerically estimate the zeros of a polynomial. The surprising accuracy of the approach is highlighted.

Keywords: approximation, calculus, series, asymptotic convergence, zeros



Atika Benaddi is an assistant professor at Commonwealth University (CU) of Pennsylvania. She received her PhD from Kansas State University in 2019. Since joining the faculty at CU–Mansfield in Fall 2019, she has been passionately teaching economics, accounting, and mathematics courses. Beyond academia, she enjoys traveling, engaging in outdoor activities, and, most importantly, spending quality time with her beloved cat.

Xiaoxuan (Shelly) Ji is an assistant professor at the Commonwealth University of Pennsylvania Mansfield campus. She received her PhD from Southern Illinois University Carbondale in 2019. Shelly teaches a variety of accounting courses. She is a CPA and loves numbers.



Philippe Savoye has taught on the Mansfield campus of Commonwealth University for a long time. Since 1995, he has often served as a volunteer mathematics instructor at various public universities in Bolivia and Peru during summer breaks. He enjoys listening to Andean music in the company of his cats.

Xia Zhou taught business courses at Mansfield University for four years, following two years of teaching at Abraham Baldwin Agricultural College. She is passionate about teaching and dedicated to her students' success. Outside the classroom, she enjoys the arts, particularly museums and concerts.

