An integral calculus approach to the Basel problem

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Time: 12:00 - 12:50 pm EDT
Location: Zoom, ID: 935 1032 7072

In this talk we present two proofs for the famous Basel problem which concerns Euler’s formula for $\zeta(2)$. These two approaches are based on the papers of Stark (1978) and Moreno (2016).

The main ingredients of these two proofs of $\zeta(2) = \frac{\pi^2}{6}$ are the first and the second mean value theorems for integrals which are taught in any introductory analysis course. If time allows, using similar ideas, we will also give a brief account for Euler’s other two formulas such as $\zeta(4) = \frac{\pi^4}{90}$ and $\zeta(6) = \frac{\pi^6}{945}$.

SPEAKER(S) FOR NEXT WEEK:
Ed Southall

Cezar graduated with a PhD from Pitt under Piotr Hajlasz and William C. Troy with a thesis in number theory, analysis and special functions. Also, he was the Pitt Putnam coach between 2013-2017. Currently, he is a postdoctoral fellow at Texas Tech University working on some problems regarding the special values of L-functions (Riemann and multiple zeta). Moreover, he has been the TTU coach for the Putnam competition since 2018.