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Using disks as models for proofs of series.

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Summary: Exploring and deriving proofs of closed-form expressions for series can be fun for students. However, for some students, a physical representation of such problems is more meaningful. Various approaches have been designed to help students visualize squares of sums and sums of squares; these approaches may be arithmetic-algebraic or combinatorial in nature, or they may involve mathematical induction. In the activity described in this article, students use balls and disks to prove the general formulas for sums of squares and cubes. (ERIC)

Classification: I34 U64

Keywords: mathematical logic; high school students; secondary school mathematics; core curriculum; state standards; series; sums of squares; sums of cubes; manipulative materials

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