

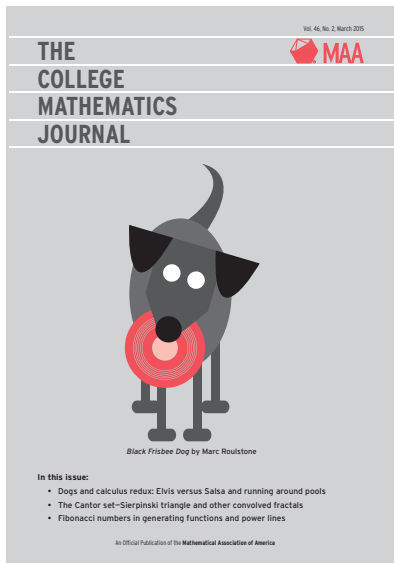
Teachers and the MAA (Mathematical Association of America)

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Saint Peter's University & *The College Mathematics Journal*

PCMI Five Minute Short, 2 July 2017

NCTM : K-12 teachers :: MAA : higher ed. faculty

- Meetings:
 - July or August MathFest (Chicago), 2500 attendees
 - January Joint Mathematics Meeting with AMS (San Diego), 7000
 - 29 sections around the country, one or two meetings each year, often with student programs
- Contests: AMC, Putnam
- Publications: books, journals



- Most accessible of the three MAA journals (most *Best Writing On Mathematics* selections)
- Student-authored papers, middle school 2015 Pólya
- Based on undergraduate curriculum, overlap with secondary topics
- Subscription by MAA membership, special teacher & school rates; JSTOR shelf <http://about.jstor.org/rr>

CMJ Award Winning Articles for Free!




<https://www.maa.org/programs/maa-awards/writing-awards/george-polya-awards>

- To Be (a Circle) or Not To Be?
- Square-Sum Pair Partitions
- Locating Unimodular Roots
- The Man Who Found God's Number

Classroom Capsules and Notes

<http://www.maa.org/programs/faculty-and-departments/classroom-capsules-and-notes>

A free collection of over 600 Classroom Capsules, Proofs Without Words, Notes, and short articles organized by course and topic.



The screenshot shows the MAA (Mathematical Association of America) website. The header includes the MAA logo, the tagline "PARTICIPATE. INVESTIGATE. EDUCATE.", and navigation links for HOME, CAREERS, CONTACT US, and LOGIN. A search bar is located in the top right. Below the header is a red navigation bar with buttons for LOGIN, JOIN, SHOP, and GIVE. The main navigation menu includes Membership, Publications, Meetings, Competitions, Community, Programs, News, and About MAA. The "Programs" section is expanded, showing a sidebar with links to Students, High School Teachers, Faculty and Departments, Curriculum & Department Guidelines & Recommendations, Course Communities, Classroom Capsules and Notes, and Browse. The main content area displays the breadcrumb "Home » Programs » Faculty and Departments » Classroom Capsules and Notes" and the title "Classroom Capsules and Notes". Below the title is the text "Capsules By Courses. We are organizing the capsules into courses, when possible using the same topics as are used in Course Communities. So far we have organized capsules for the following courses:" followed by a list of courses: One-Variable Calculus, Sequences and Series, Multivariable Calculus, Ordinary Differential Equations, Linear Algebra (marked as New), Number Theory, and Probability. At the bottom of the content area, it says "You may select topics within each course."

Browse Classroom Capsules and Notes

You can filter the list below by selecting a subject category from the drop-down list below, for example by selecting 'One-Variable Calculus'. Then click the 'APPLY' button directly, or select a subcategory to further refine your results.

Displaying 1 - 10 of 224

Filter by subject

One-Variable Calculus

✓ - Select -

APPLY

Do Dogs Know Related Rates In...

This capsule discusses the mathematics chosen by the dog turned out to ones th...

...leap-off point

Partial Fraction Decomposition k...

This capsule introduces a straightforward by long division. The obtained partial fra...

...specific forms

Do Dogs Know Calculus of Varia...

This article generalizes a problem of dog...

...ulus of variation.

An Elegant Mode for Determining...

A technique is introduced for the purpos...

...of finding the relative maximum values of the probability density function. The

Browse Classroom Capsules and Notes

You can filter the list below by selecting a subject category from the drop-down list below, for example by selecting 'One-Variable Calculus'. Then click the 'APPLY' button directly, or select a subcategory to further refine your results.

Displaying 1 - 10 of 67

Filter by subject

Sequences and Series

✓ - Select -

- Series: General
- Tests For Convergence and Divergence
- Special Series: General
- Special Series: p-series
- Special Series: Alternating Series
- Special Series: Geometric Series
- Special Series: Harmonic Series
- Sequences: General
- Approximations: pi, e, natural logarithms
- Special Sequences
- Rearrangement

APPLY

A Geometric Look at Sequences

This capsule investigates the sequences of terms, the author can obtain a rate of co

Another Look at Some p-series

Certain p-series are the focus of this capsule, convergence or divergence of the p-series

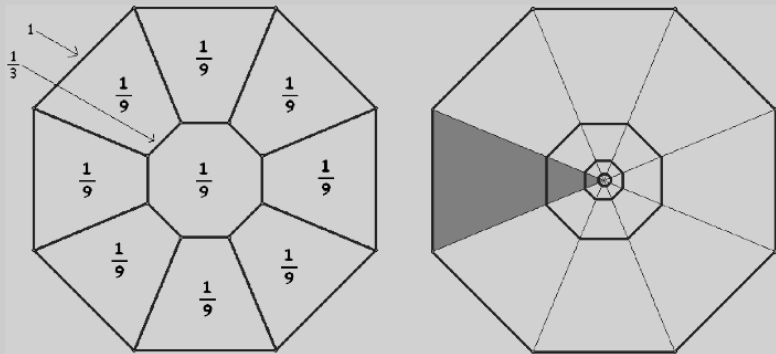
Proof Without Words: Geometric Series Formula

The result $\frac{1}{n} + \frac{1}{n^2} + \frac{1}{n^3} + \dots = \frac{1}{n-1}$ is illustrated for $n = 9$ and the remark is made that a similar construction shows the result...

Stirred, Not Shaken, by Stirling's Formula

In this note an elementary proof of Stirling's asymptotic formula for $n!$ is given.

Proof Without Words: Geometric Series Formula



$$\frac{1}{9} + \frac{1}{9^2} + \frac{1}{9^3} + \cdots = \frac{1}{8}$$

The general result $\frac{1}{N} + \frac{1}{N^2} + \frac{1}{N^3} + \cdots = \frac{1}{N-1}$ can be proved using this construction with a regular $(N-1)$ -gon (or even a circle).

Other Teacher-MAA connections

- AMC 8/10/12 problems mapped to CCSS-M
<http://www.maa.org/math-competitions>
- Books and DVDs for teachers (including Tom Garrity in three “debates” with Williams colleague Colin Adams)
<http://www.maa.org/programs/high-school-teachers/maa-publications-for-high-school-teachers>
- Special Interest Groups (SIGMAAs)
<http://www.maa.org/community/sigmaas>
 - Math Circles for Students and Teachers
 - Teaching Advanced High School Mathematics
 - Inquiry Based Learning, Statistics Education, ...
 - Arts, Biology, History, Philosophy, Industry, ...