


Volume 9, Issue 3.1415

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Fun Fact!

If you got bored one (really) long winter and decided to add up 1 and 1/2 and 1/3 and 1/4 and 1/5 etc. to see how big the final result would be, it would turn out that the answer is more than 10, more than 100, and even more than 100000. But if you added up 1^2 and $(1/2)^2$ and $(1/3)^2$ and $(1/4)^2$ and $(1/5)^2$ etc. the final result is $\pi^2/6$.

Go Team π !

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Our Newsletter

The Pi-tiscus—Pi-cayune

It's worth every penny!

It's Pi Year!

Pi Day (March 14 for 3-14) is always special, but for those countries that use the month-day-year format, this is an especially festive year because it was 3-14-15! And so we are dedicating (almost) the entire issue to this number, which we know by π , although that particular symbol is only about 300 years old (and, ironically, pronounced with a long e sound in Greek anyway, like the "pi" part of "pita bread").

The mathematical constant is the number of times that the diameter of a circle can fit around the circumference, since it turns out that number is the same no matter how large or small the circle is. But because math is AWESOME, this constant appears in a number of other places, too. Just like Godzilla.



Godzilla enjoys a refreshing beverage.

Bartholomaeus Pitiscus

Bartholomaeus Pitiscus (August 24, 1561 – July 2, 1613) was a German mathematician, astronomer, and theologian credited with coining the term "trigonometry".

Pitiscus became the tutor for Frederick IV when the latter was 10 years old, and as a result, Pitiscus worked closely with Frederick throughout his reign as Elector Palatine.

In 1595, Pitiscus published his most well-known work, *Trigonometria*, introducing the word "trigonometry", and covering plane and spherical trigonometry, as well as trig tables for all 6 trig functions, accurate to 5 or 6 decimal places.



3 Alum at the Joint Meetings!

At the Joint Mathematics Meetings in San Antonio, Texas this January there were not just one, not just two, but THREE of our alumna in attendance: **Sara Reynolds ('08)**, **Jolie Roat ('09)**, and **Caitlyn Parmelee ('10)**.

Sara gave a talk on “Pre-Copulatory Sexual Cannibalism: effects of voracity, growth, and maturation time,” while Jolie gave a talk “On the classification of rank 4 fusion categories” and both talks were awesome. Caitlyn just came to hang out, but rumors have it that she'll give a talk next year. All three are in the finals years of doctoral programs in Applied Mathematics, Mathematics, and Mathematics (respectively).

Yousuf George and **Heather Ames Lewis** were also at the meetings and everyone went out to dinner together...no small feat since that involved a scenic route through darkened streets and ended up in a warehouse like restaurant where the servers kept singing Happy Birthday to people named Oscar. However, a good time was had by all – good enough that no one remembered to take any pictures to commemorate the event. The next meeting is in Seattle, Washington next January, for those making travel plans already.

1 Art Piece at the Joint Meetings

It's math and knitting – what could be better? Heather Ames Lewis ran across Illusion Knitting (knitting that looks like stripes when viewed straight on, but has a pattern – in this case, a diamond – when viewed obliquely) on the site <http://www.illusionknitting.woollythoughts.com/>.



Heather knit a flexagon that could be folded perpendicular to the stripes to show hidden sides, cycling through three colors, and it was accepted into the Mathematical Art Exhibit in San Antonio.



4 (+2) Alumni at Career Night

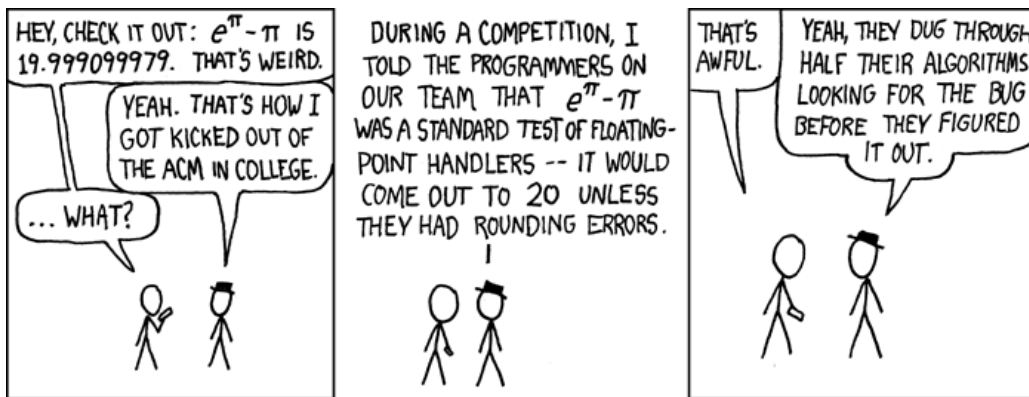
On February 26, six math alumni returned to Nazareth for the Math Club's Career Night. They represented a variety of careers and offered advice on finding and succeeding in a career. Several dozen students attended and enjoyed Dinosaur BBQ while asking questions. Our alumni were very generous with their time, answering the questions for more than two hours.



Math alumni at Career Night: (L to R) Frankie Tangredi ('14), Dyan Verschage ('14), Caitlin Marcellus ('02), Pam (Welch) Host ('08), CJ Traub ('11), Alexa Courtney ('14).

1 Comic

from xkcd.com



5 Inductees at the Award Ceremony

On Saturday, March 28, the Math Department held its annual Awards Ceremony to recognize our students' many achievements and induct several of them into Pi Mu Epsilon, the math honor society. Our guest speaker this year was Mark McKinzie from St. John Fisher College, who spoke on "Geometry in the *Sulba Sutras*".

The inductees to PME this year were **Paxton Brewer ('16)**, **Cody Hunt ('16)**, **Courtney Malia ('16)**, **Stephanie Mumpton ('16)**, and **Kelsey Quigley ('16)**.

We also awarded three departmental honors. The Outstanding Senior Award, for distinguished academic achievement, was given to **Andy Lund ('15)**, as was the Sister Dorothea Kunz Award for service to the department.



The Brauer Award for excellence in pursuit of teaching certification was given to **Quintin Smith (Dec. '15)**.



Finally, **Melissa Reeves ('15)** was presented with the School of Education's Outstanding Adolescent Teaching Award in Mathematics.



It can be of no practical use to know that Pi is irrational, but if we can know, it surely would be intolerable not to know.

E.C. Titchmarsh, quoted in *Mathematical Maxims and Minims*, by N. Rose



This newsletter has been brought to you by the number “e” (2.71828...), which is one of the most well-known number in mathematics, as well as the most frequently occurring letter in the English language.

- The tangent line to the function $y = e^x$ where it crosses the y-axis has a slope of exactly 1.
- If you invest \$1 at 100% annual interest compounded not monthly, not daily, but continuously, then you will have e dollars at the end of one year (in contrast to the \$2 you’d have without the compounding).

$$e^n \approx \sqrt{2\pi n} \frac{n^n}{n!} \quad \text{where}$$

$$n! = \int_0^\infty e^{-x} x^n dx$$

Pi(e) Contest

Andy Lund ('15) won for Best Taste, fulfilling his prediction of “Now that Dyan isn’t here, I have a chance.”



			9		4			
	3						9	
1				6				2
			4		2			
6				3				4
	5						4	
			7		5			

Pi Day Sudoku!

Fill in the grid so that 1–9 each appear exactly once in each row, column, and block. In addition, each pink region must contain exactly the digits in 3.1415926.

Problems



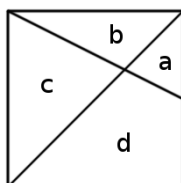
Solutions to Problems 9.2:

9.2.1: 415,800

9.2.2: many solutions; (0,0), (±3/4,9/16) is a small example

9.2.3: 918,273

Problem 9.3.1: This unit square is divided into four regions by a diagonal and a line that connects a vertex to the midpoint of an opposite side. What are the areas of the four regions?



Problem 9.3.2: A can of olives originally contained both black and green ones, but someone has been eating them, and you don’t know the colors of the 14 olives that remain. You remove 7 at random and find that they’re all green. If the odds of this happening were exactly 50-50, what are the colors of the remaining 7 olives?

Problem 9.3.3: Evaluate

$$4 \arctan\left(\frac{1}{2}\right) + 4 \arctan\left(\frac{1}{3}\right)$$

Send solutions, ketchup, articles, alumni news, alumni vs, jumpropes, jigsaw puzzles, or suggestions to Heather (hlewis5@naz.edu) or Matt (mkoetz1@naz.edu).