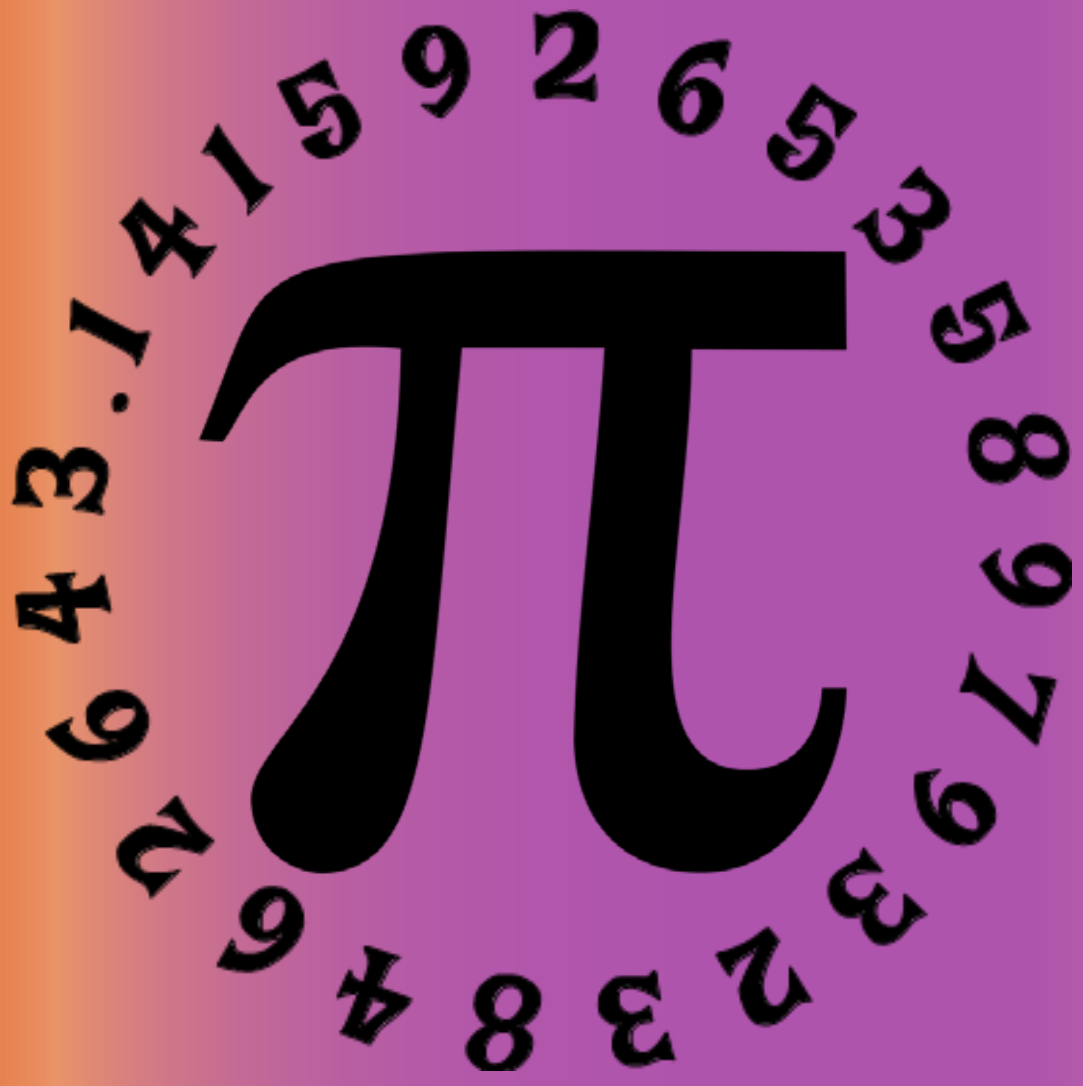
KAMSC's 84 Steps



Pi Day Edition

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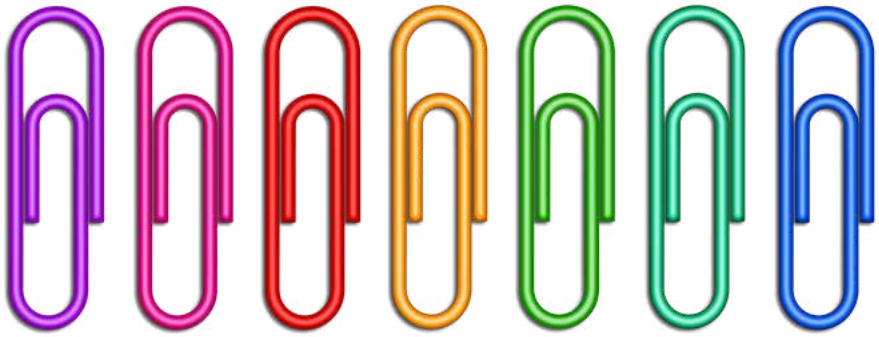
Letters from the Editors

Hello 84 Steps readers!

We are so excited to bring you this special pi day edition of the 84 Steps. We'd like to thank our 2020-2021 columnists for working so hard to make this edition come to life! As we finish up the 3rd quarter, remember to relax, enjoy spring break, and have a great rest of the school year. You can do it! As always, enjoy this edition of 84 Steps! I hope you're hungry because we've got a lot of pi(e) for you to eat. Seriously though, there's more than a few pie recipes in here.

Love,
Shelby Alexander and Genevieve Kim



A Pi(e) Recipe
By Anna Buck

Hello everyone! What better way to celebrate 3/14 than with pie! It's circular, versatile, and tasty too. Here's a recipe that I thought sounded easy enough, hope you enjoy!

Chocolate Pie

Ingredients:

- 1 1/4 cups granulated sugar
- 3 1/2 tablespoons cocoa powder
- 2 large eggs
- 1/4 cup unsalted butter, melted
- 5 ounce can evaporated milk
- 1 9-inch pie crust
- whipped cream, for serving

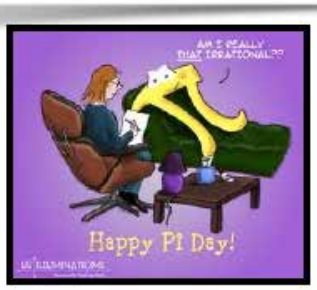
Instructions:

1. Preheat oven to 350 degrees F.
2. In a large bowl, whisk together the sugar and cocoa powder. Vigorously whisk in the eggs, butter, and evaporated milk until completely combined and smooth (batter will be thin.)
3. Pour batter into the pie crust and bake for about 50-55 minutes or until the filling sets and there is a thin crust on the top. (It might be slightly jiggly in the center, but that's okay - as it sits and cools, it will set up more.)
4. Remove from oven and let cool completely.
5. Slice and serve with a little whipped cream and chocolate shavings!

*Recipe from Amy on Bellyfull

Pi Comics

By Simar Bhatia



HAPPY PI DAY!!

Two Pies for Pi
By Tavishi Budagavi

Although Pi Day may be about the number pi, a fun and tasty way to celebrate it is by baking pies! I've got two pie recipes that will not only help with your celebration but also say goodbye to winter and welcome spring!

Pumpkin Pie

Ingredients:

- ½ cup of cold milk
- 1 (4.5/8 ounce) package of vanilla flavor instant pudding
- Pie filling mix (6 serving size)
- 1 teaspoon pumpkin pie spice
- 1 cup canned pumpkin

Instructions:

1.In a large bowl beat milk, pudding mix, and spice with wire whisk for 1 minute (The mixture should be thick!)
2. Whisk in your canned pumpkin.
3. Stir in your whipped topping and spread in crust.
4. Refrigerate at least 2 hours or until set. Feel free to garnish it with what you like! It should serve about 8 people

Lemon Pie

Ingredients:

- 1¾ cup graham cracker crumbs
- ¼ cup sugar
- 6 tbsp butter, melted
- 1¼ cups fresh lemon juice (6–8 lemons)
- 2 14 oz cans of sweetened condensed milk
- 8 large egg yolks
- 2 tbsp finely grated lemon zest
- 8 oz cool whip (or 1 package)

Instructions:

1. Grease pie pan.
2. Mix the graham cracker crumbs, sugar and melted butter.
3. Press graham cracker mixture into the bottom and up the sides of a 9 inch pie pan to make the crust.
4. Preheat oven to 325 degrees, and in a medium sized bowl, whisk together the lemon juice and sweetened condensed milk. In a large bowl, beat the lemon zest and egg yolks on high until pale.
5. Add sweetened condensed milk mixture to egg mixture and pour filling into the pie crust.
6. Bake the pie for about 25 minutes. The edges should be set, and the center should shake slightly when the pie is moved.
7. Cool for an hour, then refrigerate or freeze for at least 6 hours, depending on preference. It should last a week and yield 12-15 slices!

A Poem for Pi

By Samadhi Attanayaka

Three point one four one five nine,
I think Pi is truly divine.

Find it in music, pennies, and more--
People use Pi more than ever before!

To find my dear friend take these two parameters.
Divide the circumference by the diameter,

Then you will find an ongoing number
And all I hope is that you will remember:

Nowhere else will you find another
For Pi is a value like no other.

The Pi Song

By Shelby Alexander and Maicee Bishop

Oh, dear readers, there was once a time before COVID where 9th grade students would come together in Mrs. Kalnins' classroom to provide a pi day event like none other before. Each student would bring in one thing to contribute: pies, pi recitations, videos, crafts, and the best of all, performances. Now, dear readers, I'd like to think one performance will forever live in my classmates hearts (shoutout to the Organ group of 2018): the pi song co-written and performed by myself and the beautiful, Maicee Bishop. Maicee played guitar, I played some cheap piano recorder I found at Cracker Barrel, and we both sang. Enjoy the lyrics below... and if any of you would like to see a recording, admission is $20 because that thing is embarassing. ;-)

...

Once Upon a Time there was a huge, lovely pi.
This wasn't no strawberry, rhubarb, or shoofly.
No, this pi is important in our everyday lives.
It's called "3. 1 4 1 5... Nevermind!"

The paparrazi came! And he did not know why
He went around the world to find the meaning of pi
All he found was Circumference on his journey to the past
And he still does not know why he really has to last

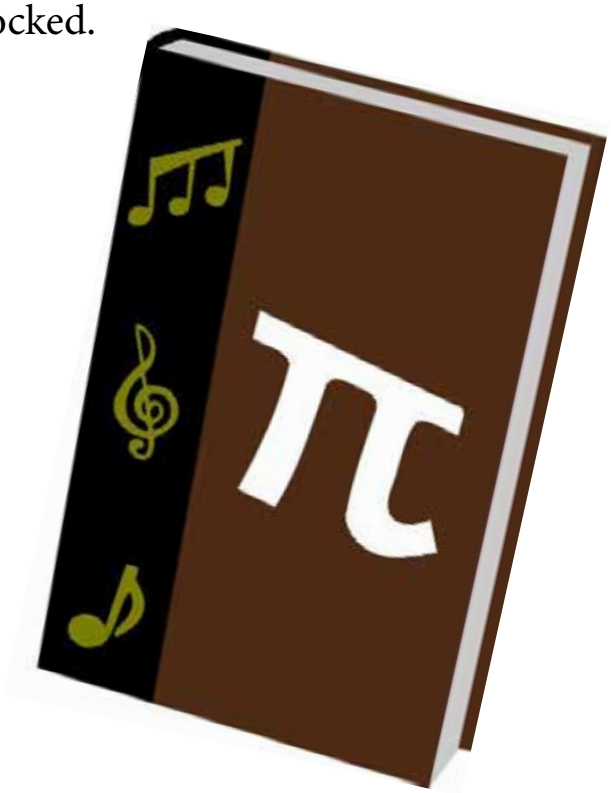
He decided to go to where his roots are claimed
On his birth certificate he found his name.
He said, "Wow, I forgot why my name is so grand!
Why it's so long, I don't understand."

Once Upon a Time there was a huge, lovely pi.
This wasn't no strawberry, rhubarb, or shoofly.
No, this pi is important in our everyday lives.
It's called "3. 1 4 1 5 Nevermind!"

He chose to change his name and head off to New York
To find true love… and other stuff
He met a lovely lady, her name Diane.
But he had no idea about her secret plan

Let's move on to Diane. Let's move on to Diane.
Or should I say: Diameter. Diameter. Diameter.

Pi found out one day and was completely shocked.
Diane found out the other day and her heart unlocked.
They made a vow to have no more lies.
And then they had a daughter. Surprise!
Her name was: radii



Everybody!

Once Upon a Time there was a huge, lovely pi.
This wasn't no strawberry, rhubarb, or shoofly.
No, this pi is important in our everyday lives.
It's called "3. 1 4 1 5 Nevermind!"

Pi still doesn't know why his name is so long.
But he does have a sense that he belongs.
Now he has a family and they love him too.
The world is so much brighter; the skies are blue.

Instrumental + Number Retell

3. 1 4 1 5 9 2 6 5 3 5 8 9 7 9 3 2 3 8 4 6 2 6 4 3 3 8 3 2 7 9 5 0 2 8 8 4 1 9 7 1 6 9 3 9 9 3 7
5 1 0 5 8 2 0 9 7 4

It's called "3. 1 4 1 5 Nevermind!"

Rational Book Recommendations for the Irrational Number Lover

By Genevieve Kim

The average KAMSC student doesn't have many extra hours with which to read books for leisure. Many may also balk at the prospect of spending any hard-earned down time reading a book about math. But in the spirit of Pi Day, maybe you should re-consider. Math is a huge part of KAMSC - otherwise it would be called KASC, which has less of a ring to it after all - but it is also a part of everyday life. So, why not learn to love it? Whether your relationship with math is tenuous at best or has been going strong since elementary school, I hope these books can help you see the art of numbers in a new and rosier light.

How to Bake Pi: An Edible Exploration of the Mathematics of Mathematics by Eugenia Cheng

On Pi Day, this book is especially fitting, but its witty take on mathematics can be enjoyed year-round. Cheng combines baking and real-life stories in her book to make the math accessible to the general audience. The math in the book focuses mostly on category theory, but the book itself focuses on presenting the mathematics on a silver platter of enthusiasm with anecdotes to spare.

The Joy of x: A Guided Tour of Math, from One to Infinity by Steven H. Strogatz

How does math pull the strings behind the scenes of the world we live in? The "aha" moment in math is one of my favorite things about it, and author Steven Strogatz apparently agrees, because The Joy of x is simply rife with them. Another witty and entertaining book about math, which is NOT the oxymoron the average highschooler may claim it to be, The Joy of x connects math to situations we never would guess to be linked to it and shows how math truly makes the world go around.

Eight Lessons on Infinity by Haim Shapira

Aimed at enlightening the general public in a funny and inspiring way, Eight Lessons on Infinity introduces mathematicians and their problems then dives into the paradoxes of Achilles and the gods, heaven and hell, and the "Infinity Hotel," just to name a few. With his writing, Shapira shows how curiosity, thoughtfulness, and determination to understand the world are what really make math an art form, and make mathematicians the intellectual artists that sketch humanity's understanding of life as we know it.

Fermat's Enigma: The Epic Quest to Solve the World's Greatest Mathematical Problem by Simon Singh

Fermat's Enigma: The Epic Quest to Solve the World's Greatest Mathematical Problem tells the story of the quest of mathematicians around the world and through the centuries to prove Fermat's Last Theorem. Genuinely heartfelt and surprisingly compelling, this book describes the ups and downs of the the people who dedicated themselves to those frustratingly brief notes in the margins for the three and a half centuries it remained unsolved.

Whether you're looking to see math through a new lens or just to polish your own, these beautiful and enlightening works are well worth the time. If nothing else, at least you'll learn something new. You've already read this far… what's a few hundred pages more?

Top 10 Things to do on Pi Day

By Claire Keegan

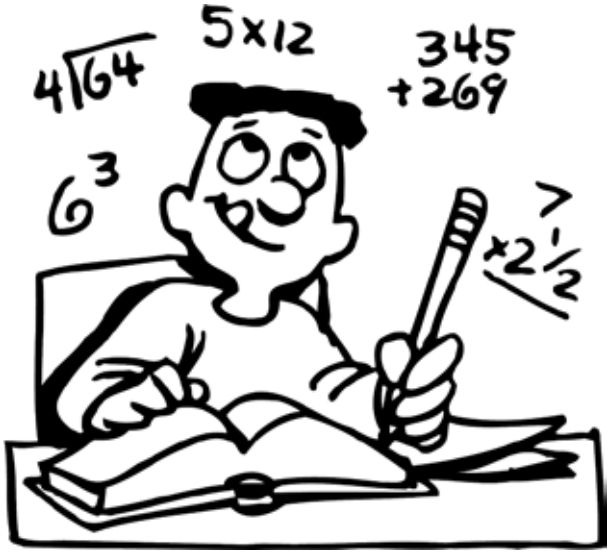
Being a KAMSC student, you and your classmates are most likely naturally excellent, extremely dedicated students (NERDS for short and yes, I made this up) and one of the best ways to display your nerdiness is to celebrate Pi day! Here is a list of the top 10 activities to do on Pi day.

10. This is an obvious one, but one of the best by far, eat some pie! If you don't like pie, eat cookies shaped like pi (or a circle). If you aren't into either of those, try some pi-ickles, pi-tato chips, pi-napple, or pi-retzles.

9. Do your math homework. I know you probably have some math homework that should get done, so why not make it a celebration! There is no better day to do math homework than on a day set aside to celebrate math.

8. Memorize as much of Pi as you can and have a competition with your friends and family. This is an easy activity through facetime and brings a friendly sense of competition. The winner gets the biggest slice of pie!

7. If none of the pi related food items sounded appealing, maybe your neighbors will think otherwise! Bake a few pies for your neighbors and help spread some Pi day cheer!



6. If you've had a bit too much pie, maybe go for a stroll. A... 3.14 mile walk ;-) would be the perfect amount to give you room for another slice of pie afterward.

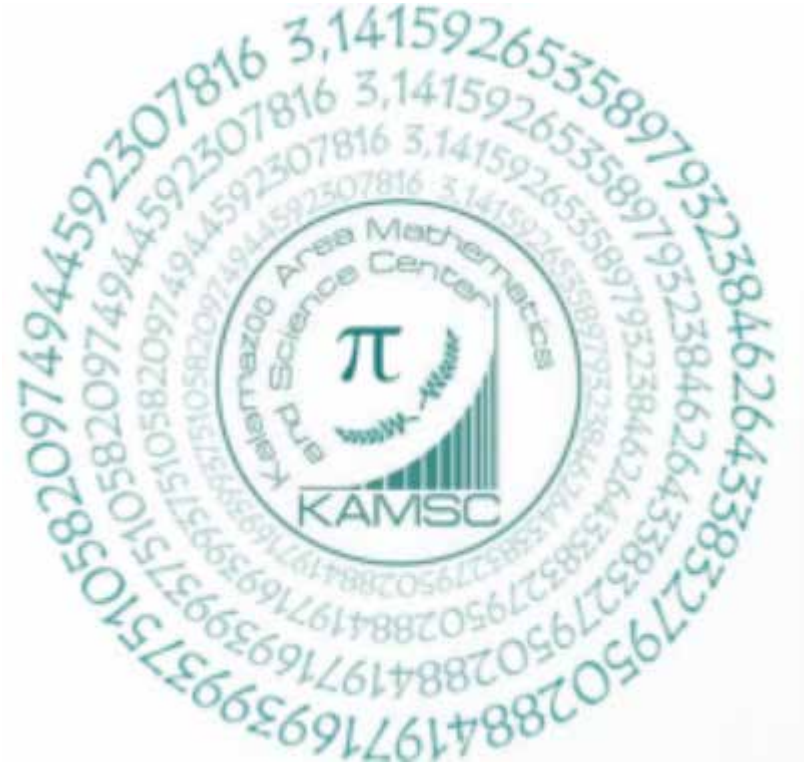
5. Watch a math movie! Some movies include: Gifted, The Theory of Everything, Hidden Figures, x+y, and more! I am sure some of your teachers will have recommendations as well. After all, they were once naturally excellent really dedicated students too!

4. If you enjoy writing poetry try a Pi-ku in a 3-1-4 syllable pattern. Share it with your friends after the pi reciting competition!

3. Tell some math jokes! Examples: What do you get when you take the sun and divide its circumference by its diameter? Pi in the sky. Or, Why is Ms. Radian such a good reporter? She covers the story from every angle.

2. Look into a long list of the digits of pi (maybe the one you used to memorize from) and see if you can find any of your favorite numbers, phone numbers, or birthdays in it!

1. The best thing to do on Pi day is, of course, to go to the Pi day celebration at KAMSC! It is going to be so much fun to see your friends (from a safe distance of course) and possibly eat some yummy treats Hope to see you there, as Mr. Cardwell would say "Be there or be a 4-sided equilateral."



A Complex Pi(e) Made Simple

By Keshavi Dave

Pi! Such a complex number with so many digits, it deserves its own special day! Of course, we don't draw the line at puns and irony. So for this addition, we have to make some pie! Since the number itself is already so complex, I opted for an easier rendition of apple pie that's easy for anyone to make, enjoy!

Ingredients:

Crust:

- 1 refrigerated pie crust (pre-made, keeping it easy!)

Filling:

- 6 cups thinly sliced peeled apples
- ¾ cup sugar
- 2 tbs all-purpose flour
- ¾ tsp ground cinnamon
- ¼ tsp salt
- ⅛ ground nutmeg
- 1 tbs lemon juice

Instructions:

1. Preheat oven to 425°F and prebake the crust (if you have a prebaked crust).
2. Mix the filling ingredients in a large bowl and fill into 9" pie pan.
    a. There is no right order in which the ingredients need to be mixed, but I suggest you start with the apples (peeled & washed) since they take the longest, and slowly mix in the rest.
3. Once you put the filling into the pan, you can cover the top of the pie with whatever crust you have left (this is optional!)
4. Bake 40 to 45 minutes or until apples are tender or the crust is golden.
    a. Cover edge of crust with 2 to 3 inch wide strips of foil after first 15 to 20 minutes of baking to prevent excessive browning.
5. Let it cool for at least 2 hours before eating and enjoy!

Dear Math

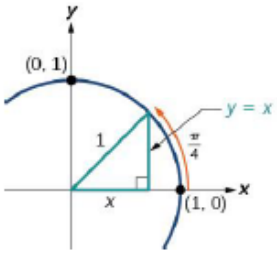
By Benjamin Whitsett

Dear Math:

In previous letters, I've mentioned pi several times (every time). I know you're probably bored of hearing me rant about pi, but I'm going to try to get it ~~all~~ *most* of the way out of my system with this letter. Pi appears in *sooo* many places, I'll struggle to fit the fascinating ones on this page. Let's give it a try, though, shall we?

The most simple and obvious way to find pi is to check the circle. We can approximate a circle by a polygon with enough sides, as shown below. As the number of sides increases, we gradually hone in (both on upper and lower bounds) towards the proper ratio of perimeter (circumference) to diameter. Similar approximation can be achieved by dividing the area by the square of the "radius" of the limiting polygons.

My next approximation of pi takes a bit more calculus (but we can mostly skip over that part). Since the tangent (slope) of $\pi/4$ radians yields 1 (see left), and because in calculus we can write the inverse tangent function as $\arctan(x) = x - {}^{x^3}/_{3} + {}^{x^5}/_{5} - {}^{x^7}/_{7} + \cdots$, we can evaluate pi as $4 * \arctan(1)$, using the infinite sum to generate the approximation.



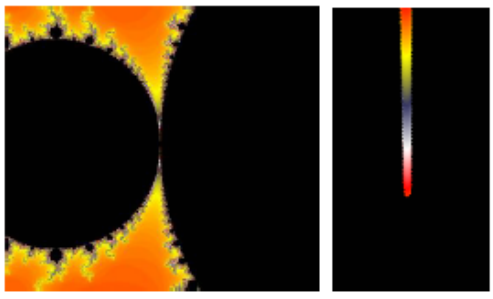
That's pretty much all of the not-so-confusing derivations of pi, but there are a lot of other fun ones, several of which are listed below.

$$ {}^{\pi}/_{4} = 1 - {}^{1}/_{3} + {}^{1}/_{5} - {}^{1}/_{7} + \cdots $$

$$ {}^{\pi^2}/_{6} = {}^{1}/_{1^2} + {}^{1}/_{2^2} + {}^{1}/_{3^2} + {}^{1}/_{4^2} + \cdots $$

$$ {}^{4}/_{\pi} = 1 + {}^{1^2}\Big/_{(1 + {}^{3^2}/_{(1 + {}^{5^2}/_{(1 + \cdots)})})} $$

I'll mention just one more pattern (this is probably my favorite), which involves the Mandelbrot set. The Mandelbrot Set counts the number of iterations of one specific function applied at a point until the f(x) yields a point outside the circle of radius 2. As one moves down the arm at x = -0.75 with a very small y-value, the product of the y-value and the number of Mandelbrot iterations tends towards pi! (That's an exclamation, not a factorial) The small y multiplied by the large iteration count just so happens to give us pi. That's *quite* impressive.



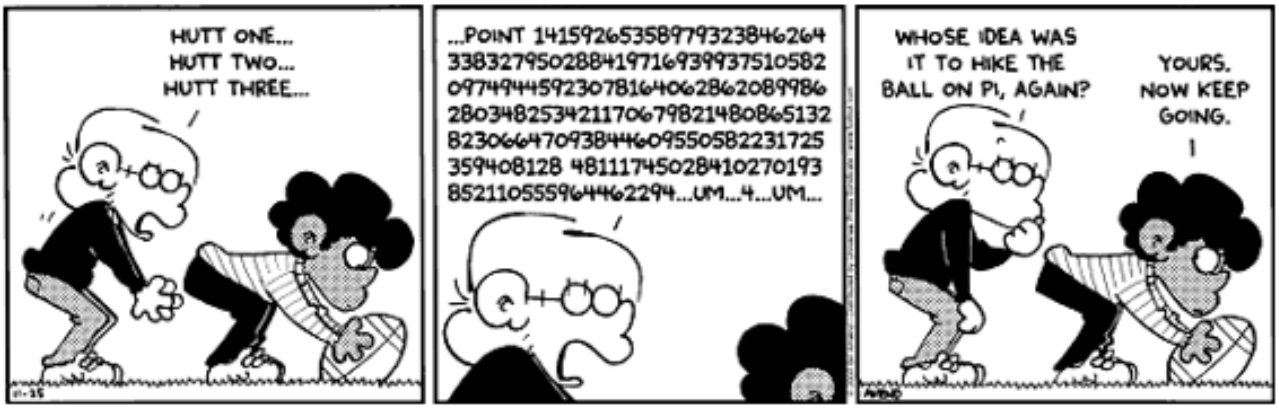
Enjoying pi,

Benjamin Whitsett

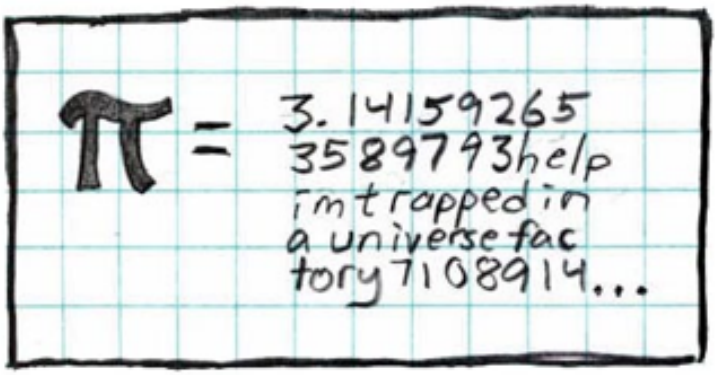
More Pi Comics

By Anna Buck

FOXTROT **BY BILL AMEND**



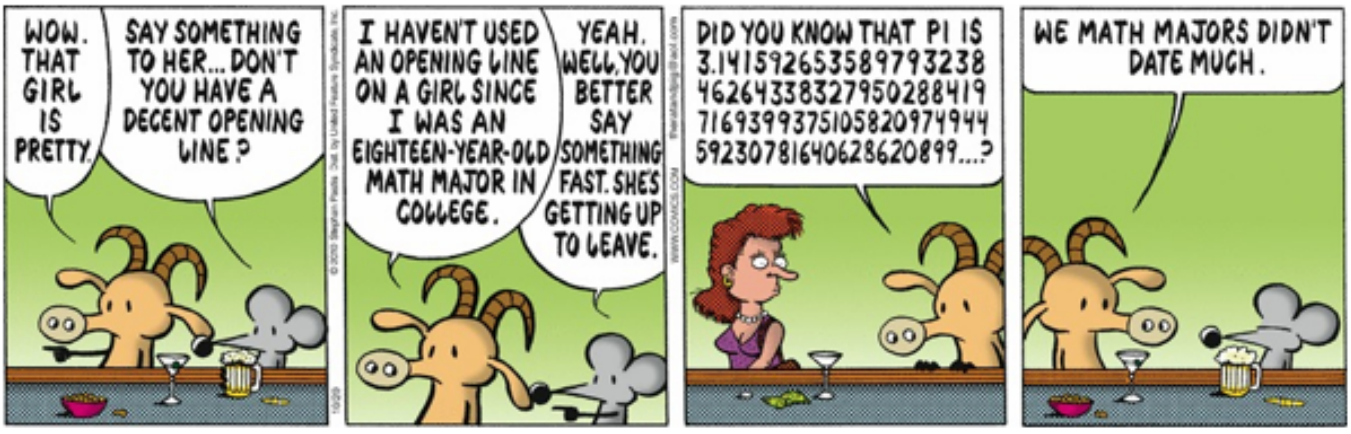
xkcd **BY RANDALL MUNROE**



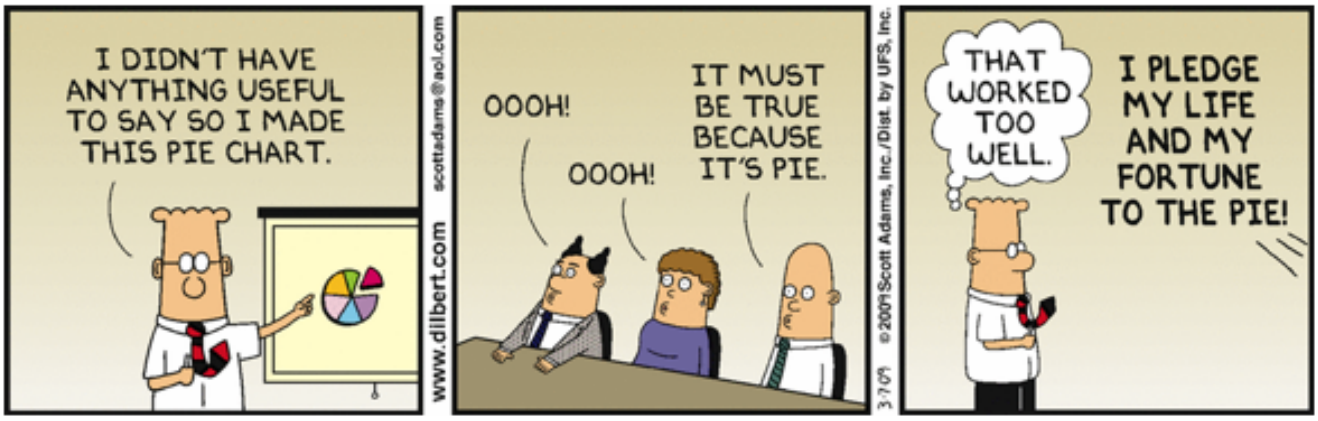
SELF PORTRAIT BY CAFEPRESS

PEARLS BEFORE SWINE **BY STEPHAN**

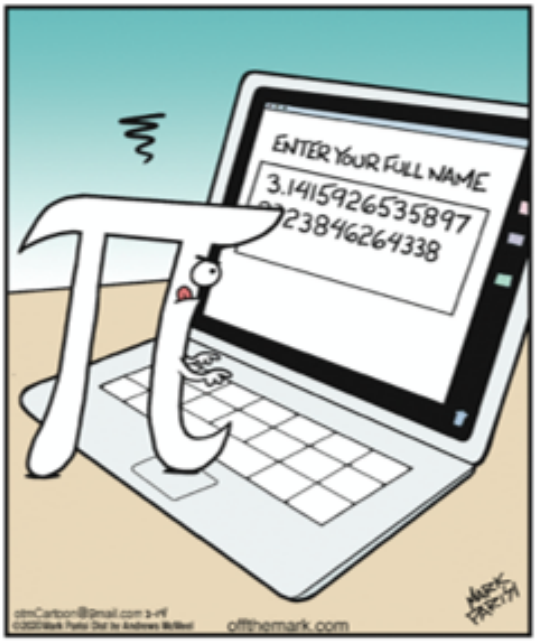
PASTIS



DILBERT **BY SCOTT ADAMS**



OFF THE MARK **BY MARK PARISI**



Word Search

By Fayyaz Razi

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Words:

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Hey KAMSC students!

We love being the editors for 84 Steps, but we can't do it without you. If you'd like to help us make every edition full of interesting articles, come write with us! You can write just once, or a few times, or in every edition. If you want to write in every edition, you can even contact us about being added to our list of columnists, which you can put on your college applications. If you want to write with us, or you're even considering it, just email kamsc84steps@yahoo.com, or talk to Shelby Alexander or Genevieve Kim.

Sincerely,
The Editors

Thank you to Our Contributors!

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Acknowledgements

Thanks to our advisor, Mr. Sinclair.
Thanks to Dr. Tanoff for his support.