

*What's Purple and Commutes?*  
A Collection of Jokes for Mathematicians and  
Others Who Like Math

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# Preface

A good mathematical joke is better, and better mathematics, than a dozen mediocre papers.

— J. E. Littlewood, *A Mathematician's Miscellany*, 1953.

The words of the great Professor J. E. Littlewood succinctly describe the spirit of this book. Herein you will find a collection of mathematical jokes. One immediate problem with this collection of jokes is the “phantom copyright” issue. It is often extremely hard to determine who originally created the jokes, who made variations and embellishments, etc. I will cite who created a joke when it is clear who did so. Most jokes are copied so often that finding the original author is next to impossible [2]. I make no claim that any of the jokes are of my own creation. In fact, none are of my creation. My role has simply been to compile these joke in one place for the enjoyment of everyone. If you feel your copyright has been violated by the informal circulation of this manuscript, please contact me and we will discuss how to remedy the situation.

With all that nasty business behind us... Enjoy!

Marcus Emmanuel Barnes  
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# Chapter 1

## Question and Answer

**Q:** What do you call a man who spent all summer at the beach?

**A:** A tangent.

---

**Q:** What do you say when you see an empty parrot cage?

**A:** Polygon.

---

**Q:** What do you call a crushed angle?

**A:** A Rectangle.

---

**Q:** What did the Italian say when when the witch doctor removed the curse?

**A:** Hexagon.

---

**Q:** What is the shortest mathematical joke?

**A:** Let  $\epsilon < 0$ .

---

**Q:** What did the little acorn say when he grew up?

**A:** Geometry.

---

**Q:** What do you call an angle which is adorable?

**A:** Acute angle.

---

**Q:** What has three feet and one leg?

**A:** A yard. stick.

---

**Q:** What tool do you use in algebra?

**A:** Multi-pliers!

---

**Q:** What do you use to tie up a package?

**A:** A chord.

---

**Q:** What months have 28 days?

**A:** All of them.

---

**Q:** What do you call a fierce beast?

**A:** A line.

---

**Q:** Who was the first math student?

**A:** Add-em.

---

**Q:** What is 2000 pounds of laundry?

**A:** Washington.

---

**Q:** What goes up and never goes down?

**A:** Your age

---

**Q:** What do you get when you cross a calculator and a friend?

**A:** A friend you can count on.

---

**Q:** What did the tree say to the mathematician?

**A:** Gee, I'm a tree.

---

**Q:** Who invented the Round Table?

**A:** Sir Cumference.

---

**Q:** Why don't Integers make good teachers?

**A:** They are too negative.

---

**Q:** Who invented fractions?

**A:** Henry the 1/8th.

---

**Q:** What did one math book say to the other?

**A:** I've got a problem. book!math

---

**Q:** Why did 8 times 8 go to the store?

**A:** To buy Nintendo 64.

---

**Q:** Why was six afraid of seven?

**A:** Because seven ate nine.

---

**Q:** How does a cow add?

**A:** With a cow-culator.

---

**Q:** What is a forum?

**A:** Twoun + twoun.

---

**Q:** What kind of snake is good at math?

**A:** An adder.

---

**Q:** What do you get when you cross an elephant and a mountain climber?

**A:** It's undefined, since the mountain climber is a "scaler".

---

**Q:** How many seconds are there in a year?

**A:** "Twelve. January second, February second, March second, ..."

---

**Q:** What will a logician choose: a half of an egg or eternal bliss in the afterlife?

**A:** A half of an egg! Because nothing is better than eternal bliss in the afterlife, and a half of an egg is better than nothing.

---

**Q:** How do hearing impaired people greet one another?

**A:** They sine waves. (For a microwave you just use your pinky.)

---

**Q:** What did the zero say to the eight?

**A:** Nice belt!

---

**Q:** Why did the man sleep with a ruler?

**A:** To see how long he could sleep.

---

**Q:** Did you hear the one about the statistician?

**A:** Probably...

---

**Q:** Why did the cube cross from the second to the third dimension?

**A:** The second dimension was too square.

---

**Q:** Do you know why they never have beer at a math party?

**A:** Because you can't drink and derive... .

---

**Q:** Did you hear about the teacher who was arrested trying to board an airplane with a compass, a protractor and a calculator?

**A:** He was charged with carrying weapons of math instruction.

---

**Q:** What do you get when you add 2 apples to 3 apples?

**A:** A senior high school math problem.

---

**Q:** To what question is the answer "9W."

**A:** "Dr. Wiener, do you spell your name with a V?"

---

**Q:** To what question is the answer "Dr. Livingstone, I presume."

**A:** "What is your full name, Dr. Presume?"

---

**Q:** How many times can you subtract 7 from 83, and what is left afterwards?

**A:** I can subtract it as many times as I want, and it leaves 76 every time.

---

**Q:** Why couldn't the Möbius strip enroll at the school?

**A:** They required an orientation.

---

**Q:** Why did the chicken cross the Möbius strip?

**A:** To get to the other... er, um... .

---

**Q:** Why did the chicken cross the Möbius strip?

**A:** To get to the same side.

---

**Q:** What is the world's longest song?

**A:** "Aleph-nought Bottles of Beer on the Wall."

---

**Q:** Why do Computer Scientists get Halloween and Christmas mixed up?

**A:** Because  $\text{Oct. } 31 = \text{Dec. } 25$ .

---

**Q:** Did you hear the one about the statistician?

**A:** Probably....

---

**Q:** Why did the mathematician name his dog "Cauchy"?

**A:** Because he left a residue at every pole.

---

**Q:** What is the integral of "one over cabin" with respect to "cabin"?

**A:** Natural log cabin + c = houseboat.

---

**Q:** What keeps a square from moving?

**A:** Square roots, of course.

---

**Q:** What's purple and commutes?

**A:** An abelian grape.

---

**Q:** What's purple, commutes, and is worshipped by a limited number of people?

**A:** A finitely-venerated grape.

---

**Q:** What's is lavender and commutes?

**A:** An abelian semigrave.

---

**Q:** What is purple and all of its offspring have been committed to institutions?

**A:** A simple grape: it has no normal subgrapes.

---

**Q:** What's purple, round, and doesn't get much for Christmas?

**A:** A finitely presented grape.

---

**Q:** What's an abelian group under addition, closed, associative, distributive, and bears a curse?

**A:** The Ring of the Nibelung.

---

**Q:** What do you call a broken record?

**A:** A Decca-gone.

---

**Q:** What do you call a teapot of boiling water on top of Mount Everest?

**A:** A high-pot-in-use.

---

**Q:** How can you tell that Harvard was layed out by a mathematician?

**A:** The div school is right next to the grad school....

---

**Q:** What's nutritious and commutes?

**A:** An abelian soup.

---

**Q:** Why is it that the more accuracy you demand from an interpolation function, the more expensive it becomes to compute?

**A:** That's the Law of Spline Demand.

---

**Q:** What's hot, chunky, and acts on a polygon?

**A:** Dihedral soup.

---

**Q:** What do you get when you cross 50 female pigs and 50 male deer?

**A:** One hundred sows-and-bucks.

---

**Q:** What's sour, yellow, and equivalent to the Axiom of Choice?

**A:** Zorn's lemon.

---

**Q:** What's is brown, furry, runs to the sea, and is equivalent to the Axiom of Choice?

**A:** Zorn's lemming.

---

**Q:** What's is green and homeomorphic to the open unit interval?

**A:** The real lime.

---

**Q:** What did the circle say to the tangent line?

**A:** "Stop touching me!"

---

**Q:** How many topologists does it take to change a light bulb?

**A:** It really doesn't matter, since they'd rather knot.

---

**Q:** What's yellow, linear, normed, and complete?

**A:** A Bananach space.

---

**Q:** What's non-orientable and lives in the sea?

**A:** Mbius Dick.

---

**Q:** What do you call a young eigensheep?

**A:** A lamb, duh!

---

**Q:** What's the value of a contour integral around Western Europe?

**A:** Zero, because all the Poles are in Eastern Europe. Addendum: Actually there ARE some poles in Western Europe, but the are removable! numbers!zero

---

**Q:** What is a topologist?

**A:** Someone who cannot distinguish between a doughnut and a coffee cup.

---

**Q:** Why didn't Newton discover group theory?

**A:** Because he wasn't Abel.

---

**Q:** What do you get if you cross an elephant and a banana?

**A:**  $|elephant| \cdot |banana| \cdot \sin \theta$ .

---

### **How many... to change a light bulb?**

**Q:** How many mathematicians does it take to change a light bulb?

**A:** None. It's left to the reader as an exercise.

**A (alternate):** None. The answer is intuitively obvious.

---

**Q:** How many numerical analysts does it take to change a light bulb?

**A:** 3.9967 (after six iterations).

---

**Q:** How many mathematical logicians does it take to change a light bulb?

**A:** None. They can't do it, but they can easily prove that it can be done.

---

**Q:** How many classical geometers does it take to change a light bulb?

**A:** None. You can't do it with a straight edge and a compass.

---

**Q:** How many analysts does it take to change a light bulb?

**A:** Three. One to prove existence, one to prove uniqueness and one to derive a nonconstructive algorithm to do it.

---

**Q:** How many number theorists does it take to change a light bulb?

**A:** I don't know the exact number, but I am sure it must be some rather elegant prime.

## Chapter 2

# Odds and Ends [for now]

A somewhat advanced society has figured how to package basic knowledge in pill form.

A student, needing some learning, goes to the pharmacy and asks what kind of knowledge pills are available. The pharmacist says “Here’s a pill for English literature.” The student takes the pill and swallows it and has new knowledge about English literature!

“What else do you have?” asks the student.

“Well, I have pills for art history, biology, and world history,” replies the pharmacist.

The student asks for these, and swallows them and has new knowledge about those subjects.

Then the student asks, “Do you have a pill for math?”

The pharmacist says “Wait just a moment”, and goes back into the storeroom and brings back a whopper of a pill and plunks it on the counter.

“I have to take that huge pill for math?” inquires the student.

The pharmacist replied “Well, you know math always was a little hard to swallow.”

---

A promising PhD candidate was presenting his thesis at his final examination. He proceeded with a derivation and ended up with something like:

$$F = -MA$$

He was embarrassed, his supervising professor was embarrassed, and the rest of the committee was embarrassed. The student coughed nervously and said “I seem to have made a slight error back there somewhere.”

One of the mathematicians on the committee replied dryly, “Either that or an odd number of them!”

---

### How do they prove that all odd integers higher than 2 are prime?

- **Mathematician:** 3 is a prime, 5 is a prime, 7 is a prime, and by induction - every odd integer higher than 2 is a prime.
- **Physicist:** 3 is a prime, 5 is a prime, 7 is a prime, 9 is an experimental error, 11 is a prime,... .
- **Engineer:** 3 is a prime, 5 is a prime, 7 is a prime, 9 is a prime, 11 is a prime,... .
- **Programmer:** 3's a prime, 5's a prime, 7's a prime, 7's a prime, 7's a prime,... .
- **Salesperson:** 3 is a prime, 5 is a prime, 7 is a prime, 9 – we'll do for you the best we can,... .
- **Computer Software Salesperson:** 3 is prime, 5 is prime, 7 is prime, 9 will be prime in the next release,... .
- **Biologist:** 3 is a prime, 5 is a prime, 7 is a prime, 9 – results have not arrived yet,... .
- **Advertiser:** 3 is a prime, 5 is a prime, 7 is a prime, 11 is a prime,...  
Lawyer: 3 is a prime, 5 is a prime, 7 is a prime, 9 – there is not enough evidence to prove that it is not a prime,... .
- **Accountant:** 3 is prime, 5 is prime, 7 is prime, 9 is prime, deducting 10% tax and 5% other obligations.
- **Statistician:** Let's try several randomly chosen numbers: 17 is a prime, 23 is a prime, 11 is a prime... .
- **Psychologist:** 3 is a prime, 5 is a prime, 7 is a prime, 9 is a prime but tries to suppress it,... .

---

## The Dictionary: what mathematics professors say and what they mean by it

- **Clearly:** I don't want to write down all the "in-between" steps.
- **Trivial:** If I have to show you how to do this, you're in the wrong class.
- **It can easily be shown:** No more than four hours are needed to prove it.
- **Check for yourself:** This is the boring part of the proof, so you can do it on your own time.
- **Hint:** The hardest of several possible ways to do a proof.
- **Brute force:** Four special cases, three counting arguments and two long inductions.
- **Elegant proof:** Requires no previous knowledge of the subject matter and is less than ten lines long.
- **Similarly:** At least one line of the proof of this case is the same as before.
- **Two line proof:** I'll leave out everything but the conclusion, you can't question 'em if you can't see 'em.
- **Briefly:** I'm running out of time, so I'll just write and talk faster.
- **Proceed formally:** Manipulate symbols by the rules without any hint of their true meaning.
- **Proof omitted:** Trust me, It's true.

---

## HOW TO PROVE IT

- **proof by example:** The author gives only the case  $n = 2$  and suggests that it contains most of the ideas of the general proof.
- **proof by intimidation:** "Trivial."
- **proof by vigorous hand-waving:** Works well in a classroom or seminar setting.
- **proof by cumbersome notation:** Best done with access to at least four alphabets and special symbols.

- **proof by exhaustion:** An issue or two of a journal devoted to your proof is useful.
- **proof by omission:** “The reader may easily supply the details. The other 253 cases are analogous... .”
- **proof by obfuscation:** A long plot-less sequence of true and or meaningless syntactically related statements.
- **proof by wishful citation:** The author cites the negation, converse, or generalization of a theorem from the literature to support his claims.
- **proof by funding:** How could three different government agencies be wrong?
- **proof by eminent authority:** “I saw Karp in the elevator and he said it was probably NP-complete.”
- **proof by personal communication:** “Eight-dimensional colored cycle stripping is NP-complete [Karp, personal communication].”
- **proof by reduction to the wrong problem:** “To see that infinite-dimensional colored cycle stripping is decidable, we reduce it to the halting problem.”
- **proof by reference to inaccessible literature:** The author cites a simple corollary of a theorem to be found in a privately circulated memoir of the Slovenian Philological Society, 1883.
- **proof by importance:** A large body of useful consequences all follow from the proposition in question.
- **proof by accumulated evidence:** Long and diligent search has not revealed a counterexample.
- **proof by cosmology:** The negation of the proposition is unimaginable or meaningless. Popular for proofs of the existence of God.
- **proof by mutual reference:** In reference A, Theorem 5 is said to follow from Theorem 3 in reference B, which is shown to follow from Corollary 6.2 in reference C, which is an easy consequence of Theorem 5 in reference A.
- **proof by meta-proof:** A method is given to construct the desired proof. The correctness of the method is proved by any of these techniques.
- **proof by picture:** A more convincing form of proof by example. Combines well with proof by omission.
- **proof by vehement assertion:** It is useful to have some kind of authority relation to the audience.

- **proof by ghost reference:** Nothing even remotely resembling the cited theorem appears in the reference given.
- **proof by forward reference:** Reference is usually to a forthcoming paper of the author, which is often not as forthcoming as at first.
- **proof by semantic shift:** Some of the standard but inconvenient definitions are changed for the statement of the result.
- **proof by appeal to intuition:** Cloud-shaped drawings frequently help here.

[1]

---

There are three kinds of mathematicians: those who can count and those who can't.

---

It isn't politically correct to use "singularity" - the function is "convergently challenged" there.

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Manifolds are personifolds (humanifolds).

---

Neighborhoods are neighbor victims of society.

---

A mathematician decides he wants to learn more about practical problems. He sees a seminar with a nice title: "The Theory of Gears." So he goes. The speaker stands up and begins, "The theory of gears with a real number of teeth is well known... ."

---

There are two groups of people in the world; those who believe that the world can be divided into two groups of people, and those who don't.

---

A group of scientists were doing an investigation into problem-solving techniques, and constructed an experiment involving a physicist, an engineer, and a mathematician.

The experimental apparatus consisted of a water spigot and two identical pails, one of which was fastened to the ground ten feet from the spigot.

Each of the subjects was given the second pail, empty, and told to fill the pail on the ground.

The physicist was the first subject: he carried his pail to the spigot, filled it there, carried it full of water to the pail on the ground, and poured the water into it. Standing back, he declared, "There: I have solved the problem."

The engineer and the mathematician each approached the problem similarly. Upon finishing, the engineer noted that the solution was exact, since the volumes of the pails were equal. The mathematician merely noted that he had proven that a solution exists.

Now, the experimenters altered the parameters of the task a bit: the pail on the ground was still empty, but the subjects were presented with a pail that was already half-filled with water.

The physicist immediately carried his pail over to the one on the ground, emptied the water into it, went back to the spigot, \*filled\* the pail, and finally emptied the entire contents into the pail on the ground, overflowing it and spilling some of the water. Upon finishing, he commented that the problem should have been better stated.

The engineer, in turn, thought for some time before going into action. He then took his half-filled pail to the spigot, filled it to the brim, and filled the pail on the ground from it. Again he noted that the problem had an exact solution, which of course he had found.

The mathematician thought for a long time before stirring. At last he stood up, emptied his pail onto the ground, and declared, "The problem has been reduced to one already solved!"

---

There are two groups of people in the world: Those who can be categorized into one of two groups of people, and those who can't.

---

Why did the calculus student have so much trouble making Kool-Aid? Because he couldn't figure out how to get a quart of water into the little package.

---

First of all let me make it clear that I have nothing against contravariant functors. Some of my best friends are cohomology theories! But now you aren't supposed to call them contravariant anymore. It's Algebraically Correct to call them 'differently arrowed'!!

---

The Stanford Linear Accelerator Center was known as SLAC, until the big earthquake, when it became known as SPLAC.  
SPLAC? Stanford Piecewise Linear Accelerator.

---

A mathematician decides he wants to learn more about practical problems. He sees a seminar with a nice title: "The Theory of Gears." So he goes. The speaker stands up and begins, "The theory of gears with a real number of teeth is well known ..."

---

Six engineers and six mathematicians are attending a conference and are travelling by train. One by one, each of the engineers goes up to the ticket counter and buys a ticket to the conference. But only one of the mathematicians does. The engineers look puzzled and one of the mathematicians says, "Optimization."

The twelve get on the same car and one mathematician stands at each end of the car. Now the engineers are really puzzled. After a while, the mathematician at one end, yells, "Conductor!" On that cue, all the mathematicians pile into the rest room and lock the door.

The conductor enters the car and announces, "Tickets, please. Tickets!" He passes the engineers and punches each of their tickets. At the end of the car, he notices the restroom is occupied and knocks on the door, "Ticket, please."

The ticket slides out from under the door, he punches it and slides it back, then leaves the car and continues to the next car.

The engineers look at each other and decide how clever the mathematicians have been, and then wink at each other.

They all attend the conference and have a good time. Upon arriving at the train station, one engineer buys a ticket and they giggle at each other. The mathematicians do not buy any. This time again, the engineers look puzzled, and the same mathematician says, "Optimization."

This time all the mathematicians sit down and the engineers have the lookouts. One engineer, peers down a couple of cars and shouts, "Conductor!" Immediately all the engineers pile into the rest room, while the mathematicians just sit there. Once the engineers are in the rest room, one of the mathematicians knocks on the door and says, "Ticket, please." The ticket slides out under the door, the mathematician grabs it and along with the other mathematicians, runs to the other rest room and they lock themselves in.

---

Mathematics is made up of 50 percent formulas, 50 percent proofs, and 50 percent imagination.

---

There are three kinds of mathematicians – those who can count and those who can't.

---

**You Might Be a Mathematician if...**

- you are fascinated by the equation  $e^{\pi i} + 1 = 0$ .
- you know by heart the first fifty digits of pi.
- you have tried to prove Fermat's Last Theorem.
- you know ten ways to prove Pythagoras' Theorem.
- your telephone number is the sum of two prime numbers.
- you have calculated that the World Series actually diverges.
- you are sure that differential equations are a very useful tool.
- you comment to your wife that her straight hair is nice and parallel.
- when you say to a car dealer "I'll take the red car or the blue one", you must add "but not both of them."

---

Teacher: "What is seven Q plus three Q?"

Student: "Ten Q"

Teacher: "You're Welcome."

---

My geometry teacher was sometimes acute, and sometimes obtuse, but always, he was right.

---

The answer to the problem was " $\log(1+x)$ ". A student copied the answer from the good student next to him, but didn't want to make it obvious that he was cheating, so he changed the answer slightly, to "*timber*( $1+x$ )."

---

The limit as  $n$  goes to  $\infty$  of  $\sin(x)/n$  is 6.

Proof: cancel the  $n$  in the numerator and denominator.

---

Lumberjacks make good musicians because of their natural logarithms.

---

The parent's of a mathematics student scream when their child walks into the room dazed and staggering:

OH NO...YOU'VE BEEN TAKING DERIVATIVES!!

---

MADD =   Mathematicians  
           Against  
           Drunk  
           Deriving

---

The functions are sitting in a bar, chatting (how fast they go to zero at infinity etc.). Suddenly, one cries “Beware! Derivation is coming!” All immediately hide themselves under the tables, only the exponential sits calmly on the chair. The derivation comes in, sees a function and says “Hey, you don’t fear me?” “No, I am  $e$  to  $x$ ”, says the exponential self-confidently. “Well” replies the derivation “but who says I differentiate along  $x$ ?”

---

Biologists think they’re biochemists. Biochemists think they’re chemists. Chemists think they’re physical chemists. Physical Chemists think they’re physicists. Physicists think they’re God. God thinks he is a mathematician.

---

The philosopher and mathematician Rene Descartes was sitting in a bar having a few drinks. The bartender came over and asked Rene if he’d like another round, to which Rene responded, “I think not.” Rene immediately disappeared.

---

One day, Jesus said to his disciples: “The Kingdom of Heaven is like  $3x^2+8x-9$ .” A man who had just joined the disciples looked very confused and asked Peter: “What, on Earth, does he mean by that?”

Peter smiled. “Don’t worry. It’s just another one of his parabolas.”

---

There was once a very smart horse. Anything that was shown it, it mastered easily, until one day, its teachers tried to teach it about rectangular coordinates and it couldn’t understand them. All the horse’s acquaintances and friends tried to figure out what was the matter and couldn’t. Then a new guy looked at the problem and said, “Of course he can’t do it. Why, you’re putting Descartes before the horse!”

---

The Flood is over and the ark has landed. Noah lets all the animals out and says, “Go forth and multiply.”

A few months later, Noah decides to take a stroll and see how the animals are doing. Everywhere he looks he finds baby animals. Everyone is doing fine

except for one pair of little snakes. “What’s the problem?” says Noah. “Cut down some trees and let us live there”, say the snakes.

Noah follows their advice. Several more weeks pass. Noah checks on the snakes again. Lots of little snakes, everybody is happy. Noah asks, “Want to tell me how the trees helped?”

“Certainly”, say the snakes. “We’re adders, so we need logs to multiply.”

---

PI R Squared,... PI R Squared,... I never did understand that.  
Where I come from PI are Round,... Cornbread R Squared!

---

A mathematician went insane and believed that he was the differentiation operator. His friends had him placed in a mental hospital until he got better. All day he would go around frightening the other patients by staring at them and saying “I differentiate you!”

One day he met a new patient; and true to form he stared at him and said “I differentiate you!”, but for once, his victim’s expression didn’t change. Surprised, the mathematician marshalled his energies, stared fiercely at the new patient and said loudly “I differentiate you!”, but still the other man had no reaction. Finally, in frustration, the mathematician screamed out “I DIFFERENTIATE YOU!” The new patient calmly looked up and said, “You can differentiate me all you like: I’m  $e$  to the  $x$ .”

---

A man camped in a national park, and noticed Mr. Snake and Mrs. Snake slithering by. “Where are all the little snakes?” he asked. Mr. Snake replied, “We are adders, so we cannot multiply.”

The following year, the man returned to the same camping spot. This time there were a whole batch of little snakes. “I thought you said you could not multiply,” he said to Mr. Snake. “Well, the park ranger came by and built a log table, so now we can multiply by adding!”

---

A guy decided to go to the brain transplant clinic to refresh his supply of brains. The secretary informed him that they had three kinds of brains available at that time. Doctors' brains were going for \$20 per ounce and lawyers' brains were getting \$30 per ounce. And then there were mathematicians' brains which were currently fetching \$1000 per ounce.

"A 1000 dollars an ounce!" he cried. "Why are they so expensive?"

"It takes more mathematicians to get an ounce of brains," she explained.

---

Aleph-null bottles of beer on the wall, Aleph-null bottles of beer, You take one down, and pass it around, Aleph-null bottles of beer on the wall.

---

Two mathematicians are in a bar. The first one says to the second that the average person knows very little about basic mathematics. The second one disagrees, and claims that most people can cope with a reasonable amount of math.

The first mathematician goes off to the washroom, and in his absence the second calls over the waitress. He tells her that in a few minutes, after his friend has returned, he will call her over and ask her a question. All she has to do is answer one third  $x$  cubed.

She repeats "one thir - dex cue"? He repeats "one third  $x$  cubed". Her: 'one thir dex cuebd'? Yes, that's right, he says. So she agrees, and goes off mumbling to herself, "one thir dex cuebd...".

The first guy returns and the second proposes a bet to prove his point, that most people do know something about basic math. He says he will ask the blonde waitress an integral, and the first laughingly agrees. The second man calls over the waitress and asks "what is the integral of  $x$  squared?". The waitress says "one third  $x$  cubed" and while walking away, turns back and says over her shoulder "plus a constant!"

---

In the bayous of Louisiana, there is a small river called the Dirac. Many wealthy people have their mansions near its mouth. One of the social leaders decided to have a grand ball. Being a cousin of the Governor, she arranged for a detachment of the state militia to serve as guards and traffic directors for the big doings. A captain was sent over with a small company; naturally he asked if there was enough room for him and his unit. The social leader replied, "But of course, Captain! It is well known that the Dirac delta function has unit area."

---

**Top  $\ln(e^1)$  reasons why  $e$  is better than  $\pi$**

- 10)  $e$  is easier to spell than  $\pi$ .
- 9)  $\pi \approx 3.14$  while  $e \approx 2.718281828459045$ .
- 8) The character for  $e$  can be found on a keyboard, but  $\pi$  sure can't.
- 7) Everybody fights for their piece of the pie.
- 6)  $\ln(\pi^1)$  is a really nasty number, but  $\ln(e^1) = 1$ .
- 5)  $e$  is used in calculus while  $\pi$  is used in baby geometry.
- 4) 'e' is the most commonly picked vowel in Wheel of Fortune.
- 3)  $e$  stands for Euler's Number,  $\pi$  doesn't stand for squat.
- 2) You don't need to know Greek to be able to use  $e$ .
- 1) You can't confuse  $e$  with a food product.

---

Three mathematicians and a physicist walk into a bar. You'd think the second one would have ducked.

---

**Top ten reasons why  $e$  is inferior to  $\pi$**

- 10)  $e$  is less challenging to spell than pi.
- 9)  $e \approx 2.718281828459045$ , which can be easily memorized to its billionth place, whereas  $\pi$  needs "skills" to be memorized.
- 8) The character for  $e$  is so cheap that it can be found on a keyboard. But  $\pi$  is special (it's under "special symbols" in a word processor programs.)

- 7)  $\pi$  is the bigger piece of pie.
- 6)  $e$  has an easy limit definition and infinite series. The limit definition of  $\pi$  and the infinite series are much harder.
- 5)  $e$  you understand what it is even though you start learning it late when you're in pre-calculus. But  $\pi$ , even after five or six years it's still hard to know what it really is.
- 4) People mistakenly confuse Euler's Number ( $e$ ) with Euler's Constant ( $\gamma$ ). There is no confusion with the one and only.
- 3)  $e$  is named after a person, but  $\pi$  stands for itself.
- 2)  $\pi$  is much shorter and easier to say than "Euler's Number".
- 1) To read  $\pi$ , you don't have to know that Euler's name is really pronounced Oiler.

---

### What is " $\pi$ "?

- **Mathematician:**  $\pi$  is the ratio of the circumference of a circle to its diameter.
- **Engineer:**  $\pi$  is about  $22/7$ .
- **Physicist:**  $\pi$  is 3.14159 plus or minus 0.000005.
- **Computer Programmer:**  $\pi$  is 3.141592653589 in double precision.
- **Nutritionist:** You one track math-minded fellows, Pie is a healthy and delicious dessert!

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### Top $\ln(e^{10})$ reasons why $e$ is better than $\pi$

- 10)  $e$  is easier to spell than  $\pi$ .
- 9)  $\pi \approx 3.14$  while  $e \approx 2.718281828459045$ .
- 8) The character for  $e$  can be found on a keyboard, but  $\pi$  sure can't.

- 7) Everybody fights for their piece of the pie.
- 6)  $\ln(\pi^1)$  is a really nasty number, but  $\ln(e^1) = 1$ .
- 5)  $e$  is used in calculus while  $\pi$  is used in baby geometry.
- 4) 'e' is the most commonly picked vowel in Wheel of Fortune.
- 3)  $e$  stands for Euler's Number,  $\pi$  doesn't stand for squat.
- 2) You don't need to know Greek to be able to use  $e$ .
- 1) You can't confuse  $e$  with a food product.

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**TOP TEN EXCUSES FOR NOT DOING THE MATH HOMEWORK**

1. I accidentally divided by zero and my paper burst into flames.
2. Isaac Newton's birthday.
3. I could only get arbitrarily close to my textbook. I couldn't actually reach it.
4. I have the proof, but there isn't room to write it in this margin.
5. I was watching the World Series and got tied up trying to prove that it converged.
6. I have a solar powered calculator and it was cloudy. 7. I locked the paper in my trunk but a four-dimensional dog got in and ate it.
7. I couldn't figure out whether  $i$  am the square of negative one or  $i$  is the square root of negative one.
8. I took time out to snack on a doughnut and a cup of coffee. I spent the rest of the night trying to figure which one to dunk.
9. I could have sworn I put the homework inside a Klein bottle, but this morning I couldn't find it.

---

A topologist walks into a bar and orders a drink. The bartender, being a number theorist, says, "I'm sorry, but we don't serve topologists here."

The disgruntled topologist walks outside, but then gets an idea and performs Dahn surgery upon herself. She walks into the bar, and the bartender, who does not recognize her since she is now a different manifold, serves her a drink. However, the bartender thinks she looks familiar, or at least locally similar, and asks, "Aren't you that topologist that just came in here?"

To which she responds, "No, I'm a frayed knot."

## Chapter 3

# An $X$ , a $Y$ , and a Mathematician...

An assemblage of the most gifted minds in the world were all posed the following question:

“What is  $2 \times 2$  ?”

The Engineer whips out his slide rule and shuffles it back and forth, and finally announces “3.99”.

The Physicist consults his technical references, sets up the problem on his computer, and announces “it lies between 3.98 and 4.02”.

The Mathematician cogitates for a while, oblivious to the rest of the world, then announces: “I don’t what the answer is, but I can tell you, an answer exists!”.

Philosopher: “But what do you *mean* by  $2 \times 2$  ?”

Logician: “Please define  $2 \times 2$  more precisely.”

Accountant: Closes all the doors and windows, looks around carefully, then asks “What do you *want* the answer to be?”

Computer Hacker: Breaks into the NSA super-computer and gives the answer.

---

The USDA once wanted to make cows produce milk faster, to improve the dairy industry.

So, they decided to consult the foremost biologists and recombinant DNA technicians to build them a better cow. They assembled this team of great scientists, and gave them unlimited funding. They requested rare chemicals, weird bacteria, tons of quarantine equipment, there was a horrible typhus epidemic they started by accident, and, 2 years later, they came back with the “new, improved cow.” It had a milk production improvement of 2% over the original.

They then tried with the greatest Nobel Prize winning chemists around. They worked for six months, and, after requisitioning tons of chemical equipment, and poisoning half the small town in Colorado where they were working with a toxic cloud from one of their experiments, they got a 5% improvement in milk output.

The physicists tried for a year, and, after ten thousand cows were subjected to radiation therapy, they got a 1% improvement in output.

Finally, in desperation, they turned to the mathematicians. The foremost mathematician of his time offered to help them with the problem. Upon hearing the problem, he told the delegation that they could come back in the morning and he would have solved the problem. In the morning, they came back, and he handed them a piece of paper with the computations for the new, 300% improved milk cow.

The plans began:

“A Proof of the Attainability of Increased Milk Output from Bovines:

Consider a spherical cow.....”

---

A doctor, a lawyer and a mathematician were discussing the relative merits of having a wife or a mistress.

The lawyer says: “For sure a mistress is better. If you have a wife and want a divorce, it causes all sorts of legal problems.”

The doctor says: “It’s better to have a wife because the sense of security lowers your stress and is good for your health.”

The mathematician says: “You’re both wrong. It’s best to have both so that when the wife thinks you’re with the mistress and the mistress thinks you’re with your wife — you can do some mathematics.

---

An engineer, a physicist and a mathematician find themselves in an anecdote, indeed an anecdote quite similar to many that you have no doubt already heard. After some observations and rough calculations the engineer realizes the situation and starts laughing. A few minutes later the physicist understands too and chuckles to himself happily as he now has enough experimental evidence to publish a paper.

This leaves the mathematician somewhat perplexed, as he had observed right away that he was the subject of an anecdote, and deduced quite rapidly the presence of humour from similar anecdotes, but considers this anecdote to be too trivial a corollary to be significant, let alone funny.

---

An engineer, a mathematician, and a physicist went to the races one Saturday and laid their money down. Commiserating in the bar after the race, the engineer says, "I don't understand why I lost all my money. I measured all the horses and calculated their strength and mechanical advantage and figured out how fast they could run..."

The physicist interrupted him: "...but you didn't take individual variations into account. I did a statistical analysis of their previous performances and bet on the horses with the highest probability of winning..."

"...so if you're so hot why are you broke?" asked the engineer. But before the argument can grow, the mathematician takes out his pipe and they get a glimpse of his well-fattened wallet. Obviously here was a man who knows something about horses. They both demanded to know his secret.

"Well," he says, between puffs on the pipe, "first I assumed all the horses were identical and spherical..."

---

A mathematician, an engineer, and a physicist are out hunting together. They spy a deer(\*) in the woods.

The physicist calculates the velocity of the deer and the effect of gravity on the bullet, aims his rifle and fires. Alas, he misses; the bullet passes three feet behind the deer. The deer bolts some yards, but comes to a halt, still within sight of the trio.

“Shame you missed,” comments the engineer, “but of course with an ordinary gun, one would expect that.” He then levels his special deer-hunting gun, which he rigged together from an ordinary rifle, a sextant, a compass, a barometer, and a bunch of flashing lights which don’t do anything but impress onlookers, and fires. Alas, his bullet passes three feet in front of the deer, who by this time wises up and vanishes for good.

“Well,” says the physicist, “your contraption didn’t get it either.”

“What do you mean?” pipes up the mathematician. “Between the two of you, that was a perfect shot!”

\* How they knew it was a deer:

The physicist observed that it behaved in a deer-like manner, so it must be a deer.

The mathematician asked the physicist what it was, thereby reducing it to a previously solved problem.

The engineer was in the woods to hunt deer, therefore it was a deer.

---

An astronomer, a physicist and a mathematician were taking a holiday in Scotland. Glancing from a train window, they observed a black sheep in the middle of a field.

“How interesting,” observed the astronomer, “all Scottish sheep are black!”

To which the physicist responded, “No, no! Some Scottish sheep are black!”

The mathematician gazed heavenward in supplication, and then intoned, “In Scotland there exists at least one field, containing at least one sheep, at least one side of which is black.”

---

A biologist, a statistician, a mathematician, and a computer scientist are on a photo-safari in Africa. They drive out on the savannah in their jeep, stop and scout the horizon with their binoculars.

The biologist: “Look! There’s a herd of zebras! And there, in the middle : A white zebra! It’s fantastic! There are white zebra’s! We’ll be famous!”

The statistician: “It’s not significant. We only know there’s one white zebra.”

The mathematician: “Actually, we only know there exists a zebra, which is white on one side.”

The computer scientist: “Oh, no! A special case!”

---

There was a mad scientist (a mad ...social... scientist) who kidnapped three colleagues, an engineer, a physicist, and a mathematician, and locked each of them in separate cells with plenty of canned food and water but no can opener.

A month later, returning, the mad scientist went to the engineer’s cell and found it long empty. The engineer had constructed a can opener from pocket trash, used aluminum shavings and dried sugar to make an explosive, and escaped.

The physicist had worked out the angle necessary to knock the lids off the tin cans by throwing them against the wall. She was developing a good pitching arm and a new quantum theory.

The mathematician had stacked the unopened cans into a surprising solution to the kissing problem; his desiccated corpse was propped calmly against a wall, and this was inscribed on the floor in blood:

Theorem: If I can’t open these cans, I’ll die.

Proof: assume the opposite...

---

An engineer, a chemist and a mathematician are staying in three adjoining cabins at an old motel. First the engineer’s coffee maker catches fire. He smells the smoke, wakes up, unplugs the coffee maker, throws it out the window, and goes back to sleep.

Later that night the chemist smells smoke too. He wakes up and sees that a cigarette butt has set the trash can on fire. He says to himself, “Hmm... How does one put out a fire? One can reduce the temperature of the fuel below the flash point, isolate the burning material from oxygen, or both. This could

be accomplished by applying water.” So he picks up the trash can, puts it in the shower stall, turns on the water, and when the fire is out, goes back to sleep.

The mathematician, of course, has been watching all this out the window. So later, when he finds that his pipe ashes have set the bed sheet on fire, he is not in the least taken aback. He says: ”Aha! A solution exists!” and goes back to sleep.

---

A mathematician, a biologist and a physicist are sitting in a street cafe watching people going in and coming out of the house on the other side of the street.

First they see two people going into the house. Time passes. After a while they notice three people coming out of the house.

The physicist: “The measurement wasn’t accurate.”

The biologists: “They have reproduced”.

The mathematician: “If now exactly one person enters the house then it will be empty again.”

---

A mathematician and an engineer attend a lecture by a physicist. The topic concerns Kulza-Klein theories involving physical processes that occur in spaces with dimensions of 9, 12 and even higher. The mathematician is sitting, clearly enjoying the lecture, while the engineer is frowning and looking generally confused and puzzled. By the end the engineer has a terrible headache. At the end, the mathematician comments about the wonderful lecture.

The engineer says “How do you understand this stuff?”

Mathematician: “I just visualize the process.”

Engineer: ”How can you visualize something that occurs in 9-dimensional space?”

Mathematician: “Easy, first visualize it in N-dimensional space, then let N go to 9.”

---

A mathematician and a physicist were asked the following question:

Suppose you walked by a burning house and saw a hydrant and a hose not connected to the hydrant. What would you do?

Physicist: I would attach the hose to the hydrant, turn on the water, and put out the fire.

Mathematician: I would attach the hose to the hydrant, turn on the water, and put out the fire.

Then they were asked this question:

Suppose you walked by a house and saw a hose connected to a hydrant. What would you do?

Physicist: I would keep walking, as there is no problem to solve.

Mathematician: I would disconnect the hose from the hydrant and set the house on fire, reducing the problem to a previously solved form.

---

Philosopher: “The Resolution of the continuum hypothesis will have profound implications to all of science.”

Physicist: “Not quite. Physics is well on its way without those mythical ‘foundations’. Just give us serviceable mathematics.”

Computer Scientist: “Who cares? Everything in this Universe seems to be finite anyway. Besides, I’m too busy debugging my Pascal programs.”

Mathematician: “Forget all that! Just make your formulae as aesthetically pleasing as possible!”

---

What is " $\pi$ "?

Mathematician:  $\pi$  is the number expressing the relationship between the circumference of a circle and its diameter.

Physicist:  $\pi$  is 3.1415927 plus or minus 0.00000005.

Engineer:  $\pi$  is about 3.

When considering the behavior of a howitzer...

A mathematician will be able to calculate where the shell will land.

A physicist will be able to explain how the shell gets there.

An engineer will stand there and try to catch it.

---

An engineer, a mathematician, and a computer programmer are driving down the road when the car they are in gets a flat tire. The engineer says that they should buy a new car. The mathematician says they should sell the old tire and buy a new one. The computer programmer says they should drive the car around the block and see if the tire fixes itself.

---

## Chapter 4

# Oh Those Silly Mathematicians!

Three men are in a hot-air balloon. Soon, they find themselves lost in a canyon somewhere. One of the three men says, “I’ve got an idea. We can call for help in this canyon and the echo will carry our voices far.”

So he leans over the basket and yells out, “Helllllooooo! Where are we?” (They hear the echo several times.)

15 minutes later, they hear this echoing voice: “Helllllooooo! You’re lost!!”

One of the men says, “That must have been a mathematician.”

Puzzled, one of the other men asks, “Why do you say that?”

The reply: “For three reasons. (1) he took a long time to answer, (2) he was absolutely correct, and (3) his answer was absolutely useless.”

---

Russell to Whitehead: ”My Gödel is killing me!”

---

A mathematician is a person who says that, when 3 people are supposed to be in a room but 5 came out, 2 have to go in so the room gets empty. . . .

---

A mathematician was taking a cooking class when the teacher asked him what you get if you divide the circumference of a jack-o’lantern by its diameter? “Pumpkin pi,” he replied [3].

---

A quiet little man was brought before a judge. The judge looked down at the man and then at the charges and then down at the little man in amazement. “Can you tell me in your own words what happened?” he asked the man.

“I’m a mathematical logician dealing in the nature of proof.”

“Yes, go on,” said the astounded judge.

“Well, I was at the library and I found the books I wanted and went to take them out. They told me my library card had expired and I had to get a new one. So I went to the registration office and got in another line. And filled out my forms for another card. And got back in line for my card.”

“And?” said the judge.

“And he asked ‘Can you prove you are from New York City?’ ...So I stabbed him.”

---

Mathematicians use epsilons and deltas in because they tend to make errors.

---

He thinks he’s really smooth, but he’s only  $C^1$ .

---

He’s always going off on a tangent.

---

One day a mathematician decides that he is sick of math. So he walks down to the fire department and announces that he wants to become a fireman. The fire chief says, “Well, you look like a good guy. I’d be glad to hire you, but first I

have to give you a little test.”

The fire chief takes the mathematician to the alley behind the fire department which contains a dumpster, a spicket, and a hose. The chief then says, “OK, you’re walking in the alley and you see the dumpster here is on fire. What do you do?” The mathematician replies, “Well, I hook up the hose to the spicket, turn the water on, and put out the fire.”

The chief says, “That’s great... perfect. Now I have to ask you just one more question. What do you do if you’re walking down the alley and you see the dumpster is not on fire?” The mathematician puzzles over the question for awhile and he finally says, “I light the dumpster on fire.” The chief yells, “What? That’s horrible! Why would you light the dumpster on fire?” The mathematician replies, “Well, that way I reduce the problem to one I’ve already solved.”

---

An engineer, physicist, and mathematician are all challenged with a problem: to fry an egg when there is a fire in the house. The engineer just grabs a huge bucket of water, runs over to the fire, and puts it out. The physicist thinks for a long while, and then measures a precise amount of water into a container. He takes it over to the fire, pours it on, and with the last drop the fire goes out. The mathematician pores over pencil and paper. After a few minutes he goes “Aha! A solution exists!” and goes back to frying the egg.

Sequel: This time they are asked simply to fry an egg (no fire). The engineer just does it, kludging along; the physicist calculates carefully and produces a carefully cooked egg; and the mathematician lights a fire in the corner, and says “I have reduced it to the previous problem.”

---

A physicist and a mathematician setting in a faculty lounge. Suddenly, the coffee machine catches on fire. The physicist grabs a bucket and leaps towards the sink, fills the bucket with water and puts out the fire. The second day, the same two sit in the same lounge. Again, the coffee machine catches on fire. This time, the mathematician stands up, gets a bucket, hands the bucket to the physicist, thus reducing the problem to a previously solved one.

---

A mathematician is in Africa trying to capture a lion. When he spots one he proceeds to build a fence around himself and says, “I define this to be outside!”

---

A mathematician wandered home at 3 AM. His wife became very upset, telling him, "You're late! You said you'd be home by 11:45!" The mathematician replied, "I'm right on time. I said I'd be home by a quarter of twelve."

---

A team of engineers were required to measure the height of a flag pole. They only had a measuring tape, and were getting quite frustrated trying to keep the tape along the pole. It kept falling down, etc.

A mathematician comes along, finds out their problem, and proceeds to remove the pole from the ground and measure it easily.

When he leaves, one engineer says to the other: "Just like a mathematician! We need to know the height, and he gives us the length!"

---

One day a farmer called up an engineer and a mathematician and asked them to fence off the largest possible area with the least amount of fence. The engineer made the fence in a circle and proclaimed that he had the most efficient design. The mathematician just laughed at him. She built a tiny fence around herself and said "I declare myself to be on the outside."

There were two men trying to decide what to do for a living. They went to see a counsellor, and he decided that they had good problem solving skills.

---

He tried a test to narrow the area of specialty. He put each man in a room with a stove, a bucket of water, and an empty pot on the stove. He said "Boil some water in the pot." Both men filled the pot with water from the bucket and turned on the burner to boil the water. Next, he put them into a room with a stove, a bucket of water, and a pot full of water on the stove. Again, he said "Boil the water in the pot." The first man immediately turned on the burner. The counsellor told him to be an Engineer. The second man emptied the pot and proudly said that now the problem is reduced to the previously solved problem. The counsellor told him to be a mathematician.

---

Three statisticians went rabbit hunting one day. While walking along, they scared a rabbit out of the brush and send him running. The first statistician

shot and there was a puff of dust 1 yard behind the rabbit. The second shot next and there was a puff of dust one yard in front of the rabbit. The third one yelled, “We got it!”

---

Old mathematicians never die — they just lose some of their functions.

---

During a calculus class, the lecturer suddenly checked himself and stared intently at the table in front of him for a while. Then he looked up and explained that he thought he had brought six piles of papers with him, but “no matter how he counted” there was only five on the table. Then he became silent for a while again and then told the following story:

“When I was young in Poland I met the great mathematician Waclaw Sierpinski. He was old already then and rather absent-minded. Once he had to move to a new place for some reason. His wife didn’t trust him very much, so when they stood down on the street with all their things, she said:

“Now, you stand here and watch our ten trunks, while I go and get a taxi.”

She left and left him there, eyes somewhat glazed and humming absently. Some minutes later she returned, presumably having called for a taxi. Says Mr. Sierpinski (possibly with a glint in his eye):

“I thought you said there were ten trunks, but I’ve only counted to nine.”

“No, they’re TEN!”

“No, count them: 0, 1, 2, ... .”



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