WHY was I convinced you would read these pages too? Reading these lines confirms that what I was convinced was not something wrong, haha!

First, either to remember something you forgot or to learn something you never knew about **irrational** numbers and about **dividing** any real number by **zero (0)** and secondly, to learn *to steal* from the Web like me! I would wish you to convince yourself from the first lines that it will be just like that, so I will *__step on it__*!

All we remember about the number π is that it is un ... **irrational** number because it has an infinity of decimals that do **not** repeat periodically and therefore can**not** be written as a **fraction** (ordinary or decimal), and that all that is left of in our minds is in the formula of the circumference of the circle where $\pi = 3,14$; π is circle*'s child*!

Since you will read more about π at the **appropriate** moment, here I will only give a brief introduction of how it was born, a birth that began with *__Archimedes of Syracuse__* and *__Zu Chongzhi__*, a brilliant Chinese mathematician and astronomer and ended with the introduction of the Greek letter π in Europe by **William Jones** in 1706 after which *__Leonhard Euler__* adopted it in 1737 thus being credited for **popularizing π (pi)** to denote the ratio of the circumference of a circle to its diameter, $\pi = C / D$. This ratio means:

1) *__circumference__* $C = \pi * D = \pi * 2R = 2\pi * R = 2\pi R$; this is how we like to write: $C = 2\pi R$!

Just to make sure you don't skip any clips from the circle circumference link I'm putting them here
   a) when $R=1, C=2\pi$
   b) when $D=1, C= \pi$

2) what you will read at the right time when we will measure the length, the circumference C of a circle of radius R using its diameter D as a **unit (1)** of measure, a measurement that will have the result π; you will appreciate that that's ... the right moment!

Speaking about π and **Leo Euler**, we cannot *overlook* one of the **personal philosophy and religious beliefs** with which he remained as well known as with the entire contribution to the scientific treasury of mankind! There is a famous legend inspired by Euler's arguments with secular philosophers over religion, which is set during Euler's second stint at the St. Petersburg Academy.

The French philosopher **Denis Diderot** was visiting Russia on **Catherine the Great**'s invitation. However, the Empress was alarmed that the philosopher's arguments for atheism were influencing members of her court, and so Euler was asked to confront the Frenchman. Diderot was informed that a learned mathematician had produced a proof of the **existence of God**: he agreed to view the proof as it was presented in court. **Euler** appeared, advanced toward Diderot, and in a tone of perfect conviction announced this non-sequitur:

"Sir, this **ecuation** [$a + b^n / n = x$] **exists**, hence **God exists**!", reply.

Diderot, to whom (says the legend) all mathematics was gibberish, stood dumbstruck as peals of laughter erupted (like you, now) from the court. Embarrassed, he asked to leave Russia, a request that was graciously granted by the Empress.

Did you know that **March 14, 2016** was the world day of the number π? March 14, 2016 written in American format is **3.14.16** which is 3.14159 rounded to four decimal places: **3.1416**?

When mathematicians celebrate the world day of the number **zero**, written with the digit **0**, then **zero (0)** will be everyone's **superstar**; now he is only **mine**!

If you are still not convinced then this is my last chance:
all irrational numbers, such as π, $\sqrt{2} = 1.414213562373095...$, $e = 2.71828182845904523536...$ have a **precise** place on *__the axis of real numbers__* $\mathbb{R}$!

WHY they have a precise place, **their place** on the axis of real numbers $\mathbb{R}$, you will see and after you understand WHY, then you'll feel like a *new man*!

I must emphasize from the beginning that Google finds WIKIPEDIA the first source of information most of the time and then that WIKIPEDIA hosts information on almost every subject in almost every language of the world! With Google's help, *I stole* everything from the Web that I thought would be a good start and linked them I start here!

I *stole* and I was commended, not condemned for it and *__Guinness World Records__* will record *my theft* as a now record in his world records! In 1955 in London, Norris McWhirter with his twin brother Ross launched *The Guinness Book of World Records* where they collected *__Records__* of __everything you want__ and __what ... you don't want to see__!?

They will *record* my record when the last reader of this chapter gives them the OK; until then do not worry about anything! "*I stole* from the Web" and **not** "I stole the Web" because everything *I stole* is still **there**, on the

Web! What follows is:

Important for both the reader as well as for the author!?

Google launched **NMT** (**Neural machine translation**) in 2016 and every year adds new languages it supports; now when I write this page (As of ... 2023) there are *133 languages* (who knows how many there will be when you read)! A few hundred years before the birth of Jesus Christ, *Heraclitus* left us one of the wisest *quotes*! A few years before the birth of Larry and Sergey, a lot of energy, time and money was consumed for a literary masterpiece to be translated into another language; today Google translates even *a piece* of literature into any of **133** languages in seconds. WIKIPEDIA uses Google 's creation and has changed its *appearance* because of it! All of us the mere mortals, must change our style with so many changes to be able *to handle* the Web, and in the Web to be able to manage in WIKIPEDIA, free online encyclopedia, created and edited by volunteers from all over the world! The beneficiaries of these changes are us, ordinary mortals; you will immediately see how! I will exemplify how *I stole* and you will be able *to steal* when you need to; that is why I show you how *I stole* everything I wanted to add to what I knew about the **decimal system** (now I know more than I knew; the uncaught thief remains with the money, and you with what ... I *stole*)! A single example is enough to show that we are the beneficiaries of these changes we, friends of Google and the Web.
I am looking for the best, *one*, *two* **3C**s (**C**lear, **C**omplete, **C**oncise) *websites* [*Web*] either in English or in Romanian (that's why the best **3C**s it's important *even more* ... for the **author**)!
Since the *decimal system* was created to represent any **real number** I thought it would be good to *kill two birds with one stone* by looking for the best **3C**s for the decimal system *of real numbers*!
I search for (shortest defining) *decimal system real numbers*. Google gave me more good links than I expected, even a brief clarification "==Real numbers are the set numbers that do **not** include any **imaginary** value, just the union of both **rational** and **irrational** numbers.==". Scrolling, I found something more promising: **Images** *for decimal system real numbers* (with **View all →**) full of buttons, pictures and links associated with them, from where I have nothing left to do but choose the best **3C**s; *the tree structure* along with **that** they just *put a lid* on searches! I bookmarked the tab for future visits and then opened almost all the links looking for a winner, the **C**learest, **C**omplete, **C**oncise: *this one* I said first time, no, *this one* or *this* Romanian *one*, (in English or in Romanian), no, *that's the one* with the associated link *the Real Number System* (created by *Miss*) which gave **0** from **Whole** a name, Neutral Number **0**! Just for fun I also selected **π1** and **π2**; see how fun it is *to surf* the Web**!**

3Cs are not *roasted larks that fall into my mouth*; I worked for **3C**, I wasn't satisfied with just what Google writes about *how to search on Google*, in other words: if *you're lucky* you'll reach **3C**, hahaha!
Since I am analyzing the decimal system of real numbers, I thought it would be good to start by understanding what a *real number* in mathematics is and then to continue with *the set* of real numbers!
The first phrase about real number has 8 meaningful links that will walk you through the whole world of numbers. I suggest to read it over there for a ... quick ride. I mention it here using only one of those 8 links: "In mathematics, a **real number** is *a number* that can be used to measure a continuous one-dimensional quantity such as a distance, duration or temperature" just to take advantage of the situation, this definition explains the reason for their existence, of real numbers!

In mathematics a real number is *a number* just like $1+i\sqrt{3}$ which is also *a number*, but **C**omplex, which can**not** be used to measure, among other things the distance; instead it can do a lot of things a real number can't do! Now it is easier to understand why **number** cannot be simply defined; what *the dictionary* defines it is not for this part of this chapter but for ... two pages down!
Many readers are familiar with the upgrade which WIKIPEDIA made with the implementation of the free online machine translation service **Google Translate**, but many are not. That is why I will make a very short introduction (sorry those who are familiar) of the *symbiosis* of the traditional way in which WIKIPEDIA, for most topics of wide interest, has a variant created and edited by volunteers in a **language** of their choice, symbiosis with **Google** **translation** through which that variant can be read in ANY of the 132 languages that **Google** knows; great, right, let's ... *exploit* WIKIPEDIA and **Google** together, me to give you something about symbiosis that will satisfy both of us and you, in addition, to have another example of how to *exploit* WIKIPEDIA and **Google** on your own!

If you have not noticed something at *real number*, then now is the time: above $\mathbb{R}$ there is, *today*, when I write

not when you read, a link 文A **115 languages v** with the same number, **115 Suggested languages**:

Real number

Article Talk

From Wikipedia, the free encyclopedia

For the real numbers used in descriptive set theory, see Baire space (set theory).

In mathematics, a **real number** is a number that can be used to measure a continuous one-dime
pairs of values can have arbitrarily small differences.[a] Every real number can be almost uniquel

The real numbers are fundamental in calculus (and more generally in all mathematics), in particu

The set of real numbers is denoted **R** or $\mathbb{R}$[2] and is sometimes called "the reals".[3] The adjective
numbers such as the square roots of −1.[4]

The real numbers include the rational numbers, such as the integer −5 and the fraction 4/3. The
the rationals) are the root of a polynomial with integer coefficients, such as the square root $\sqrt{2}$ =
as π = 3.1415...; these are called transcendental numbers.[4]

Real numbers can be thought of as all points on a line called the number line or real line, where t

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Search for a language

Suggested languages

中文   Deutsch   Tagalog

한국어   Español   Tiếng Việt

Български   Esperanto   ייִדיש

Русский   Français

                   Ido

                   Italiano

                   La .lojban.

                   Română

+ Add languages   ⚙

What are those **Suggested languages**?

Languages to **translate** this English site **OR** the languages each site being **written** by a specialist (with his information and skills) from the country where the language in which the site is written is a widely spoken language?

No HELP link here, so let us find out! So, clik 文A **115 languages v**; in **Suggested languages** it would be a **no-brainer** not to click first Română that takes me at https://ro.wikipedia where I recognized the Romanian (//**ro.**) site for Număr real! So, using 文A **115 languages v** WIKIPEDIA does **NOT translate** the English site into Romanian, but **overwrite** the English Tab with the Romanian site, **written** in Romanian!

It would be also **_no-brainer_** not look for the differences between the two sites, English and Romanian, and from here to learn whatever is to be known! Let's do it since I know how to analyze both sites and Chrome's [**Right** click & Translate to ...] does the translation from any of ... 132 languages, now Romanian, to English! So:

* I open again the Romanian site and [**Right** click & Translate to English] **numǎr real**:

"The set of **real numbers** consists of the set of *positive* and *negative* numbers with any number of decimal places (including an infinite number of non-periodic decimal places)".

I don't like it; do you?

* I open again **3C**s English website **real number** in a neighboring Tab:

"In mathematics, a **real number** is a number that can be used to **measure** a continuous one-dimensional quantity such as a distance, duration or temperature. Here, *continuous* means that pairs of values can have arbitrarily small differences. Every real number can be almost uniquely represented by an infinite decimal expansion"!

I do love this one; you can see now why I did not like, probably neither you, the other one!

This phrase had 9 links that took you through the whole world of number mathematics. I suggest you read it there in its Tab for a quick walk. I also mention it here using only one of those 9 links:

"In mathematics, a **real number** is a **number** that can be used to measure a continuous one-dimensional quantity such as a distance, duration or temperature. Here, continuous means that pairs of values can have arbitrarily small differences. Every real number can be almost uniquely represented by an infinite decimal expansion", just to take advantage of the situation, this definition explains the reason for their existence, of real numbers!

* I look at the two Tabs: DIFFERENT, normally, one was created in Romania, the other in ... America (by a Romanian refugee, hahaha) and I open a **_champagne_**.

* I compare those two sites (you can do it too) the Romanian and English and I fill a **_glass_**.

* The English **real number** is the true **3C**s website; I drink EVERYTHING that was left in the bottle, that is, I empty it and [**Right** click & Translate to English] **_prepare_** myself for WIKIPEDIA și **G**o**o**g**l**e surprises, what is to come!

Maybe one day, as the title of this Chapter says "How **G**o**o**g**l**e was born and what else could be born from it ... that could not have happened otherwise", this something will ... be born from it:

*** a group of **3** volunteers (**3V**) from WIKIPEDIA, they know each other well, *how good* they are, *in love* with **C**lear, **C**omplete, **C**oncise will create ONE site "**UNITED** About **real number**" where they will GATHER from the 113 existing websites about **real number** EVERYTHING that is best, a "**real number *** 3C**" website; a **3C** created by **3V ***!

The **UNITED** About **real number** website will have the first line something *like this* (I do not know what it will have exactly, it's their business).

Note:

*** **real number**, 實數, Вещественное число, Reelle Zahl, Nombre réel, Număr real, Số thực, riil, Número real, Reëel getal, ... ***,

obviously the **UNITED** About **real number** and **all** those ✕A **115 languages** v, so that Google search for ANY of the 113 **real number** puts this site on the first line of the first page: **UNITED** About **real number**! This **3V** group will also create a "UNITED About *decimal* system" website. Their example of success will be followed by many other **3V** groups!

I am not the only one ... dreaming, Larry dreamed too, only he woke up in the middle of the night and ... I saw him say:

I grabbed a pen and started writing! What if we could download the whole web, and just keep the links and … and with just that little Larry and Sergey created ... Google!

I am still sleeping and dreaming and I do not know where my ... pen is so I can write more:

* the definition from the English site ℝ [A symbol for the **set** of real numbers],

"In mathematics, a **real number** is a number that can be used to measure a *continuous* one-dimensional quantity such as a distance, duration or temperature",

it is **a must** in the **UNITED** About **real number** website that the WIKIPEDIA **3V** group will build!

I will show you in one of the scenes of "Aiming for a new Guinness record" *the reverse* of one of the sentences of the definition:

measuring a *continuous* one-dimensional quantity, such as a *distance*, yields a positive real number, integer, rational, or ... **irrational**, actually the correct expression of this property of a real number (you'll see); you can't find it anywhere else but at ... *ASTRA* (if it's still there), hahaha!

With this in mind, I have used here as well as in the entire book with a mouse, websites that are built as close as possible to **3C**s (**C**oncise, **C**lear, **C**omplete) for the intended purpose, regardless of the language in which they are written. What I wrote above "Important ... as well as for the author" is because I, the author, am looking to find those **3C**s websites, regardless of the language in which they were written!

The Web is available to everyone, sometimes easy some other times hard to find what you need, but the better you train, the easier the match will be for you!

WIKIPEDIA has for every subject, as it has had since its beginnings, sites in the languages in which **volunteers** from all over the world have created them in their **own language**. WIKIPEDIA opens them by clicking on ✕A, I emphasize, they are **not** translations of another version!

How many languages are there in the world? The number may surprise you! There are **196** countries, but how many languages are there in the world today? According to Ethnologue, there are currently **7,117** languages spoken around the world.

I remind you what the *start* is, so you can read a website in any of the 133 languages offered by **Google** **Translation**: [**Right**click & Translate to ...]. If after that click you have difficulties (if the whole chain of clicks has NOT *entered* your *blood* **yet**) then a visit to HELP yourself will ... help you!

Only for the reader starts here.

What is a **number**, notion with which almost every man is familiar, is the first entity I will define for this reason:

* the first teacher (in kindergarten) told us *bluntly* (so blatant that even this word remained encrusted on my brain), told us:

- kids, **number** is the **first** link with which a man built the chain of **arithmetic** and with which I will begin building the chain of your education which I would like to be a solid chain!
  After the chain of arithmetic was built, another man used it as the first link with which he built another chain (some call it a broad *area*) which he named *algebra,* which became the first link for ... another chain and
  so, on every other man adds links to the solid chain of *mathematics* which only has a beginning, the **number** but has no end, now it just has a lot of ... *areas*! Be patient until you learn all you want and you can learn from what had **number** as **first link**!

Like my first teacher, so I do, I start with what is **number, first** link of mathematics, simply defined not by me but by others (for mathematicians' definitions you need *patience*).

* For **G**oo**g**l**e** **Translation** of each Chrome site **[Right** click & Translate to ...**]**, do not forget: click **Translate**!

* For the version in the other language, if exists, click 文A **... languages**!

1) by the Romanian and the English dictionary (in both languages, just to be easy to compare).

a) **dexonline** dictionary defines ***number*** like this

b) **DICTIONARY**.com defines ***number*** similar, on everyone's understanding!

2) of WIKIPEDIA, in English and Romanian (also just to be easy to compare).

   2a) The notion of ***Number*** with a ***picture***; there is also ***Grammatical number*** in WIKIPEDIA in English!

   2b) The notion of ***Number***, no pictures; there is also ***număr (gramatică)*** selected WIKIPEDIA in Romanian!

I think we can draw the first conclusions from the first steps in this labyrinth!

From the very beginning you can clearly see how *challanging* is the use of the Web and in it ***Jimmy Wales & Larry Sanger***'s creation to find … **3C**s! How *challanging* is what am I doing here, the Romanians have called for thousands of year ***that I am driving nails into my soles***; no one forced me, I beat them alone, alone ... I cry out in pain, but I know that who laughs last,

laugh better

We will laugh better than without them, the Web, **G**oo**g**l**e** and WIKIPEDIA!

Of course, this *quote* is like a joke but the serious thing that my first teacher said bluntly to all those who were starting a new path in life, as everyone wouldgovernessto do it and that's itthe first conclusion he draws fromthe first steps in this labyrinth of the Web, Google, WIKIPEDIA, there are steps in a **labyrinth**, but surely, we will laugh better in the end!

Now, I can continue in peace towards the end about numbers and numbering systems because the A, B and C are written!

3a) **Main classification**.

You can translate from Romanian to add something to English **Main classification**.

3b) **Categories of numbers** shows all eight categories of numbers, starting with Natural numbers and ending with those

Complex numbers (you can translate each category and compare; unique, nice experiment):

Natural numbers
Integers
Decimal numbers
Rational numbers
Irrational numbers(either algebraic or transcendental)
Real numbers
Imaginary numbers
Complex numbers

4a) **Number systems**

The chain started in the 1940s by ***von Neumann***, continued in the 1970s with another link, the Internet, creation of ***Lawrence Robert*** at ARPAnet, from which Sir Tim ***Berners-Lee*** built another link at CERN on a **NeXT computer**, the world's first **Web** server, from where ***Larry & Sergey*** created on September 4, 1998 in ***Menlo Park, CA*** the link in the chain that is now in ***Sundar Pichai***'s hands who might create a new **system**

row (of course a new one if he'll … create it) in the **Numbering system** in order to define new ways in Google searches! Any website is accessible to the whole globe!

I do not think it would help if I show you all the EXISTING Numbering systems, but I am doing it because you might like it being a combination of English - **Romanian** friendship (you know how to **Translate** when interested):

Numbering system	
System	**Radix**
unary	1
Binary	**2**
Ternary	3
Quaternary	4
Quinarius	5
senary	6
Octal	**8**
Decimal	**10**
Duodecimal	12
hexadecimal	**16**
Vigesimal	20
Hexatrigesimal	36
sexagenarian	60

5) The **Radix** being fundamental for our topic, even it is defined in the table above (**Radix**), I write it again: **Radix**!

In a **positional numeral system**, the **radix** or **base** is the number of unique **digits**, including the digit **zero**, used to represent numbers. For example, for the decimal system (the most common system in use today) the radix (base number) is ten, because it uses the **ten** digits from **0** through **9**.

Theoretically, there are many bases, but only a few have established themselves and are currently used in everyday life (decimal base, in schools and hexadecimal, in computer science) or in some specific fields (binary base, in computers, octal, hexadecimal).

A, B, C had been written and *look-that's* how I got to X,Y, Z and the conclusion that if I would write one more line then I would ruin everything; it's OK if I show just *this*?!

EVERYTHING on a few pages!

        (The last 2 lines were written here, I did not write them; I would have ruined everything)**!**

Any questions?

Seinfeld: - You can't over die, You can't over dry!

What can we do with numbers?

Khan Academy (thanks [Sal **Khan**](#) and [Arshya **Vahabzadeh**](#); I'm just advertising for you) has a graphic representation of 5 min. impressively suggestive of writing the DECIMAL system (I'll leave you to enjoy yourself), here on YouTube at [***number grid***](#), or *directly* at the producer's home: [***number grid***](#) where you can sign up for free starting [***here***](#):
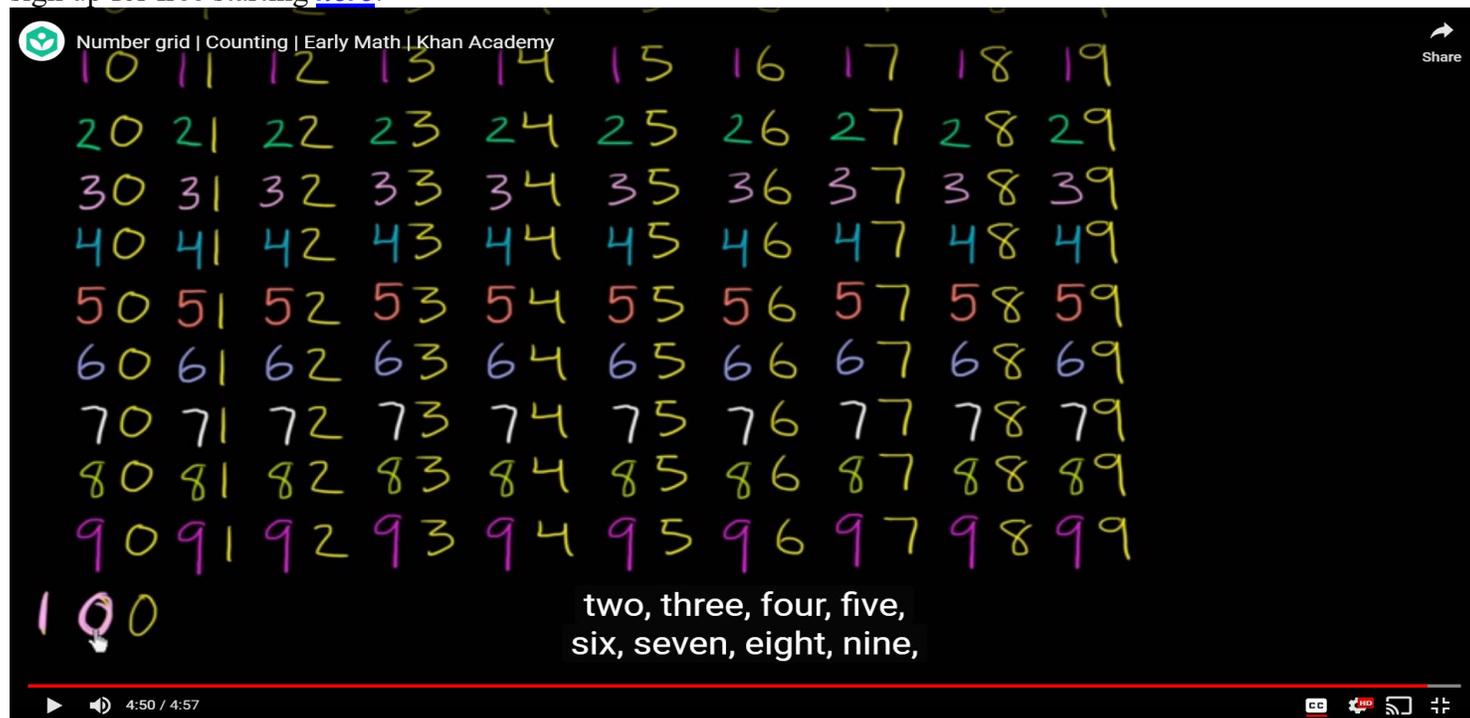
After Google brought me a *golden* link from *the bottom* of the Web, I immediately looked up the manufacturer and became *lifelong friends* (I have the proof, stamped)!

If the student entering the 1st grade will NOT know these things and thus, he will NOT become number's *best friend* and numbers will NOT be his *best friends*, as they were for me, then he WILL BE *at the mercy* of teachers who SHOULD know all these things BUT most don't!

You are still not convinced about *at the mercy* of teachers who SHOULD, BUT ...?! Then, if Mr. Spector will not convince you, no one will!

On the next link, don't click on Home because I will do it right away, just read who is the one I introduced in the previous pages, who he is [**Lawrence Spector**](#):

"He now teaches at Borough of Manhattan Community College", *does* math for ... high school graduates, who thus knows well how much Math they come from there! He wrote in [***his book***](#) (oops, I clicked Home) which is now available to anyone on the Web and he said: "*Never believe the math teacher*"!

He left it to me, because *I did not miss* what he wrote and I know well what that means, he left me to explain it knowing that that's why I didn't study Mathematics but Electronics, that I didn't want to be the math teacher never to believe! **Knowing** Math and **teaching** Math are two *different elephants* (they are *different* because they are ... **two**)!

In *Introduction* from **Skill in Aritmetic** Lawrence writes:

"Have you noticed, too, how people with a talent for **calculation** are generally quick at every other kind of **knowledge**?"

What do you think if it was written with only one word replaced by **another** one and **vice versa** (in a book every word count):

"Have you noticed, too, how people quick at every other kind of **knowledge** are generally those with a talent for **calculation**?", hmmm, which one sounds better to you? Lawrece wrote a book with Math and I write one with ... a *mouse*!

A solid education is built, like a house, on a solid [***foundation***](#)! A solid foundation for someone who wants to be *numbers' best friend* AND the numbers to be his best friend start with what is above and it will never end!

If you know someone who would like something like this, then help him read what is written in this book with a mouse before he starts 1st grade; he'll thank you later!

I have not defined what that NATURAL NUMBER is because it it a topic for a book, not just a line in a book *with a mouse*! I learned all the mathematics WITHOUT any teacher showing me the definition of NATURAL NUMBER and I did not die anymore, but I ... *rummaged* through. WHY haven't I died anymore? Because it, the definition of NATURAL NUMBER is given by God in human nature!

HEy just put it on paper and if it was not HEy then it was someone else and if there was not another then it was Lawrence OR why not... it was me; hahaha!

What *have I stolen* so far from the Web and Guinness World Records take notes day by day?

For the Necessity Teaches Man scene of this chapter *I stole* a winning Google for those looking for help to be friends with Math, *I stole* from Lawrence Spector *TheMathPage* to which I added whatever I could best, I added how HEy created the decimal system and told his granddaughter!

For the God scene *I stole* a winning Google for those looking for help to be friends with Physics, *I stole* from Walter Fendt *Apps on Physics* for *Addition of Vectors* to which, just like that, I added what I knew better to define what ... I defined there, OPINION about *the reality of imagination* is the **RESULTANT** of the FORCES (elements of the **info set**) that we have about them, **reality** and **imagination** (narrative). I used the way in which Walter Fendt builds the RESULTANT of FORCES then in this chapter that moved you here to Guinness records, I used it for the RESULTANT of the **5** forces (**5** *facts of my destiny*), RESULTANT which is **the destiny** of my life. I think this is the best thing I've written so far! There I said **Thank you Novak**, here I thank to the one who helped me to understand as I understood **the destiny** of my life, thank you to **the man** who left behind him more wisdom than any other man, wisdom which for half the people of our planet makes their happiness OR other way said: wisdom thich for half of the people of our planet is NOT even known because they use the Devil's teaching and are also happy, everyone is happy as they want to be! *Thank you Jesus Christ*! I thank Jesus that because, after long unsuccessful searches for a web page to show you how every *fact of my destiny* adds up to the one before it resulted in my **life's destiny**, I was one step away from giving up and to create me something! In the middle of a night Jesus clicked on *Addition of Vectors* where I saw the solution to my problem! From here I found and immediately *stole* for those looking for help to be friends with Physics, *Apps on Physics*! I had no choice but to steal them and use them for the benefit of others! I haven't been convicted (yet) for this and now everything is running for a place in the *The Guinness Book of World Records*; Jesus, thank you!

This is not a math book but a Thank you Larry and Sergey for what you have created, Google, with which everyone can quickly find everything they need for a personal creation! I continue with the *real number* in images, each image accompanied by a **link**! Google knows a lot more and presents everything it has in a list of links about *real numbers*, then he leaves you ... free, free, freeee in the world of real numbers! I think you have convinced yourself that there is no need for me to say another word about *rational numbers* or *irrational numbers* or *complex numbers* and I don't say; this is not a subject for just one book, but for many books, so ... I stopped here with the presentation of these *sets of numbers*!

I have only two more things to say, having a good reason to do it (you will immediately see that the reason is well-founded), I have something else to say and I must define **3C**s (**C**oncise, **C**lear, **C**omplete) way being defining for *the mathematical stamp* with which the school *branded* me! I still have something to say about **the irrational number** and about the **number zero**!

"There is *another* **zero number**, you will wonder, because I seem *to had my fill* with the first one"!

Those with a *trained* memory will remember that they barely read the last lines from where I jumped here, that [I have not even mentioned **dividing** any number by **zero (0)**], and those with an un*trained* memory will have a pleasant surprise learning that it is **the same** number zero and that **dividing** any number by **zero (0)** means ... fun!

Mrs. Lotreanu, my teacher from the first four years of primary school introduced me to the first numbers he called **natural** numbers! She wrote on the board **0**, **1**, **2** saying: "**zero, one, two** ... and when you grow up you will learn
all the other kind of numbers"!

When I grew up and learned the other kinds of numbers, **zero** was sometimes mentioned some other times was not mentioned, so I never knew what kind of number **zero** is!? I found out (and you will find out what I found out) when I had to answer Edmond and Răzvan:

- What kind of number is **zero,** dad?

Much sooner than this answer, I found out, *all by myself*, the answer to the question to which my math teacher (the best teacher I had for 11 years at L.G.L) did not have an answer, but recommended the place where I could

find (you will find out too)! In one of the mathematical analysis classes, I asked *Pegasus* (that is how we used to call him, his name was and remained in the souls of his students Cristu Petrișor):

- *how come* that an irrational number has an infinity of decimals, its decimals NEVER end but it, the number, has a precise position on the real number's axis, it has ONE PLACE of its own without being finitely defined?!

Professor Petrișor told me:

- Eugen, I don't know why and I searched a lot, I wanted to find out, I wanted to know but I didn't find an answer!

Seeing my surprised eyes, he continued like this:

I could learn all Mathematics without being able to find the answer to this question and I looked for it as much as I could! I can give you a piece of advice: go to the *ASTRA* library, you might be lucky to find something good, I didn't!

You will find out what I did with the advice I received from Professor Petrișor after you learn the last *curious* things that I collected from the Web about the **number zero**, after which I will return to (click Play, ▶ next to the speaker in the middle of the image, as many times as you want, *ASTRA* for my *last song*)!

I'll start about what else I have to say with **the number zero**, with the dictionary definition (familiar to everyone), I will start with the *number* zero after which I will return to ... *ASTRA* for the last *song*, that of **the irrational number**!

Looking at the multitude of definitions for the two words, number and zero, that you use every day, you can *see* the good reason why I pay special attention to the number zero; I think that the same special attention SHOULD BE also given by the first teacher if he would like a pleasant walk of his students through the maze of numbers!

The first thing that should be explained to the child entering the number's maze is that there is **no way** to make him understand what a **number** is that neither after the first hour of arithmetic, nor after the last hour, nor after the last hour of ... algebra and that he will only give him *the meaning* of the word, assuring him that he will come slowly, easily to understand, to know what is ... **number** (even after reading this book with the mouse you won't know, *Ha Ha Ha Ha*)!

I'll give a piece of advice to anyone even it is not my business to give advices: read the BRITISH dictionary definition for *number* (down there) where you can see that number is a ... CONCEPT! The secrets of a concept are the same as *the secrets of God*!

All the time we just get closer to what we want to know but we will NEVER know if we got close enough!? *God's ways* (in *images*) are *mysterious*, in *his wonders to perform* say only those who want to understand them, to know them, and because they fail, then they say about them that they are ... mysterious, wonders to perform but A.J. Flack knows they are ... **[Right** click & Translate to ...**]** *amazing*! Here is the time to explain why unsolicited I started giving advice! From a piece of advice given to anyone, I got to ... God's ways are in *all kinds*, only simple, easy to understand they are not! Until the discovery of the existence of electromagnetic waves, which have existed since the beginning of the existence of the universe people, including ... physicists, kept noticing curious things that they couldn't understand because *electromagnetic waves* hadn't been **discovered** yet. Until then, people, including ... physicists, had nothing better to say than ... God's ways are impenetrable, confused, unsuspected! They will say the same if the universe exists and about all other phenomena **not yet** discovered! *Good people*, stop saying... God's ways are in *all kinds* when you do not understand something; one day your descendants will understand that too!

It is the same with ... numbers and many mathematicians know that they, the number's ways are also ... amazing!

The number **zero**, written with the digit **0**, is still open to discussion if it is a natural number or NOT?!

To begin with, I present how the Romanians see this subject and I will conclude with the English just to have a broader picture of "still open for discussion" about ... *număr natural*!

If you look *here* and *here* you say that YES, the number **zero**, written with the digit **0** IS a natural number!

If you look *elsewhere* and come back *here*, then you say that NO, the number **zero**, written with the digit **0**, is NOT a **natural number**; you throw away the Web and the book and search where you can search until you are no longer a ... *novice* [Twisted are the Lord's ways, hidden are the secrets of the soul, are those who fail to unravel them just ... novices?!]

Let's see what the English say about the number zero, IS or is NOT a *natural number*?

You can see for yourself, with one click, whether the number zero, written with the digit **0**, it *IS* or *NOT* a **natural number**, sometimes YES, zero IS a **natural number**, some other times NO!?

Let's start with **GeoGebra**, where **0 is included** in **Natural (ℕ)**.

Now, let's go to GeoGebra's **keeping it real**; are you laughing at me or at … GeoGebra?

```
                    ┌─────────────────────────┐
                    │      REAL NUMBERS        │
                    └─────────────────────────┘
                    ┌───────────┴───────────────┐
        ┌───────────────────────┐    ┌───────────────────────────┐
        │   RATIONAL NUMBERS     │    │   IRRATIONAL NUMBERS       │
        │ {a/b, where a, b are   │    │ {√2, √3, e, π, .101001000,…}│
        │   integers, b ≠ 0}     │    │   nonterminating and       │
        └───────────────────────┘    │   nonrepeating decimals    │
        ┌───────┴───────────┐        └───────────────────────────┘
┌───────────────────┐  ┌───────────────────┐
│    FRACTIONS       │  │     INTEGERS       │
│ {1/2, 2/3, .125,   │  │                    │
│   .333, etc.}      │  └───────────────────┘
│ terminating or     │
│ repeating decimals │
└───────────────────┘
```

ZERO (0) does NOT have anything in common with NATURAL NUMBERS! Are you laughing at me or at …
GeoGebra?

INTEGERS → NEGATIVE INTEGERS {-1, -2, -3, …} / NONNEGATIVE INTEGERS → WHOLE NUMBERS {0, 1, 2, 3, …}

WHOLE NUMBERS → ZERO {0} / POSITIVE INTEGERS → NATURAL NUMBERS {1, 2, 3, 4, …}

ZERO (0) does **NOT** have anything in common with **NATURAL NUMBERS!** Are you laughing at me or at …
GeoGebra?

POSITIVE INTEGERS

ZERO {0}   NATURAL NUMBERS {1, 2, 3, 4, …}

Here, where all sets are well defined **0** *IS in* the set of **Natural**, you say that YES, the number zero, written with
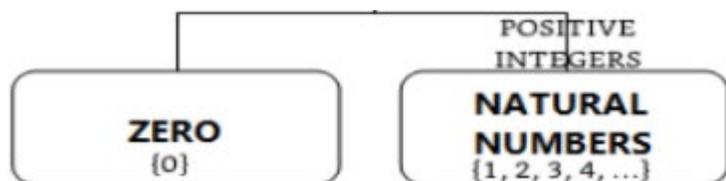the digit **0** IS a natural number, but *here* and **here** the number **zero** is NOT a natural number, it's like Romanians,
sometimes YES some other times NO, only we, the English people, are ... with two pairs of *those* (not like
Romanians), we also have *whole numbers* that include the number **zero**!
Google selects from the Web everything you ask it to select (see it again, *natural numbers*) from everything
that exists on the Web about them: "On earth we have everything, And better and worse" said the Romanian
poet *Adrian Păunescu*. When you are not confident that something there does not fit with the rest then ask the
math teacher; do not neglect what Lawrence Spector likes to say: "*Never believe the math teacher*"
neither believe all what the Web say!
The inconsistency is not in the numbers but in who ... *brings it before your eyes*!
It is good that you now know that we do not all speak the same *language of numbers* and that you are free *to
speak* as you wish as long as you are *understood*; if you make a mistake, then with a "*sorry*" you have solved
everything!
Because the number **zero** sometimes YES, is **natural number** some other times is NOT **natural number**, and
even more, **zero** was and will be considered *by some* a troublemaker of numbers until someone puts it in its
place in *everyone's eyes*; for me, as I wrote earlier, **zero** is a **superstar**!
Set Theory Symbols it's something that every student would like on the wall of her / his room:

$\mathbb{U}$	universal set	set of all possible values	
$\mathbb{N}_0$	**natural numbers /** whole numbers set (**with** zero)	$\mathbb{N}_0 = \{0,1,2,3,4, ..\}$	$0 \in \mathbb{N}_0$
$\mathbb{N}_1$	**natural numbers /** whole numbers set (**without** zero)	$\mathbb{N}_1 = \{1,2,3,4,5, ..\}$	$5 \in \mathbb{N}_1$

The number **zero (0)** IS in the set of **natural numbers** / whole numbers set (**with** zero), ONLY in $\mathbb{N}_0$ but not in $\mathbb{N}_1$ which IS the set of **natural numbers** / whole numbers set (**without** zero)! "The devil is in ... the *parentheses'* details"!

So, I'd *clean* these notations and I'll use them as **cuemath**, the Math expert:

$\mathbb{N}_0$ [**whole numbers** set] even though *some others* use **W = {0, 1, 2, 3, 4, …}**

$\mathbb{N}_1$ [**natural numbers** set]; $\mathbb{N}_1 = \{1,2,3,4,5,...\}$ even though *some others* use **N = {1, 2, 3, 4, …}**.

Zero is considered *by some* to be a troublemaker not because it has a property that no other number has (you'll see in a moment), but for something else.

The following video has graphic presentations that I recommend for inclusion here. Until the entire book is *at its home on the Web*, Google will have next to translation of the written text on the web pages the translation of the video text too, in all the languages it knows, including Romanian! Until then, there probably will not be a need for Google translation because the Romanian language will be everywhere like the English language, I am dreaming again, hahaha!

This video about **multiplication by 0 and 1**, surprisingly engaging for a 7-8 year old student, is great for what I want to show you, and I will stop here just for a moment:

INMULTIREA CU 0

Orice numar inmultit cu 0 este 0

a x 0 = 0

1x0=0	6x0=0
2x0=0	7x0=0
3x0=0	8x0=0
4x0=0	9x0=0
5x0=0	10x0=0

Any number "a" multiplied by 0 is 0
a × 0 = 0

The table on the right shows 10 examples. Not a student at that young age, not even a ... pensioner DOES NOT notice that there is a lack of ... multiplication when **a = 0**; $0 \times 0 =?$ and states that **any** number **a** multiplied by 0 is 0!

The ease, the lack of **explanation** of the fact that 0×0 was not included in the table of multiplication by **0**, ease with negative consequences for young people who are looking for clear answers, makes me **raise this alarm**!!

Is the multiplication of 0 by 0, 0×0, **is** it a **defined** operation or is it **not** a **defined** operation (i.e., an **un**defined operation) and if YES, if it **is** a **defined** operation, then what is its result, the unique number?

An **operation (mathematics)** is a **function** which takes **zero** or **more** input values (also called "**operands**" or "arguments") to a **well-defined** output value.

Underline:

a) the result, what is obtained in a mathematical operation is **a** single value, only **one** result;

$2 + 3 = 5$ (only **one** result), $2 * 3 = 2 + 2 + 2 = 6$ (only **one** result), $2^3 = 2 * 2 * 2 = 8$ (only **one** result),

$\sqrt{16} = 4$ (only **one** result because, as defined $4^2 = 16$ and $4 > 0$); note: $(-4)^2 = 16$ but $-4 < 0$!

b) an **un**defined operation is an operation that is **not** a **defined** operation; I repeat what I wrote above, in another form, an **un**defined operation is an operation in which the result is NOT a single value; examples, you will see!

c) arithmetic introduced us to **the first operations**!

Notă: I presented this video in Romanian also to highlight the following historical fact.

Communist Romania, like communist Russia, always had victorious competitors at the Mathematical Olympiads (actually at all the scientific Olympiads and sports Olympiads)! Why? şiretenia

Because the communist leaders were **cunning**, as Petre Țuțea well defined them **[Fools have a tool that takes the place of their intelligence - cunning]**, that they brought to their side wise advisers, who knew that the only way through which communism can compete Western European and American capitalism is with a scientific education and training sport at the level of talented young intelligent people in their countries and they **did it!**

Also, in this video you noted (I am not running away from 0×0, I will come back) that:

b) any number **a** multiplied by **one (1)** is equal to that number **a**, $a \times 1 = a$:

INMULTIREA CU 1

Orice numar inmultit cu 1 este acel numar

$a \times 1 = a$

1x1=1	6x1=6
2x1=2	7x1=7
3x1=3	8x1=8
4x1=4	9x1=9
5x1=5	10x1=10

Any number a multiplied by 1 is that number
$a \times 1 = a$

INMULTIREA CU 1
Orice numar inmultit cu 1 este acel numar
a x 1 = a

Citeste cu voce tare
urmatoarele inmultiri!

▶ ▶| 🔊 0:47 / 2:43

**Read aloud
the following multiplications!**

You will wonder WHY I put the screenshot with "**Read aloud the following multiplications!**", hahaha**?**
Because at the time when I learned multiplication by 1, Mrs. Lotreanu, my teacher, told us the same thing when she gave us the homework:
- Kids, **read aloud the multiplication by 1** and memorize them, and tomorrow we will see how you learned them!
The next day, after listening to several colleagues and being satisfied, the comrade teacher said:
- Bulă, let us hear you too, what did you learn?
- La la la la ... **laaa,** la la la la ... **laaa,** la la la la ... **laaa,** la la
- Ho, ho Bulă, stop! You did not learn multiplication like your other classmates did, why?
- Comrade teacher, for today I learned the *melody*, for tomorrow I will also learn ... **the lyrics**!
- OK Bulă, we will talk tomorrow, Mrs. Lotreanu concluded this part of the lesson!
I return to **multiplying by 0** and **1** and add the conclusion *for today*!?
The fact that:
a) **Zero Property**; number **zero** (**0**) multiplied by **any** number $a \in R$ has the same result, = **0**; " Zero always wins!"
- Zero the Hero, for **Splash**!
So, $0 \times 0 = 0$!

b) number **one** (**1**) multiplied by any number $a \in R$ has the result = a,
made neither **zero** (**0**) nor **one** (**1**) a ... troublemaker, but a … *Hero*! Then HOW did the number **zero** (**0**) end up in *the eyes of some* as a troublemaker of numbers?
I had an idea HOW the number **zero** (**0**) ended up in *the eyes of some* a troublemaker of numbers: from dividing **it** with … **it**self! So, I went where **the first** idea that *crossed my mind* knowing where it leads most of the time, without an **ounce** of intelligence and wisdom (to failure), but I went: **DIVIDING BY ZERO**. I immediately noticed that the entire **OVERVIEW GHIDE** published by DAVENPORT UNIVERSITY deserves special attention so I prepared for a longer stay than usual; it would not hurt to do the same, it is worth it! After Definitions and examples, under **YOU'LL USE IT...** it is written something *you will like* and if you become a programmer then **you will use it**:
"If a number is divided by **zero** in a computer program, it gives an **error** and the program **gets terminated**."
I knew this from the ... do you think I know how many years I was also a programmer, starting in **'970**, and that's why before asking **the computer** (in the program I was writing) to divide a number by **zero**, I put an

instruction in the program that checks if the divisor is **equal** with **zero** and if YES, if the divisor was **equal** to **zero** then I told the **computer**, I told it to show the **user** a message as **3C**s (**C**oncise, **C**lear, **C**omplete) and as friendly as possible so that the user can understand what he has to do! I had learned this in my first computer programming lesson from one of my *golden teachers*:

- My young students, if somehow you end up writing programs in one language or another, do not forget: your program is NOT for the computer but for **the user** of that program! Make the program "as friendly as you can", emphasizing **friendly**, in such a way that the user would say (in his mind), very clever was the one who wrote this program and under no circumstances to say, very clever is ... this computer!

If no **computer program** does NOT know how to do if a number is **divided** by **zero** and the **program ends**, then I do not wonder HOW the **number zero** (0) ended up in *the eyes of some* a troublemaker of numbers! In *the eyes* of some, but not in my eyes where the **number zero** (0) is a **superstar**!?

I remind you of the terms of the division **c / b = a**, **c** is called divident, **b** is called divisor and **a** is called quotient.

The following video introduces and then uses a lot the term "undefined", which is the negation of defined, "which is not defined". Since that is how it is used in the video, undefined, that is how I will introduce it too: *__undefined__* [1. without fixed limits; indefinite in form, extent, or application: 2. not given meaning or significance, as by a definition; **not** defined or explained].

Even without warning **VIDEO: WHY DIVIDING BY ZERO IS UNDEFINITĂ** I'd **click**: **Why dividing** by **zero** is **undefined | *Khan Academy***, Khan Academy summarizes what it means to **divide** by ... **zero** (divided by **zero**), so I *open* my eyes and ears starting with Steven Write's metaphor "**Black holes** are where God divided by zero" and I stop for a moment here, where it says that divided by **zero** is undefined!

The question that Khan Academy wants to answer is WHY dividing by **zero** is undefined and it displays it from the beginning (good sign). Let's hear and see together "WHY dividing by **zero** is undefined".

I will highlight, with screenshots and my note, only the *key* points of Khan Academy's response.

After 1 min. in the clip see the first *key* moment:
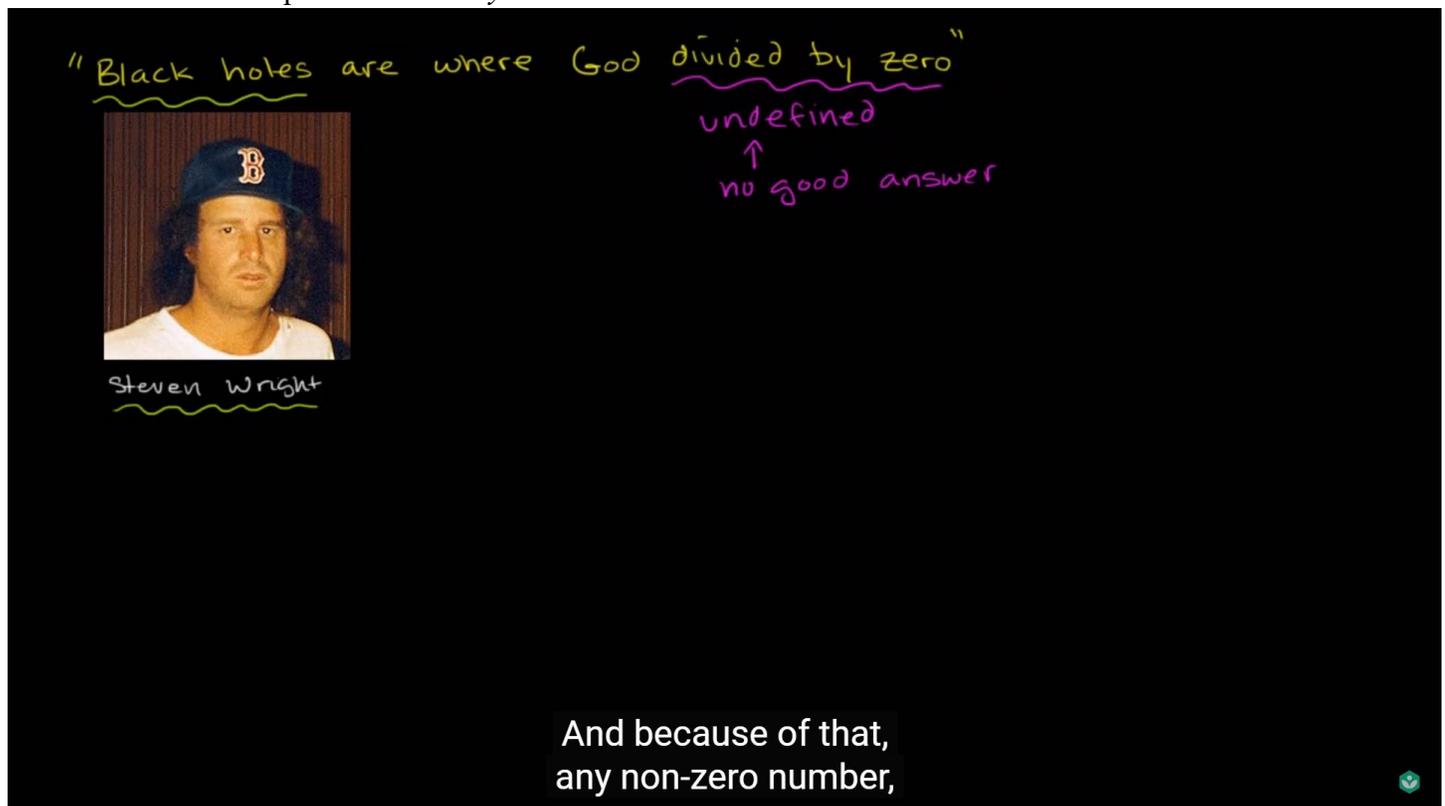
Note:
The Khan analysis is only for " any **non-zero** number" divided by **zero**; hmmm, not dividing **it** with **it**self!

"Black holes are where God divided by zero"
undefined
↑
no good answer

Steven Wright

divided by zero, is
left just "undefined."

For any *non-zero* number divided by zero, the result is just "undefined."!

Note:

The title of Khan Academy's video is "Why dividing by zero is undefined" NOT

"Why any *non-zero* number dividing by zero is undefined";

each man with his own sins, or does Khan have a surprising plan? We'll see that right away!

I closely watch *the approach* to dividing by **zero** from both directions, through positive values and negative values smaller and smaller, *closer,* and *closer* to **zero** when the division result *approaches* $+\infty$ and $-\infty$ respectively, which *means* undefined:

"Black holes are where God divided by zero"
undefined
↑
no good answer

Steven Wright

$$\frac{7}{0} , \frac{8}{0} , \frac{-1}{0}$$

$$\frac{1}{0.1} = 10$$

$$\frac{1}{0.01} = 100$$
↓
$$\frac{1}{0.000001} = 1,000,000$$

$$\frac{1}{0} = +\infty ?$$

$$\frac{1}{-0.1} = -10$$

$$\frac{1}{-0.01} = -100$$
↓
$$\frac{1}{-0.000001} = -1,000,000$$

$$\frac{1}{0} = -\infty ?$$

And this is why
mathematicians say

"Black holes are where God **divided by zero**"

undefined
↑
no good answer

Steven Wright

$$\frac{7}{0}, \frac{8}{0}, \frac{-1}{0}$$

$$\frac{1}{0.1} = 10$$

$$\frac{1}{0.01} = 100$$

$$\frac{1}{0.000001} = 1,000,000$$

$$\frac{1}{0} = +\infty ?$$

$$\frac{1}{-0.1} = -10 \qquad \frac{1}{0} = -\infty ?$$

$$\frac{1}{-0.01} = -100$$

$$\frac{1}{-0.000001} = -1,000,000$$

there's just no good answer here.

For the result of dividing a **non-zero** number by ... **zero** no good answer here, isn't here a good answer**?** Wrong! Why?

The answer **"for any non-zero** number divided by **zero**, the result remains only "undefined."" is a very good answer, because that is the result, undefined, whether you like it or not**!**

I asked myself above "every man with his sins, OR Khan has a surprising plan"? The answer time has come: yes has, he call it "The problem with dividing zero by zero" and see it here: ***dividing zero by zero*** where he concludes, **O/O = ? UNDEFINED**:

$$\frac{1}{0.000001} = 1,000,000 \qquad \frac{1}{-0.000001}$$

$$\frac{O}{O} = ? \quad UNDEFINED$$

$$\frac{-0.1}{-0.1} = 1 \qquad \frac{-0.001}{-0.001} = 1 \qquad \frac{-0.000001}{-0.000001} = 1 \Rightarrow \frac{O}{O} = 1 ?$$

$$\frac{O}{-0.1} = O \qquad \frac{O}{-0.001} = O \qquad \frac{O}{-0.000001} = O \Rightarrow \frac{O}{O} = O ?$$

Every man with his sins, but every sin has an ... ***umbrella to protect you*** from it! The umbrella of Khan's sin under which I sat protecting myself, is that the examples, no matter how good they were, never convince mathematicians as the axioms, definitions, proven theorems always did! Yes, from here we have **an idea** why **O/O is UNDEFINED**, but **not a proof**, a demonstration! So, I looked (and I'm still looking) for something to

convince you, as I would convince a mathematician, without examples, that <mark>0/0 = UNDEFINED</mark> or who knows what it's like**!** When I find it, you will be among the first to see that <mark>0/0 is UNDEFINED</mark> or how is it!
Could this be the root cause of **zero (0)** being treated as a *troublemaker*: <mark>"Black holes are where God ... divided by zero"</mark>, **any** non-zero number divided by **zero** has a result <mark>undefined</mark>**?** We will see!
The lack of explanation, **lack** of **proof** implies the **innocence** of the charge; therefore in my eyes the number **zero** (**0**) is a **superstar**, resists *with dignity* the lack of proof!
Let's not forget that the number **zero** and the ***digit* 0** didn't even exist in the world until the Arabs ***adopted*** them from the ***Indians*** in the 8th century (I didn't say that, but I like to ... repeat it)! Their major contribution to the decimal number system was the introduction of the **digit zero**, whose first appearance is in the works of ***al-Khwarizmi*** "the father of algebra" (derived from arithmetic) in the Manual of Arithmetic (Al-Khwarizmi on the Indian Numerals).
Let's not forget neither that we are in the ***21st Century*** and Arithmetic manuals like Al-Khwarizmi's have been written and will be written for at least as many centuries to come, and who knows where the number **zero** and the digit **0** *will end up*?!
Change is the only constant, so new *visions*, with new axioms, properties and theorems will be added to the set of natural numbers and the existence of the number **zero** and the digit **0**.
Let's not forget *one*, let's not forget *another one*, but the time has come for me not to forget what I wrote at the end of the first part of this Chapter:
secondly, to remember or learn something about **dividing any real number by **zero (0), which will be the biggest mathematical surprise of your life, and if it is not then *give me with this book over the head*;
woe betide my head (as well as ... **Dorel**'s) if I do not do a job as I said I would!
I am going back to where it all started. In the 9th grade, around 196**?**, in the first lesson on ***functions***, Professor Petrișor told us something like this:
- Tinerii mei elevi totul va fi simplu, ușor de înțeles până când vom ajunge la limite de funcții de forma f(x) / **g(x)**, nu va trece mult timp până atunci, dar când lim **g(x) = 0** iar limita lui f(x) este un număr real (ℝ) oarecare atunci ...

$$x \rightarrow x_1$$

și după o pauză care mi s-a părut o veșnicie ne-a spus, *râzând pe sub mustață*,
- My young students, everything will be simple, easy to understand until we reach function limits of the form f(x) / **g(x)**, it will not be long until then, but when lim g(x) = 0 and the limit of f(x) is some real number (ℝ) then ...

$$x \rightarrow x_1$$

and after a pause that seemed to me an eternity he told us, *laughing under his mustache*, you knew that **1 = 2** and that **2 = 5** and that **5 = 101**and in a few minutes, writing on the board and talking to us, he proved to us that it is so:
A) **The first "demonstration"**:
We know that: **0 * 1 = 0** and **0 * 2 = 0**, right?
No one said a word, of course true!
So:
     a) **0 * 1 = 0 * 2**, true? Of course!
We divide both members of the equality by the same number, it is a property of equalities. *I choose, the same* ***number* 0** [professor Petrișor wrote this on the board, he did not have ... links, and I cannot write how it is there in the upper left corner of the new Tab, and so,
     b) **(0 * 1) / 0 = (0 * 2) / 0**   and then
     c) **(0 / 0) * 1 = (0 / 0) * 2**   you do not like it, but I have nothing else to do]!
So far everything is fine, the teacher asked.
- Of course, answered the class *chorus*!
După simplificarea lui **(0 / 0)**, **egali** în ambii membrii ai egalității **(=)**, a continuat prof-ul, avem: **1 = 2**;
After simplifying **(0 / 0)**, **equal** in both members of the equality (=), the professor continued, we have: **1 = 2**; any questions?
No one said a word because none of us saw anything wrong!
B) **The second "demonstration"**:
Let **1 = x**.

Multiplying both members by x yields: $\mathbf{x = x^2}$.

Subtracting **1** from both sides of the equality gives: $\mathbf{x - 1 = x^2 - 1.}$

Dividing both members by the binomial $\mathrm{x} - 1$ we have:

$$\frac{x-1}{x-1} = \frac{x^2-1}{x-1}$$

$$= \frac{(x+1)(x-1)}{x-1}.$$

So far everything is OK, the teacher asked.

- Of course, the class *chorus* answered again!

After simplifying $\dfrac{x-1}{x-1}$ in the **first** and $\dfrac{)(x-1)}{x-1}$ in the **last** fraction, we get: $1 = x + 1$.

But, since from the beginning we considered the equality $1 = x + 1$, we have:

$1 = 1 + 1 = 2$, well **1 = 2**; any questions?

Again, no one said a word!

- If at least one of the two "proofs" were correct, then mathematics would not exist! Tomorrow, for those who will not find the mistake until then, I will show it to you, concluded professor Crisu Petrișor, Pegasu as we used to call him!

The next day:

- Who found the mistake? the teacher began.

No one uttered a word, because none of us had seen any fault in the teacher's demonstrations, and there was obviously one, because otherwise mathematics would **not** have existed; exactly what the professor had said!

- You reached the 9th grade without knowing what you had to be told on the first day when you heard "the division of two numbers...", then you should have been told that, write it down now and tell your children too, if you will have: **division** by **zero** is **not allowed**, does **NOT exist** compelling reason for not allowing division by **zero** is that, if it **were allowed**, if it **existed** then many **absurd** results (i.e. *fallacies*), would arise, mathematics would not be what it is, **mathematics**!

What I proved is an example of an absurd result: $1 = 2$, and I can also prove that $2 = 5$ and that $5 = 101$.

So, keep in mind, and after another long pause followed:

division by **zero** is **not allowed**, does **NOT exist**, nothing else like dividing by zero is undefined, or O/O is UNDEFINED; nothing else, **division** by **zero** is **not allowed**, does **NOT exist**!

I'll just show you now the first place where I divided by zero, *here* in the first **"demonstration"** and then *here* in the second! The rest was the correct application of the properties in *equality (mathematics)* that you clearly have in *basic properties* (the professor showed us a paper that he had written). Here, at:

* *Substitution property,* the last of Some specific examples clearly *says:*

* For any real numbers *a*, *b* and *c*, if *a* = *b* and *c* is not 0, then (**only** then) *a/c = b/c*!

Any questions? I learned this in the last year of the Faculty of Mathematics at the University, Professor Cristu Petrișor surprisingly continued! The professor who told us about this **not allowed** (it's not an axiom, definition, theorem... but simply a **prohibition**) said Pegasu', that professor also remembered that an Italian mathematician who at the time was writing a book on Arithmetic and Algebra on based on some *visions* of his, he was the first to "prove" that $1 = 2$ and immediately formulated the **not allowed** prohibition: **division** by **zero** is **not allowed**, does **NOT exist** because, if it **were allowed** it WOULD BE like a *PanTex*!

Division by **zero** is **not allowed**, does **NOT exist**! That is what a **superstar** does, the number **zero (0)**, *does not interfere* with absurdities, contradictions, falsities, wrong demonstrations!

Arriving in America, in love with the power of **Google**, I wanted to find out who COULD BE that Italian mathematician who, writing a book on Arithmetic and Algebra, WOULD have been the first to "prove" that $1 = 2$ and immediately formulated … **not allowed**, does **NOT exist**! The closest to Prof. Petrișor's memories that **Google** found for me was a mathematician who was born in **Cuneo** on August 27, 1858 (19th-century image of Cuneo):

His name: **Giuseppe Peano**!

ARITMETICA *GENERALE* and **ALGEBRA** *ELEMENTARE* written by **Peano** and published not long ago in 1902, added the vision of Giuseppe Peano who had added to the vision of *Richard Dedekind* who in turn had added to the vision of ... and this list has a beginning, *Muhammad ibn Musa al-Khwarizmi*, but who knows if it will end!

I started with 0/0 is UNDEFINED = 0/0 is NOT DEFINED and ended with the **prohibition**:

division by **zero** is **not allowed**, does **NOT exist** because if it **existed** then WOULD BE ...!

Exploiting the WIKIPEDIA about *dividing by / to zero*, which speaks volumes about the interest of Romania and the United States in mathematics education, a subject in **only** 🗛 **38 languages**, **G**o**o**g**l**e offers (with … **Right click** & Translate …) you the answer to anything that would puzzle you about the **prohibition**, starting with: "A compelling reason for not allowing division by zero is that, if it were allowed, many absurd results (i.e., fallacies) would arise."; read this here, *fallacies*, haha, my teacher Cristu Petrişor's teacher created this part of the website about fallacies, hahaha!

At the beginning of this section, I wrote that:

"Reading these lines confirms that what I was convinced was **not** something wrong!

First, either to remember something you forgot or to learn something you never knew about **irrational** numbers and about **dividing** any real number by **zero (0)**, …"! Was what I was convinced wrong**?!**

I will add a few lines about my **superstar** after I finish the selection of Khan Academy's golden contribution; just a few lines!

Everything produced by Sal Khan and Arshya Vahabzadeh at (you will open their Romanian website because the English does not have the video, I would like you to see; you can switch language any time) **Khan Academy** is of exceptional quality. If you want to become a good doctor then, first translate to English and then

play the video from History "What's in the Blood"; play the video until you are convinced that you will be able to become a good doctor! With this

knowledge about your blood, all the medicine will enter *your blood*! I clicked and became ... my doctor, not good, but *trustworthy* (now you click ⤫A **56 languages v** and choose English just to see the difference and the power of **G**o**o**g**l**e **translate**)! From every experience, even a small experiment like this, I have learned something about the Web and now I am writing this book to share my good with you!

If even Khan Academy says that <mark>there's just no good answer here</mark> for **the result** of **dividing** a number (natural, real, complex, etc.) by **zero**, and my teacher's teacher demonstrated WHY **division** by **zero** is **not allowed**, does **NOT exist** because if it **existed** then WOULD BE … then... ***Warning*** when you browse the Web (quite a lot of 3 dots but … haha, worth browsing, especially to see how Khan solves the simplest ***division problem***!

Somewhere, *something* about <mark>there's just no good answer here</mark> is not well placed (as in the question "***what came first, the egg or the chicken?***"; it was the chicken and the rooster like ***Adam and Eve***)! I am not trying to find out *what*, *where* else ***is it rotten***?

I am no longer afraid that if I leave you in the company of "WIKIPEDIA & **G**o**o**g**l**e **Translation** " you will not be able to learn everything you want about ***division*** (mathematics)!

I opened for you the gate of numbers, my best friends, I tried to be their best friend; enter and go as far as you can, it is a place full of rare flowers but also of ... thorns, the first one is my **superstar**, it is **zero, 0**!

One thing that if you take from this book will be enough to navigate through this labyrinth of numbers and their use in everyday life!

You can say that you have **understood** *something* ONLY if you can answer the question: WHY is that *something* the way it is**?! WHY?!**

That *something* is the way it is for only ONE reason (with many ... OR):

* because so it was named, OR so it was defined (its definition), OR so it was demonstrated to be, OR so it was accepted as an axiom (postulate), OR so is the rule, the law, OR so God **advises** to be, or so the Devil **wants** it to be!

If you know another OR **or** reason then please add it.

There is no need to add the reason: "that *something* is as it is" because that is what also my wife said... and she did not say anything after that, for about half an hour!

From here on everything will be ***flower in the ear*** to navigate through this labyrinth of numbers and their use in everyday life!

I said I would add a few lines about my **superstar** after I finish the selection of Khan Academy's golden contribution to the treasury of early math education!

Here they are:

The English put it in a special place, at the ***origin*** of ***integer numbers***! I put it (for English Romanians) as the ***epicenter*** of the numbers! It is the ONLY **complex** number $[z = a + bi$, for a = b = 0 este $0 + 0i = $ **0**$]$ which is also **real** ... **zero (0)**!

I have moved zero from the origin of integers to where it belongs: the epicenter of a system, **the epicenter** of ***the decimal system***!

The NUMBER was first in man and then in math books and dictionaries and in... **G**o**o**g**l**e, just as flight was first in birds and then in the head of ***Traian Vuia*** and ***Henri Coandă*** and then on the ... sky flying, an AIRPLANE!

This *book* is not, as I said before, not a Mathematics book, to define what that is... NUMBER, it's just a book with a mouse about what's left in me, what I've learned about the world I live in and what I've learned from my father and from Nadia and from all those in whose time I lived! By the way, the Romanians used to say in ***raillery*** that Nicolae Ceaușescu was the President of Romania during the of time ***Ilie "Nasty" Nastase*** [***and*** some ***of his wives,*** how many are there now (?!), *speaking* about NUMBERS]; I lived in the time of Nasty and ***Nadia Comaneci***!

And if I keep writing about NUMBERS then I think the analogy Ilie Năstase, Donald J. Trump, two men who made my life more beautiful than if I didn't exist in their time, I think you will like it!?

"In my youth, all the matches of "Nasty" gathered all my friends at my house to watch his matches against Stan Smith or Arthur Ashe, Borg or Connors, and on August 23, 1973, we did not go to the usual parade on the anniversary ***the coup of August 23, 1944*** but we celebrated the first ATP ***world No. 1***, here ***he is***! I cannot miss the opportunity for every Romanian to know that Ilie Năstase IS the first ATP world No. 1 since the day

Romania: freed itself from the fascist yoke and medal **"Liberation from Fascist Yoke"** has since been awarded to many brave Romanians, but Romania came under … **the yoke of communism**!".

Now, in my old age, Donald J. Trump, 45th / 47th (**?**) President of the USA makes me happy that every day is for me

"the best time of my life, adding another page to this book with a mouse & seeing US Democrats angrier than yesterday"!

Their NUMBERS, Năstase and President Trump's put them almost on a par:

* President Trump is older than the world No. 1 exactly 1 month and 4 days!

* President Trump has 5 children like world No. 1 Năstase, 5!

* The NUMBER of wives of President Trump = 3, 2 less than the world No. 1 Năstase = 5.

That's how **Ilie Nastase** asked **Ioana** the last wife until today, because tomorrow... Lord knows! Slight advantage for world No. 1 Năstase, but time and **vigor** doesn't stop President Trump from ... equalizing but also time and *vigor* do not stop "Nasty" from increasing the difference, hahahaaa! Without the **Wives of Ilie Năstase, insults and serious accusations! Brigitte: "I'm tired of his ex-wife's callousness"** **"Nasty"** is not *naughty*, *disgusting*, *discourteous*, etc. like a real ... *Nasty*!

President Trump can ... tie the score for the number of wives if **Melania** lets him, but you "Nasty" also can tie the score of the number of Presidencies, not of the USA because the country where you are President has no importance! Nasty, if you run and if **Klaus Iohannis** from Sibiu, like me, doesn't run, then I and all my readers will vote for you! I know, you will say, with that many... ifs, if and as if … "I'd better leave you in God's peace"!

I agree with you "Nasty" and thank you, thanks for the moments of happiness you gave us living in *our time*!

I return to the conversation with Professor Petrișor, when I asked him:

- *how come* that an irrational number has an infinity of decimals .... and he answered me:

- Eugen, I do not know why, and I searched a lot, I wanted to find out, I wanted to know but I didn't find an answer and then continued:

go to **ASTRA** library, maybe you'll be lucky to find something good, I didn't!

That afternoon, after I had lunch, I did not stop until ASTRA. It was very difficult to define what I was looking for to those I initially asked for help; but slowly, slowly, from one librarian to another, I learned how to ask what I wanted to know.

Moisil once said: "People must learn to think correctly, to know what they **want** to **figure out** when they **ask** something! The school of accuracy is mathematics"!

I knew what I wanted to know, but I did not know **how** to **ask**, the reciprocal of Moisil's quote!

Finally, an old librarian, past his second youth, tells me:

- Young man, I have in that top corner some old Russian translations that no one has touched for years. Russians are good at numbers so try your luck with these books and he brought three of those translations to my table!

I opened the first one that *fell into my hand,* and I opened it where *the Lord gave it*! Where do you think *the Lord gave me* to open it? On the page on which it was written:

"All kinds, *types of positive real numbers* are obtained in **the process** of **measuring** a line segment with a unit of measure! Depending on **HOW** that procedure is completed, the type of positive real number results: INTEGER or RATIONAL or IRRATIONAL."

I could not believe it! I eagerly read the pages that explained this! All my questions about numbers were answered; numbers became my best friend that day and later I became the best friend of numbers (*I'm dreaming*)!

Below I have *dropped* everything I remember now from what I learned **not** at Gheorghe Lazăr High School or at Electronics in Bucharest but at ASTRA in Sibiu, in two and a half hours!

Then, upon returning home, I did not have dinner until I wrote down on a few blank pages EVERYTHING I remembered that *happened* at ASTRA, and the next day I revealed to Professor Petrișor what I found out there. I have added here everything that Google has brought me useful from the Web. That moment is still alive in my mind and soul.

"HOW can the **procedure** for **measuring** (determining the **length** of) a line segment be carried out", procedure that results in ONE certain type of **positive** **real** number: RATIONAL ($\mathbb{Q}$), INTEGER ($\mathbb{Z}$) or IRRATIONAL (a suggestive presentation of the IRATIONALs I found in **LibreTexts MATHEMATICS** **set of numbers**; the diagram of the structure of the set of **real numbers** highlights the "isolated world" in which **irrational numbers** exist:
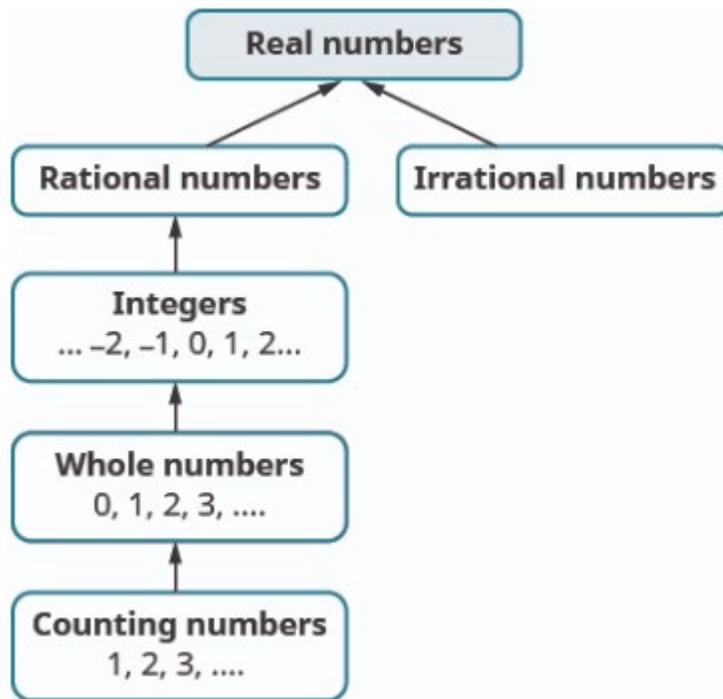
For the set of **Irrational numbers** there is no **list notation** here using the braces "{" and "}", with the elements separated by commas, *at least* with the most famous ones (as with *movie stars* lists), because it is difficult to do. I chose, from the crowd of sites, I had to choose, I chose about **irrational number** what you see up there (hahaha)!

The set of irrational numbers can be defined as the **difference** between the sets $\mathbb{R}$ and $\mathbb{Q}$ (very true since in the picture above, **Real numbers** ($\mathbb{R}$) only include **Rational numbers** ($\mathbb{Q}$) & **Irrational numbers**:
$I = \mathbb{R} \setminus \mathbb{Q}$ i.e. $I = \{x | x \in \mathbb{R} \text{ AND } x \notin \mathbb{Q}\}$; I is an infinite and uncountable set.

The easiest procedure to show on a book page is the procedure for measuring the length of a line segment.
To measure something that is measurable requires a **unit** of measurement and a **procedure** (process) of measurement.
The real numbers axis is *the first* line on which the real numbers were placed.
"The number axis is a straight line on which we fix an **origin**, a **direction** and a **unit** of measure"!
The **unit** of measure, a **1**, whatever that 1 is, for the length any can be chosen: **1** m., **1** mm., **1** Km., **1** inch, **1** foot, **1** mile, a simple ... **1**!
I will describe the procedure for measuring the length of
the finite line segment**AB:**
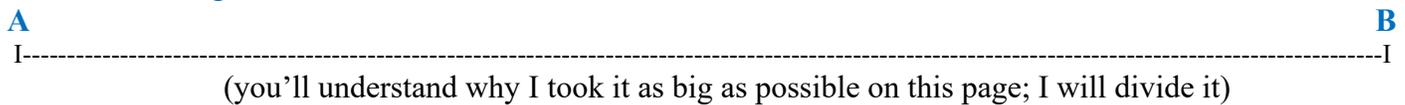
A   B
I---I
                    (you'll understand why I took it as big as possible on this page; I will divide it)
                                                                              C   D
The chosen unit of measure, a 1, is the segment I---I; **CD** = **1**, whatever that 1 is!

The way in which the measurement procedure will be carried out will determine the size of the segment AB measured with this unit of measure (segment **CD**) and will generate one of the categories, one of the types of positive real numbers.
To measure means to see (what's hard about that?), to see how many times the unit of measure *is included* IN the segment **AB** to be measured.

                                                C   D
The **unit** of measurement, segment CD, I---I has been included (as we chose the segments sizes) **exactly 3** times without any … *remnant* (**remainder**):
A
B
I---I---I---I
This is the first situation in which the measurement procedure can be carried out (and ended).

1) If the measuring procedure **ends** after the first step, if the **unit**, a **1**, is contained **exactly** a **number** of **times** in segment **AB**, without any *remnant* **(remainder)**, then the size of segment **AB** is equal to that **number** of times; the measurement procedure defines an **INTEGER**!
So, the size of the measured segment **AB** = **3**; the measurement procedure *generated* the **INTEGER**, number **3**!

2) If the measurement procedure does NOT end after the first step but remains a **remainder**, then the measurement procedure must be CONTINUed until ... until when (you will see until when, by no means until it **ends**, since it might not end no matter how long it CONTINUES)!
To exemplify the measurement of the length of the finite line segment chosen **AB** so that a **remainder** result I must decrease (or increase) the **unit** of measure (segment **CD**); I increase it (you will see why):

            C   **D**

chosen enlarged **unit** of measure: I--I
The unit of measure chosen now is included in the **AB** segment **2** times AND remains a **remainder RB**:

A   **R**
B
I---I--I---------------------------------------I
I know, so far, that segment **AB** *contains* **2 units** of measure, but it ALSO has a **remainder**, segment **RB**:

R   **B**
 I---I.
The lenght of *segment* **AB** = **2 +** a **remainder** (**RB**) = **2 + RB**
HOW should the measurement procedure be CONTINUed, the measurement unit (**CD** segment) being greater than the obtained **remainder**?
Here, now the **decimal** system steps in and *tells me* HOW to CONTINUE**!**
I consider a (guess o … **what**?), yes, I consider a **tenth** of the unit of measure, i.e., 1:**10** = 1/**10** of **CD** as a new **unit** of measure for measuring the **remainder**; this **tenth** will be included **less** than ... **ten** times in the **RB** segment!

                       C   **D**   **M N**

 1:**10** = 1/**10** from the segment I--I it's *like* this I----I (that's why I **increased** the unit of measure and let there be a **remainder**, so that its **tenth** part is big enough, so you can see it)!
Note:
if the system in which we measured was ... octal, then I would choose an ... **eighth** part, 1:8 = 1/8, etc.!
Now I **repeat** what I did with the quantity to be measured and with the unit of measure **1**, this time having:
* the segment to be measured, the segment **RB** I--I, the **remainder**, and
* the new unit of mesure, the segment **MN** I----I, 1/10 = **0,1** from **unit** of measure **1**!
How many times the new unit of measurement, the **MN** segment, is *contained* in the **remainder RB**?
R   **T B**
I----I----I----I----I----I----I----I----I----I-**I**; **MN** is *contained* in the **remainder RB** **9** times and ... there is a **remainder** (**TB**) left!
RB = **9** times one tenth of the **unit** of measure and ... there is a **remainder** (**TB**)!
RB = **9 * 0,1** + a **remainder**! **RB** = **0,9** + a **remainder TB**.
So, **AB** = **2** + **0,9** + **TB**. So, so far: **AB** = **2,9** + **TB**.
HOW should the measurement procedure be CONTINUed?
Likewise, with the measurement of **TB**, only *the first* **new** unit of measure will be [1:10 = 1/10] of the **previous** unit of measure **MN** I----I, i.e. [1:10 = 1/10 = **0.1**] of (0.1 of **1**), (**0.1 of 0.1**) = **0.1 * 0.1**; it will be **0.01**!
The next **new** unit of measurement, if needed, will be **0.001**, and the next, if needed, will be **0.0001**, etc.! There is no need to write a word about the measurement procedure; I said everything!
I must do the measurement procedure in ALL possible situations until... you will see immediately until when:
2A) until there is **NO remainder** left, in which case the measuring procedure **ends**; its result will be a
     RATIONAL number,
or
2B) until at each step there is a **remainder**, *BUT*:
2B1) the measurement results are REPEATED **periodically**, a group of decimals **repeating periodically**, the result measurements will also define a **RATIONAL** number [as in the **2A)** case], because:
A *periodic decimal number* can be put, written as an **ordinary fraction**.

Here is a good start for those interested: *TRANSFORMATION OF A PERIODIC DECIMAL FRACTION INTO AN ORDINARY FRACTION*, with continuation in the links in *all these examples*!
If the result of the measurement will define a RATIONAL number, we say that the segment **AB** measured is *commensurable* with the unit of measure!
2B2) the measurement results will **NOT** be REPEATED **periodically**! In this case the measurement result will
       define a number **IRRATIONAL**!
How do you know, without repeating ∞ times the measurement procedure, that in *some cases* this will happen, they will **NOT** REPEATE periodically as in those where they **will** REPEATE periodically and then you easily see this?
This is *another fish dish* and today it is not served at our restaurant because the specialist, who did special courses at ASTRA, drank a lot of Courvoisier last night and is free today! Few restaurants cook this *other fish dish*!
If the result of the measurement will define an **IRRATIONAL** number, we say that the measured segment is *incommensurable* with the unit of measure!
So, there are **4** cases [**1**), **2A**), **2B1**) și **2B2**)] in which **the measurement pr**ocedure can be carried out thus defining the **3** kinds of positive real numbers, the negative ones you can see in *the mirror of real numbers* placed *on the head* of my superstar **0** [two cases will define the same kind of number, a **RATIONAL** number], and another **2** cases will define, one an **INTEGER** number and another an **IRRATIONAL** number!
The **4** cases can be *presented* in another way.
Each kind of positive **real number** is *obtained* in *the ASTRA* **measurement** procedure of a line segment using a **unit** of **measure**:
1) **INTEGER** number, when the measurement procedure **ends** after the first step!
2) **RAȚIONAL** number, when the measurement procedure is carried out in one of these ways:
    a) at some step there will be **NO remainder**,
    b) from some step the measurement will always have a **remainder**, but the **remainder**'s measurement results
       will **REPEAT periodically!**
3) **IRRATIONAL** number, from some step the measurement will always have a **remainder**, but the **remainder**'s measurement results will **NOT** be repeated periodically; the measurement process does **NOT** end!
 "The Way I Heard It" at ASTRA ar spune *Mike Rowe* would say!
Famous irrational numbers are *scattered* on the Web, but I do not think it's difficult to bring them to this page!?
Examples; see how simple it is?!
$\sqrt{2}$ = 1,414213562373095.... one of the **IRRATIONAL** numbers dearest to me as the number *π (spelled out as pi)*,
L= 2Rπ, **π** = 3,14159265358979323846264338327950288…!
I never forget **e** is also called *Euler's number or Napier's constant*, e = 2,71828182845904523536 ... !
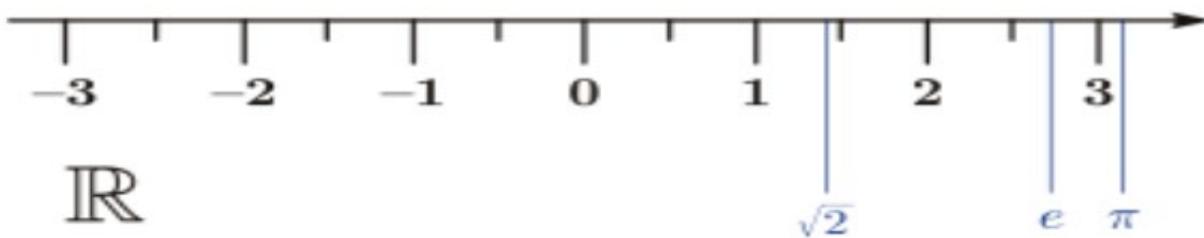
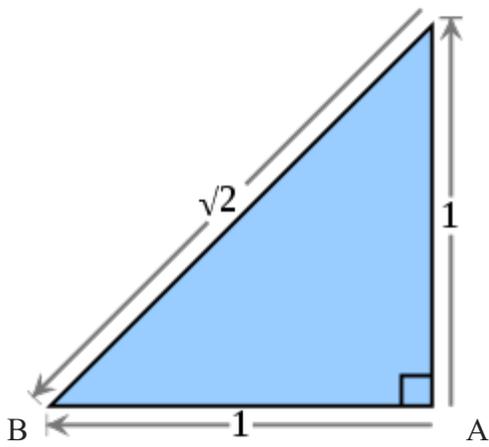*More Examples*!
$\sqrt{2}$ *truncated to 50 decimal places*

$\sqrt{2}$	1.41421356237309504880168872420969807856967187537694

Why $\sqrt{2}$ = 1,414213562373095.... is one of my dearest IRRATIONAL numbers? Let the right triangle be **ABC**:
                    C

B ←————————1————————→ A

I don't ask what came first: the **irrational** number or the **unit** of real numbers' axis because I will make the same mistake as those who ask "*What came first: the **EGG** or the **CHICKEN?***". First there was the chicken and the **rooster** and that's how the egg was created!
Likewise, if I had asked myself:

ʉ

* if **I------------I** the **unit** of **measure** (**ʉ**) was **not** chosen as much as it was chosen, but larger or smaller, then number $\sqrt{2}$ it was still there, the answer was ... "first there was the chicken and the rooster"!
So, I don't ask myself anything anymore, I check!

                                                                    B   *M*   **C**
If I measure the length of the hypotenuse, the segment **BC**: I-------------------------------I----------------------------I with the

                                              B   *M*
unit of measure **B***M,* where *M* is **in** the **middle** of lui **BC**: I------------------------------I, obviously the **unit** of measure **B***M is included* ... **2** times in the **BC** segment! **Unit** of measurement **B***M* = **1**, so the length of the hypotenuse of the right traungle ABC, the segment **BC** = **2**, the INTEGER number **2**!?
I am not a *magician*, but I just proved that the length of the hypotenuse of the right triangle ABC is equal to **BC** = **2**, not with ... $\sqrt{2}$ as the world knew from *Pythagoras*!
Oooo, I forgot: **BC** = **2** * **B***M* where **B***M* = half of ... **BC** = $\sqrt{2}$; **B***M* = $\sqrt{2}$ / 2!
The IRRATIONAL number $\sqrt{2}$ did NOT magically disappear, it *moved* to ... **unit** of measurement **B***M*!
Is Albert Einstein right with the *theory of relativity* or is it just something that **will take you everywhere**, hahaha?
Everything is *relative* where you ... put $\sqrt{2}$, to the **result** of the measurement (hypotenuse **BC**) OR to the **unit** of measurement!
The clearest representation of the fact that the number $\sqrt{2}$ = 1,414213562373095.... has ITS own position, like all other real numbers on the real number axis, is not bellow there, because it was *put* by *others* there:
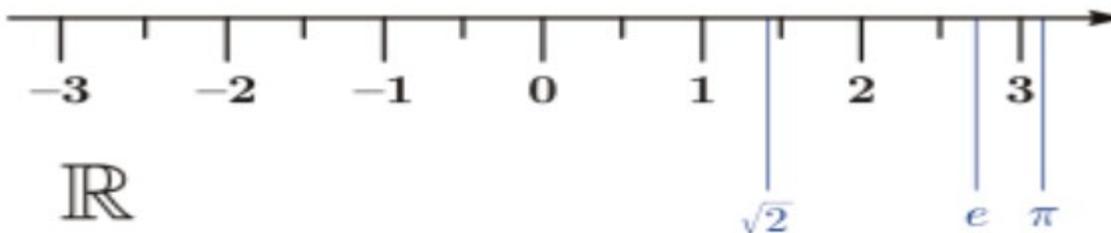
but here where the compass and the tip of your pencil will put it *on Number Line*! You can do this easily:
put *the tip of the compass* at point **0** (zero) and the tip of the pencil at the other end of the hypotenuse of the **exact** $\sqrt{2}$ size and then bring the dotted line to the **number line** (axis of real numbers).

The tip of the pencil will reach **exactly** in the **center of** the blue dot $\sqrt{2}$ no matter how small or large the **unit** of measurement was chosen, **1**!
Yes, $\sqrt{2}$ has ∞ decimals, here $\sqrt{2}$ is *truncated* to *50 decimal* places:

$\sqrt{2}$	**1.4142135623730950488016887242096980785696718753769**4

but it has its place like number **1**, like number **2**, which have no ... *decimal*, its place somewhere in between!
That's why $\sqrt{2}$ it's one of my dearest **IRRATIONAL** numbers as well π, **e** (satisfied with just *the first 200 decimal places of* **e**) , *the golden ratio*, *phi*!
I have now seen, writing these pages, why no one **dares** to have in the analytical curriculum (or whatever it is called) a lesson that explains HOW the three (and it is not ... three hundred, only **3**) *types* of real numbers positive: INTEGER, RATIONAL and **I**RRATIONAL, HOW *they entered the world* in the measurement process**!**
*Seinfeld: - You can't over die, You can't over dry***!**
Any question?
Yes,
Jeffrey Kaplan who's living / lived between **(1987 – 2086)**

presents:

Rusell's Paradox – a simple explanation of a profound problem

that will make you do something, I have no idea what, **is this a paradox?**