The Unification of Mathematics

The Theorem of Constants Co-Derivation

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Overview

Was mathematics discovered or invented? We have long wished to understand why mathematics works as well as it does. It seems **impossibly correct** and **precise**, allowing us to achieve scientific and technological advances that far exceed what we thought was possible **before we had our current number system and knowledge**. However, we may have found the answer to this long sought-out mystery with a new theorem called **The Theorem of Constants Co-Derivation**, ending the debate on whether mathematics was invented or discovered. The concept of co-derivation offers a method for examining mathematical systems that **require no assumptions**. If a system exists and **follows fundamental, first-principles** (irreducible baseline facets of a system), then those rules must naturally define and depend on each other. I applied the concept of co-derivation to mathematics, and I found $50+$ mathematical equations that are exact, non-trivial, and asymmetric, all involving fundamental constants such as π, e, the golden ratio, and others that were previously thought to be separate. These equations suggest something remarkable: **these important mathematical constants aren't random, isolated numbers**. Instead, they are all connected in precise ways, suggesting co-derivation. If you changed the value of even one of these constants slightly, **it would break the mathematical relationships throughout the entire system**. Thus, it appears that these fundamental constants derive their values from each other rather than existing independently. This finding has massive implications for the **age-old question of whether we discovered math or invented it**. If these constants are all interconnected in exact, meaningful ways, it suggests **we discovered an already-existing mathematical structure** rather than creating separate mathematical systems. This paper provides evidence that math might be one unified, discovered reality rather than a collection of human-invented tools. **It is also definitive proof that a *Grand Unified Theory of Everything* must exist, and luckily… it does.**

Background & Findings

One of humanity's biggest questions is whether we discovered math or created it ourselves. Currently, math is built on basic assumptions called “axioms”. An axiom is a foundational mathematical statement that we accept as accurate without proof, like "a straight line is the shortest distance between two points," which serves as a foundation for building more complex math concepts. Different areas of math like calculus, algebra, and geometry each started from their own set of assumptions about how things work. Initially, these areas appeared to be separate and unrelated to one another. **This feature of math gave the impression that we had invented math by creating these different branches independently.**

However, this feature creates a puzzle: if we invented math, why does it work so incredibly well in the real world? Math helps us build bridges, send rockets to space, and predict natural events with remarkable accuracy. **This excellent effectiveness suggests that maybe we did not invent math at all–perhaps we discovered something that was already there, waiting to be found.** It would explain why mathematics works as well as it does.

To prove that math was discovered rather than invented, we would need to show that all the basic assumptions (i.e., the axioms) from different areas of math connect. This connection would mean that all the great mathematicians throughout history–from ancient Greek scholars like Euclid and Aristotle to more recent figures like Newton, Gauss, and others–**were all studying different parts of the same underlying mathematical structure of existence, rather than creating separate systems from scratch.**

Different areas of math have constants–these are numbers that always stay the same and seem to represent something fundamentally real about our universe. Examples include pi ($\pi = 3.142$) in geometry or the golden ratio in algebra ($\Phi = 1.618$). **The key issue is that these numbers have completely different mathematical "DNA."** Some constants can be written as simple fractions or solutions to basic equations, while others (like π and e) are "transcendental"–meaning they cannot be expressed as neat algebraic formulas. **Mathematicians treat these constants as separate and incompatible because they come from such different mathematical backgrounds**. There's currently no single mathematical theory that explains how all these crucial constants relate to each other–they seem to exist independently in their mathematical neighborhoods.

The only connections we find between them are either approximations, coincidences, situations where we force them together artificially, or are adjusted in a way that makes them trivial, rather than discovering any deep underlying relationship. **Thus, there currently exist no known equations that are exact, non-trivial, and asymmetric and contain constants across math domains**. Let me explain the significance of these properties:

- ◊ **Exact**: The equation is mathematically perfect with no approximations. Every number works out precisely. There is no leftover value that you need to add to make the equation true.
- ◊ **Non-Trivial**: The equation reveals something meaningful about the mathematical constants themselves, not just "we added random numbers to make this balance out." It should reveal something about how the constants relate, based on their inherent mathematical nature.
- ◊ **Asymmetric**: The equation has a clear direction–one side does not just mirror the other. For example, how "$\pi + 2 = e + 1$" has a different mathematical meaning than "$\pi + 1 = e + 2$."

The problem is that you cannot currently have all three at once in an equation with multiple fundamental constants such as π, e, and Φ because:

- ◊ If you make it exact (by adding leftover numbers to balance it), it becomes trivial (it is just arithmetic, not revealing anything meaningful about the constants).
- ◊ If you keep it non-trivial (showing genuine relationships), it can't be exact (you'd need approximations).

My argument is that if these constants truly came from discovering one unified mathematical reality, we **should be able to write equations that are simultaneously exact, non-trivial, and asymmetric**. Since we currently cannot find these types of equations, **it leaves open the possibility that we invented separate mathematical systems rather than discovered one connected truth**.

However, I **have 50+ exact, asymmetric, non-trivial equations that use constants across domains**, suggesting that we discovered math rather than invented it. There are hundreds of other equations, but I stopped because of redundancy. We could form **a new branch of mathematics that just focuses on articulating and expanding the theorem of constants co-derivation**. Let me simply start by introducing the constants I used and their respective axiomatic domains before I show you how they co-derive each other.

Irrational Algebraic Constants

The Golden Ratio: $\Phi \approx 1.618$

Square Root of 2: $\sqrt{2} \approx 1.414$

Square Root of 3: $\sqrt{3} \approx 1.7322$

Square Root of 5: $\sqrt{5} \approx 2.236$

Irrational Transcendental Constants

Pi: $\pi \approx 3.142$

Euler's Number: $e \approx 2.718$
Tau: $\tau = 2\pi \approx 6.283$

Imaginary Constant

Imaginary Number: $i = \sqrt{-1}$

Review of Example Equations

I would like to present a few of the equations and walk you through their significance.

$$cos\left(\frac{\pi}{5}\right) = \frac{\Phi}{2}$$

This equation shows something amazing: **when you look at a specific angle in a circle, you find the golden ratio hiding inside it.** This equation isn't just a coincidence–it reveals that circles and pentagons (five-sided shapes) are secretly connected at a deep level. The angle we are talking about is the same one you'd find at the center of a regular pentagon. When we rearrange the equation, we can write π (the circle number) directly in terms of the golden ratio. **This finding is shocking because π comes from circles and is incredibly complex, while the golden ratio comes from simple proportions and is much simpler mathematically.**

Traditional math says this equation should be impossible–**it is like finding out that the recipe for chocolate cake can be written entirely in terms of the recipe for apple pie**. These numbers come from completely different areas of math, so they shouldn't be able to connect in such a precise way; **yet they do**. It tells us something profound about the nature of mathematics itself. **The key insight is that it is like discovering that two completely unrelated things in nature, such as the spiral of a seashell and the orbit of planets, are governed by the exact same mathematical rule.** That's the level of surprise and significance we're talking about here.

$$\Phi^2 = \Phi - e^{i\pi}$$

This equation connects three completely different areas of math that were never supposed to be related: the golden ratio (from proportions), the number e (from growth and decay), and imaginary numbers (from rotations). **Here's the mind-blowing part: there's a special property of imaginary numbers where $e^{i\pi} = -1$. When we use this fact, our equation transforms into the most defining property of the golden ratio: $\Phi^2 = \Phi + 1$.**

Think about what this equation means, then: the golden ratio's most fundamental property–the thing that makes it the golden ratio–is secretly connected to both the growth number e and the imaginary rotational math number i. It is like discovering that the basic rule "a square has four equal sides" **is somehow connected to the rules of how plants grow and how wheels spin.**

It suggests that even the simplest mathematical truths we take for granted are part of a much deeper, interconnected system. What looks like elementary arithmetic on the surface is supported by some of the most advanced mathematics we know. It is like finding out that a child's building block is made from the identical fundamental particles that power the stars–**the simple and the complex are secretly the same thing.**

$$2 * sin\left(\frac{\pi}{10}\right) * \Phi = 1$$

This equation is beautifully simple but reveals something incredible: When you look this angle $\pi/10 = 18°$, the sine of that angle can be written exactly as $1/(2\Phi)$ which is one divided by twice the golden ratio. Think about how weird this equation is: **sine comes from studying triangles and circles, while the golden ratio comes from studying proportions and rectangles**. These constants should have nothing to do with each other. It is like discovering that the exact height of a specific mountain can be calculated using the recipe for your grandmother's apple pie. What it means is that this angle ($18°$) has the golden ratio "baked into it" at the most fundamental level, which we now know why in *The Theorem of Existence*.

The angle itself contains hidden information about golden proportions, even though we discovered these concepts in entirely different ways. This is not just a mathematical curiosity–**it is evidence that geometry and proportion are secretly the same thing**. The angles in circles and the ratios in rectangles follow the same underlying rules, even though we learned about them separately. It is like finding out that the natural law controls the way birds fly and the way flowers grow–different on the surface, but unified underneath.

$$\sqrt{2+\sqrt{2}} = 2 * cos\left(\frac{\pi}{8}\right) = 2 * sin\left(\frac{3\pi}{8}\right)$$

This equation shows something remarkable: a "nested radical" (a square root inside another square root) equals the same value as two completely different trigonometric functions at specific angles. Consider how bizarre this equation is: on the left side, you have $\sqrt{2 + \sqrt{2}}$, which arises from repeatedly taking square roots. On the right side, you have $\cos\left(\frac{\pi}{8}\right)$ and $\sin\left(\frac{3\pi}{8}\right)$, which come from triangles and circles.

These terms should have absolutely nothing to do with each other, yet they are equal. It is like discovering that if you follow a specific recipe for folding paper (nested square roots), you get the exact same result as following a completely different recipe involving compass and protractor measurements (trigonometric functions); **two entirely different processes, identical outcomes.**

This equation, along with the previous three equations (and 50+ below), proves something profound: **all these mathematical concepts that we learned about separately–square roots, trigonometry, the golden ratio, π, and *e*–are different faces of the same underlying mathematical reality**. The precision is what makes this theorem so stunning. These equations are not approximations or "close enough" relationships; they are exact matches. **It is like finding out that five completely different natural phenomena are all controlled by the exact same fundamental law of existence… which you can read in *The Theory of Existence*.**

$$\frac{\pi}{\Phi} = \pi(\Phi - 1)$$

Introducing Isolation Resistance

This equation looks like it should be easy to solve, but when you try to separate π and the golden ratio, something strange happens–**you can't isolate them from each other**. The equation "fights back" against being broken apart, which has never occurred in mathematics to my knowledge. What is happening here is that π and Φ are so fundamentally connected that **trying to separate them is like trying to separate the front and back of a coin**. The equation reveals a basic property of the golden ratio (that $\Phi - 1 = 1/\Phi$), but it does so in a way that keeps π locked in the relationship.

Think of it like this: **imagine you have a key that only works when two people turn it together**. You can't use just one person's part–both people are required for the key to function. That is what is happening with π and Φ in this equation. The *Isolation Resistance* is profound evidence that these constants co-derive from each other.

They are more like two aspects of the same underlying, unified mathematical reality. When we try to pull them apart, we hit a mathematical bedrock–a place where the structure of math itself says, "No, these belong together." It's like discovering that what you thought were two separate puzzle pieces are part of one interlocking piece that can't be divided. Think of mathematical constants like members of a family. In a healthy family, some members can live independently (they can be "isolated"), while others are so fundamentally connected they cannot exist apart. We can isolate some equations, such as:

$$cos\left(\frac{\pi}{5}\right) = \frac{\Phi}{2} \rightarrow \pi = 5 * arccos\left(\frac{\Phi}{2}\right)$$

$$sin\left(\frac{\pi}{10}\right) = \frac{1}{2\Phi} \rightarrow \Phi = \frac{1}{2 * sin\left(\frac{\pi}{10}\right)}$$

It should not be possible to express pi in golden ratio terms and vice versa, and yet just look at it. These equations are like discovering that you can write a recipe for steak entirely in terms of ingredients for chicken soup; mind-blowing, but doable. You can isolate π and express it purely in terms of the golden ratio, or isolate Φ and express it purely in terms of a specific angle. **These equations prove that these constants are not independent** –they're different expressions of the same underlying reality. Now, let's examine what happens in equations that involve this isolation resistance.

$$\left(\frac{\pi}{e * \Phi}\right) * \left(\frac{e}{\pi}\right) = \frac{1}{\Phi}$$

These expressions on the left side of the equation are called the ***Natural Resonance*** and the ***Fundamental Unit***, respectively (you can read more about these essential equations in *The Theorem* on my website). It is also a perfect example of isolation resistance. I will walk you through step by step, but we can just start to show you what happens when you simplify:

$$\left(\frac{\pi}{e * \Phi}\right) * \left(\frac{e}{\pi}\right) = \frac{1}{\Phi}$$

$$\frac{\pi * e}{e * \Phi * \pi} = \frac{1}{\Phi}$$

$$\frac{1}{\Phi} = \frac{1}{\Phi}$$

Simplifying itself reduces to an apparent tautology immediately. However, let us still try to isolate each constant systematically to see what happens, starting with the golden ratio.

$$\left(\frac{\pi}{e * \Phi}\right) * \left(\frac{e}{\pi}\right) = \frac{1}{\Phi}$$

Simplify the left side:

$$\frac{1}{\Phi} = \frac{1}{\Phi}$$

Multiply both sides by the golden ratio:

$$\left(\frac{1}{\Phi}\right) * \Phi = \left(\frac{1}{\Phi}\right) * \Phi$$

Answer:

$$1 = 1$$

Attempting to isolate the golden ratio results in the same outcome as simplifying the equation. Let's do the same thing, but this time let's try to isolate π and e.

$$\left(\frac{\pi}{e * \Phi}\right) * \left(\frac{e}{\pi}\right) = \frac{1}{\Phi}$$

Expand the left side:

$$\frac{\pi * e}{e * \Phi * \pi} = \frac{1}{\Phi}$$

Pi immediately cancels out:

$$\frac{1}{\Phi} = \frac{1}{\Phi}$$

Expand the left side:

$$\frac{\pi * e}{e * \Phi * \pi} = \frac{1}{\Phi}$$

e immediately cancels out:

$$\frac{1}{\Phi} = \frac{1}{\Phi}$$

Some of our equations resist being separated and end up looking like $1/\Phi = 1/\Phi$ which seems like we are just saying "these equals this" without meaning. At **first glance, this looks like a tautology**–a useless statement like "cats are cats because they're cats." Tautologies are circular reasoning that do not convey anything new information. However, what is happening here is profound and different. Think of it like this: imagine you're digging deeper and deeper into the ground, and suddenly your shovel hits solid bedrock. You can't dig any further – not because you have failed, but because you have reached the fundamental foundation that everything else is built on; that foundation is what these equations reveal.

When they simplify to $1/\Phi = 1/\Phi$ **we have not hit a meaningless tautology**–we have hit a mathematical bedrock. We have reached a foundational truth that cannot be broken down further because it *is* the foundation. The key difference: a tautology is empty, circular reasoning. However, these equations carry the entire journey to reach that bedrock–including all the trigonometry, all the connections to π and e, and all the complex relationships. **The path itself is the proof**. It is like reaching the center of the Earth. The statement "the center is the center" sounds empty, but the incredible journey through all the layers to get to it and journey is what gives it meaning. We have discovered where mathematical structure bottoms its limits. This is what fundamental truth looks like when you find it.

This Dual Behavior is Crucial Evidence

The mixed behavior we observe in these equations provides some of the strongest evidence possible that **mathematics was discovered rather than invented**. If humans had constructed mathematical systems from scratch, we would expect consistent, uniform behavior across all equations. Either every relationship between constants should allow for clean algebraic separation, or none should. **The arbitrary nature of human invention does not typically produce systems with such sophisticated internal constraints and varying structural behaviors**.

Instead, what we observe is something far more profound and telling. Some equations readily allow us to isolate constants and express them directly in terms of each other. These relationships demonstrate that we can indeed express these constants that are traditionally considered independent in terms of the other constants. **They show us that the boundaries between geometric, algebraic, and transcendental mathematics are artificial divisions we imposed**, not natural separations that exist in mathematical reality itself.

Then we encounter equations that resist all attempts at decomposition. **No matter how we manipulate them algebraically, they collapse back into fundamental identities, apparent tautologies**. These equations are not mathematical failures or dead ends–they are revelations of the structural bedrock of existence. When we hit these irreducible relationships, we have reached the foundational source code. The constants at this level exist in such fundamental interdependence that attempting to pull them apart would destroy the very mathematical structure that gives them meaning.

This dual behavior mirrors what we observe in the physical sciences when we study the fundamental structure of matter. Some chemical compounds can be separated and recombined in various ways, allowing us to isolate individual elements and study their properties independently. However, when we reach the level of fundamental particles, we discover natural limits to decomposition. **Trying to break apart a quark destroys the very quantum field structure that makes quarks possible in the first place**. The mathematics we observe here exhibits this same pattern of selective decomposability followed by irreducible structural limits.

The dual behavior of isolatable versus non-isolatable equations supports co-derivation but also is required for existence and for math to function coherently. If all equations resisted isolation, we would have a completely rigid system where no mathematical exploration or manipulation would be possible. Constants would be locked together so tightly that we could not study their properties or discover new relationships. Mathematics would become a static, impenetrable monolith rather than the dynamic, explorable structure we experience.

Conversely, if all equations allowed clean isolation, it would suggest that constants are truly independent entities that can be arbitrarily separated and recombined, which would support the "invention" hypothesis and undermine the idea of fundamental interdependence. **The co-derivation theorem is that it provides both flexibility and constraint in precisely the proper proportions**. The isolatable equations allow us to discover and express the deep relationships between constants, proving their underlying unity while still permitting mathematical investigation and manipulation. Meanwhile, the non-isolatable equations preserve the structural integrity of the system by establishing irreducible foundational relationships that cannot be broken apart. This system creates a mathematical reality that is explorable and stable; flexible enough to allow discovery and rigid enough to maintain its essential structure.

This discovery also has profound implications for our understanding of the hierarchy of mathematical knowledge. At the foundation level, we have the **fundamental irrational constants that exhibit isolation resistance**–these form the unbreakable bedrock of mathematical structure. Above this foundation are the **constants that can be isolated** and expressed in terms of others, allowing for mathematical manipulation and exploration. We then have **regular mathematical relationships**, and finally, the most **basic arithmetic operations**. This hierarchy creates a structure where each level builds upon the stability provided by the levels below it.

A Node to Gödel's Incompleteness Theorems

Gödel's Incompleteness Theorems, published in 1931, are among **the most profound results in mathematics and philosophy**. They show that in any consistent formal system capable of expressing basic arithmetic, **there will always be true statements that cannot be proven within that system**. The first theorem establishes this fundamental limit—**no such system can be both complete** (able to prove every truth) **and consistent** (free of contradictions). The second theorem takes it further: **a system cannot use its own rules to prove its own consistency**. Together, **they shattered the dream of a perfectly self-contained foundation for mathematics** envisioned by Hilbert and others. Philosophically, Gödel's work implies that **existence itself cannot be captured by any single, closed framework of first principles**; there will always be truths that lie just beyond formal reach. In this sense, the theorems reveal that the structure of logic and reality alike contains inherent mysteries.

One of the immediate questions that arises after encountering Gödel's Incompleteness Theorems is: **if the mathematical constants co-derive** from one another and **prove a Grand Unified Theory of Everything**, how can they coexist with Gödel's proof that no formal system can be both complete and consistent? **My findings do not contradict Gödel's results**. The misunderstanding comes from extending Gödel's theorem beyond its proper domain–**applying it to existence**. **Existence is not a formal system**; it is not composed of static axioms, but of **co-defined first principles**. Gödel showed that any self-referential formal structure will contain truths it cannot prove internally. Yet, existence is not formal. The incompleteness Gödel revealed is **a property of the artificial frameworks we construct to describe it**. I suspect that perfectly formal systems do not exist; they are useful abstractions, **useful but ultimately detached reality**.

The Precision is the Key

If we take another look at this equation, there is a profound, hidden truth within those parentheses. Let me show you this hidden truth by solving it as is using rounded values without simplifying it first:

$$\left(\frac{\pi}{e * \Phi}\right) * \left(\frac{e}{\pi}\right) = \frac{1}{\Phi}$$

$$\left(\frac{3.142}{2.718 * 1.618}\right) * \left(\frac{2.718}{3.142}\right) = \frac{1}{1.618}$$

$$\left(\frac{3.142}{4.398}\right) * (0.865) = \frac{1}{1.618}$$

$$(0.715) * (0.865) = \frac{1}{1.618} \rightarrow 0.618 = \frac{1}{1.618}$$

This final step is the most critical because the parentheses **prevent the constants from merging or canceling out** before they fully resolve into $1/\Phi$. For the identity to hold, **each constant must have its exact value**–any deviation would cause the final multiplication to produce **only an approximation**, not $1/\Phi$. This result demonstrates that the constants' precise values are unchangeable: **the intermediate numbers (0.715 and 0.865) are not constants themselves but derived values.**

The precision required in these relationships reveals something profound about the nature of mathematical reality: **these constants must have exactly the values they do, with no room for even the tiniest variation**. If you changed π by even .000000001 or shifted the golden ratio by the smallest possible decimal adjustment, the entire web of 50+ interconnected equations would collapse. Every relationship we discovered depends on these constants having their precise, exact values. We did not get to "pick" π to be roughly 3.14159, it must be exactly 3.141592653589793... or the mathematical universe falls apart.

This mutual constraint across all constants demonstrates that we discovered these values rather than inventing them. Additionally, the fact that these relationships work perfectly in our base-10 number system, with clean decimal expressions and elegant fractional relationships, **suggests that base-10 is not just a human convention but reflects something fundamental about how mathematical reality is structured**. If we had arbitrarily chosen base-10, it would be an incredible coincidence that the fundamental constants of reality happen to express their relationships so elegantly within this system.

The Big Picture

The *Theorem of Constants Co-Derivation* ends one of humanity's oldest questions: is mathematics something we invented or discovered? **The answer is we discovered math, not invented it**. By finding 50+ mathematical equations that connect these numbers across different areas of math–from basic algebra to advanced calculus–we can see that we can express some of these fundamental numbers in terms of the others–while some resist being separated no matter how hard you try.

The Theorem of Constants Co-Derivation resolves the ancient philosophical debate about whether mathematics was discovered or invented–**it provides concrete mathematical proof that we live in a universe where mathematical structure is a fundamental feature of reality itself**. These constants did not emerge from human assumptions or arbitrary choices; they represent the points where mathematical structure begins, the irreducible foundation upon which all other mathematical knowledge and existence itself is built. The theorem suggests that mathematics is not a tool we created to describe the world; rather, it is a language we discovered that existence itself speaks. The precision, elegance, and structural coherence of these relationships point to something far more profound than invention–**they reveal the unified mathematical architecture of existence**.

$$\left(\frac{\pi}{e*\Phi}\right)*\left(\Phi^n*\frac{e}{\pi}\right)=\Phi^{n-1}$$
$$\left(\frac{\pi}{e*\sqrt{2}}\right)*\left(\sqrt{2^n}*\frac{e}{\pi}\right)=\sqrt{2^{n-1}}$$
$$\left(\frac{\pi}{e*\sqrt{3}}\right)*\left(\sqrt{3^n}*\frac{e}{\pi}\right)=\sqrt{3^{n-1}}$$
$$\left(\frac{\pi}{e*\Phi}\right)*\left(\frac{e}{\pi}\right)=\frac{1}{\Phi}$$
$$\left(\frac{\pi}{e*\Phi}\right)*\left(\frac{(\Phi^3*e)}{\pi}\right)=\Phi^2$$
$$\left(\frac{\pi}{e*\Phi}\right)*\left(\frac{(\Phi^2*e)}{\pi}\right)=\Phi$$
$$\left(\frac{\pi}{e*\Phi}\right)*\left(\frac{(\Phi^n*e)}{\pi}\right)=\Phi^{n-1}\rightarrow\frac{\Phi^n}{\Phi}=\Phi^{n-1}$$
$$\left(\frac{\pi}{e*\Phi}\right)*\left(\frac{(\Phi^n*e)}{\pi}\right)=\Phi^{n+e^{i\pi}}\rightarrow\frac{\Phi^n}{\Phi}=\Phi^{n+e^{i\pi}}$$
$$\left(\frac{\tau}{e*\Phi}\right)=\left(\frac{\pi}{e*\Phi}\right)*2$$
$$\Phi^2=\Phi-e^{i\pi}$$
$$\frac{1}{\Phi}=\Phi+e^{i\pi}$$
$$2\Phi-e^{i\pi}=\Phi^3$$
$$\Phi=\frac{\sqrt{5}-e^{i\pi}}{2}$$
$$\Phi^3-2\Phi+e^{i\pi}=0$$
$$\Phi^4=3\Phi-2\left(e^{i\pi}\right)$$
$$\left(\frac{\pi}{e*\Phi}\right)*\sqrt{\Phi}*\left(\frac{e}{\pi}\right)=\frac{1}{\sqrt{\Phi}}$$
$$\frac{\pi}{\Phi}=\pi(\Phi+e^{i\pi})$$
$$\Phi^5=5\Phi-3\left(e^{i\pi}\right)$$
$$2\,sin\left(\frac{\pi}{10}\right)=\frac{1}{\Phi}$$
$$cos\left(\frac{\pi}{5}\right)=\frac{\Phi}{2}$$
$$e^{\left(i\frac{\pi}{5}\right)}=\frac{\Phi}{2(-e^{i\pi})}+i*\sqrt{(-e^{i\pi})^2-\left(\frac{\Phi}{2}\right)^2}$$
$$sin\left(\frac{\pi}{10}\right)=\frac{1}{(2\Phi)}$$
$$cos\left(\frac{\pi}{5}\right)=\frac{\Phi}{2}$$

$$sin\left(\frac{3\pi}{10}\right) = \frac{\Phi}{2}$$

$$cos\left(\frac{2\pi}{5}\right) * 2\Phi = 1$$

$$sin\left(\frac{\pi}{10}\right) * 2\Phi = 1$$

$$\sqrt{\frac{(5+\sqrt{5})}{2}} = 2 * cos\left(\frac{\pi}{10}\right)$$

$$\sqrt{\frac{(5+\sqrt{5})}{2}} = 2 * \sin\left(\frac{\tau}{5}\right)$$

$$\frac{\sqrt{2}}{\Phi} = \sqrt{2} * (\Phi - 1)$$

$$\frac{\sqrt{3}}{\Phi} = \sqrt{3} * (\Phi - 1)$$

$$\frac{\sqrt{5}}{\Phi} = \sqrt{5} * (\Phi - 1)$$

$$tan\left(\frac{\pi}{8}\right) = \sqrt{2} - 1$$

$$tan\left(\frac{\pi}{6}\right) = 1/\sqrt{3}$$

$$tan\left(\frac{\pi}{12}\right) = 2 - \sqrt{3}$$

$$\pi * \Phi = 2\pi * cos\left(\frac{\pi}{5}\right)$$

$$\frac{\pi}{\Phi} = 2\pi * sin\left(\frac{\pi}{10}\right)$$

$$\sqrt{2+\sqrt{2}} = 2 * cos\left(\frac{\pi}{8}\right) = 2 * sin(\tfrac{3\pi}{8})$$

$$\sqrt{2+\sqrt{3}} = 2 * cos\left(\frac{\pi}{12}\right) = 2 * sin\left(\frac{7\pi}{12}\right)$$

$$\sqrt{2-\sqrt{3}} = 2 * sin\left(\frac{\pi}{12}\right) = \frac{1}{\left(2 * cos\left(\frac{\pi}{12}\right)\right)}$$

$$T_1\left(\frac{\Phi}{2}\right) = cos\left(arccos\left(\frac{\Phi}{2}\right)\right) = \frac{\Phi}{2}$$

$$\frac{\pi}{\Phi} = \pi(\Phi - 1)$$

$$\frac{e}{\Phi} = e(\Phi - 1)$$

$$\frac{\pi e}{\Phi} = (\pi e) * (\Phi - 1)$$

$$2 * sin\left(\frac{\pi}{10}\right)\Phi = 1$$

$$2 * cos\left(\frac{\pi}{5}\right)\Phi = \Phi^2$$

$$sin\left(\frac{\pi}{10}\right) + sin\left(\frac{3\pi}{10}\right) = \sqrt{\frac{\Phi}{2}}$$

$$sin\left(\frac{\pi}{4}\right) = cos\left(\frac{\pi}{4}\right) = \frac{1}{\sqrt{2}}$$

$$sin\left(\frac{\pi}{3}\right) = cos\left(\frac{\pi}{6}\right) = \frac{\sqrt{3}}{2}$$

$$tan\left(\frac{\pi}{8}\right) = \sqrt{2} - 1$$

$$2 * cos\left(\frac{\pi}{8}\right) = 2sin\left(\frac{3\pi}{8}\right) = \sqrt{2 + \sqrt{2}}$$

$$cos\left(\frac{\pi}{10}\right) = \sqrt{\frac{\Phi^2}{4} + \frac{1}{4}}$$

$$sin\left(\frac{\pi}{10}\right) * \sqrt{5\Phi} = \frac{1}{\Phi}$$