Abstract

Considering that for any number we can call it \(x\) and write \(x + 1 = \frac{x^2 + x}{x}\), we can use algebra on Euler’s Identity \(e^{i\pi} = -1\) to write some relationships between \(e\) and \(\pi\), and describe a different construction rule for everything. While we consider binary one to be a triangle instead of a square, we will find our algebraic explorations just explain and unexplain themselves through other well-known but perhaps overlooked equations, as algebra will. We will go on to delve into what applying these equations to our square based / Cartesian number systems might achieve.

Given

The square root of negative two is an imaginary number, whereas the third root of a negative integer returns a logical answer with algebraic roots. Assuming the use of the real-valued root, \((-x)^{1/3} = -x^{1/3}\).

Further we might consider:

\[
\begin{align*}
\sqrt{-1} &= i \\
\sqrt{0} &= 0 \\
\sqrt{1} &= 1 \\
\sqrt{x^2} &= |x| \\
\sqrt{s^2} &= |s|
\end{align*}
\]

Because of these, plotting a 3D implicit graph of \(xy + yz + xz\) draws a two-sheeted hyperboloid, and we will look at algebraic equations that resemble the conventional way of plotting this shape.
. Theories and Methodology

If we view Pascal’s Triangle of our binomial coefficient as being representative of one itself, from the perspective that binary one extrapolates into a cube and the 3D extrapolation of Pascal’s triangle has a square base, we might say that all our mathematics are based on 1 having a square base. Again, our standard deviation works by saying our 1 is a cube and $s = \sqrt[3]{s^2}$. All of this could be as naïve as a 2D ‘person’ observing a slice of a cone and being sure it’s a sphere.

It is theorised that while a system is based on Cartesian co-ordinates, having quadrants based on ignoring the imaginary nature of $\sqrt{-2} = i$ and that $x^{1/3} \neq (i)$, this system and it’s components can not be viewed as irreducible. Starting new maths with binary one being an equilateral triangle, we find inequalities and irrationality in calculations of anything past the start of standard deviation, which requires the square root of an anything squared not to graph the same as that anything’s absolute value.

We will look at expanding $x + 1 = (x^2 + x)/x$ to describe the relationship between any two inputs, a and b (from the binomial co-efficient formula), axes x and y, y and z, x and z, as well as decimals, ratios, velocities, gaps and time itself.
Archimedes’ constant and the natural number $e$

We might write the following equivalences:

\[
\frac{\pi \sqrt{e}}{\pi} = \frac{e}{\sqrt{e}} \\
\frac{\pi \sqrt{e}}{\pi} = \frac{e}{\sqrt{e}} \\
\frac{\pi \sqrt{e}}{\sqrt{e}} = \frac{\pi}{\sqrt{e}} \\
\frac{e \sqrt{\pi}}{\pi} = \frac{e}{\sqrt{\pi}}
\]

The sums $(e \sqrt{\pi})$ and $(\pi \sqrt{e})$ return the following decimal approximations:

\[
(e \sqrt{\pi}) = 1.90547226473017993689473101489962109285 \\
(\pi \sqrt{e}) = 4.81802909469872205712153109124611881421
\]

We might note that these terms can be viewed as algebraic, albeit with an unconventional structure, and are connected simply on their own by the structure of $(a \sqrt{b})/a = b/\sqrt{b}$, which might be seen as similar to the structure of equations normally used to explore a two-sheeted hyperboloid, where we see division of powers in the equation to describe this shape’s volume. This shape can be plotted implicitly using the expression $xy + yz + xz$, which when we consider it’s triangular nature, might make us question why it plots with a circular shape at all, although the author accepts this may be said from a difficult perspective. The answer is that we need graphing systems that resolve $s$ does not equal $(s^2)^{1/2}$ and $(a/b)$ does not plot the same as $((a + b)/b)$. This author cannot yet well advise on the construction of such a graphing system, but a good starting point might be considering what manipulation of $x + 1 = (xx + x)/x$ might best be drawn in or around a triangle.

We know that the product $\pi e$ is irrational (N.A.Carella-2017-arxiv 1706.08394) but we might be content with the rationality of the following lines of calculations that do not require us to split numbers into real and imaginary components.
\[ x + 1 = (xx + x)/x \]
\[ ((xx + x)/x) - x = 0 = 1 + e^{i\pi} \]
\[ e^{i\pi} = ((xx + x)/x) - x - 2 \]
\[ e^{i\pi} = (e^i)^\pi \]
\[ e = -1^{1/i\pi} \]

\(-1^{1/\pi}\) is a transcendental number, approx. \(0.5403023 + i0.841471\) and for a circular radius of 1, the polar forms can be expressed as \(\cos(1) + i\sin(1)\), \(e^i\).

\textbf{Other numbers}

Because the equation \(x + 1 = (x^2 + x)/x\) works for any number, we can replace \(\pi\) and \(e\) in the equation \((\pi\sqrt{e})/\pi = e/\sqrt{e}\) with any two other numbers, allowing us to write the following equations, and swap in any variable, constant, axis, or discrete calculation, including \(t\), \(E\), \(c\) and ratios such as \(\phi\), and by equilateral triangular contraction, the components of calculations already understood to define these terms, back to 1 itself being an algebraic root of everything else.

It might seem a useless point that for positive values of \(a\) and \(b\) we know
\[ (a^b)^{1/b} = a \]
and therefore
\[ ((a + b + c)^d)^{1/d} = a + b + c \]
, but this is part of a triangular construction to our numbers and can help us unlock secrets from polynomial calculations based on quadrants.
\[ (a\sqrt{b})/a = b/\sqrt{b} \]
\[ (a\sqrt{b})/(\sqrt{b}) = a/\sqrt{b} \]
\[ (b\sqrt{a})/a = b/\sqrt{a} \]
\[ (b\sqrt{a})/b = a/\sqrt{a} \]
Considering this construction for polynomials

Looking at the one side of the binomial function \((a+b)\), which as we know can easily be drawn as Pascal’s triangle, with \(a\) and \(b\) being the two numbers above in the usual fashion, we will expand this co-efficient algebraically, then finding new ways to express \((a+b)\), before considering absolute values in the construction of ‘new’ polynomial triangles. This author is unable to make comment on the other side of the binomial function at this time, this will do what it does, and they are also unable to/wary of passing remark on Fermat’s last theorem other than saying that our triangular construction \(x+1=(xx+x)/x\) looks to agree with it. We will substitute the sum \((a+b)\) in for \(x\) in this equation, to give

\[
((a + b) = (((a + b)^{2} + (a + b))/(a + b)) - 1.
\]
It then follows that

\[(a + b + c) = (((a + b + c - 1)^2 + (a + b + c - 1)/(a + b + c - 1)),\]

or simply

\[(a + b + c) = (((a + b + c)^2 + (a + b + c)/(a + b + c)) - 1\]

and if \(c = 1\), \((a + b + c) = (a + b + 1) = (((a + b)^2 + (a + b)/(a + b))\).

As discussed before, these might be viewed as pointless algebraic exercises, especially when we’ve ignored that other side of the binomial function and we’ve still not had an integral anywhere, but the point becomes clearer when we plot a triangle of construction \((a + b + 1)\) or \((a + b + (a + b)^2)/(a + b)\) and find a mess of OEIS patterns amongst only odd numbers propagated, and Sierpinski’s pattern when we colour mod 4.

Dropbox link - \((a+b+1)\)

This is a most triangular triangle, and it is suggested that it might tell us something new about oxygen’s bonding availability. The report planned for after this one will look at if water might actually be H3O, and would it having a refractive index of 1.328 explain Alexander Bands?

**The absolute value**

To explore the roots of this previous triangle, we can draw another with the construction \(|a + b| - 1\), which gives us mobius patterns of 1s, 0s and -1s, in a Sierpinski pattern. There is a link to this triangle later in this report.

When constructing a trinomial triangle from absolute values, we find that because \(|0| = 0\), we can create a number triangle straight from 0 limits. This is explored more in this Excel file, which includes a curve calculator we aren’t looking at in this report for some attempt at brevity:
Blueprints for this file are available by request –tapptapp@mail.com–; this was built from a different mathematical perspective as we have used in this report, before the author found that $\sqrt{x^2} = |x|$, which is why the equations used in grid A are so bulky.

Constructing $|a+b+c+1|$, we have four terms now and we find a nuclear pattern - Otto Haxel’s guess for magic numbers of nuclear shells - OEIS sequence A033547. What is interesting is how this pattern is shown to interact with square array sequences along the 3rd propagated row/column and beyond, these being based on the Delannoy numbers, which might also be calculated using absolute values as this triangle is constructed from.

The relationship we have explored between $e$ and $\pi$ and all other positive numbers agrees with a triangular/tetrahedral/Sierpinski pattern construction rule for everything. These rules apply to shapes, their vertices, vectors as well as the axis their respective coordinates sit between. Because of Pascal’s pyramid and Cartesian quadrants, we have been unable to properly observe that $\sqrt{1^2} = 1$.

Viewing binary one as a triangle means we do not have to work out why mass would bend space-time, because plotting $t'=(tt+t)/t =t+1$ shows a rigid construction, while satisfying criteria that we previously relied on the Lorentz transformation to bring from the idea one is a cube in our dimension. The following graph was taken from an open source, and the Lorentz transformation was changed to the simpler transformation shown above.
Conclusion

While aware of the inherent crankiness in all of this, this author is keen to put forth only truths or, at the very least, hints at truths, unobscured by too much unqualified conjecture. The linked materials have accompanying reports written before this one, yet to be properly presented and again by request. These expound on what might be solved by viewing 1 as a tetrahedron. The equations remain small and obvious-looking, but abundant and convincing along this narrative that begs for Newtonian void-atoms to be looked at again.

This report falls short of fully describing a graphing system that resolves probability and "chaos" with $s = ((ss + s)/s) - 1$, but it is suggested that "Tesla’s (Joey Grether’s) multiplication spiral" is more interesting than Ulam’s.

It is hoped that looking at whether binary one as being an equilateral triangle and viewing it in a 12 base number system might help tighten fluid dynamic calculations. We might start by looking at whether fluid dynamic equations we write pertaining to H3O might better suit a description of how we observe water to act, especially when we consider the number triangle of construction $|a + b| - 1$ compared to $(a + b) - 1$ and $|a + b - 1|$. Other implications might include energy calculations not based or reliant on $f = ma$, since this equation itself is based on the Lorentz transformation translating a square based 1.

Dropbox link - triangular roots of the Sierpinski pattern Part 1

Dropbox link - triangular roots of the Sierpinski pattern Part 2