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## Circular Meditations

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# POETRY FOLDER



## *Circular Mediations*

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This is a folder made up of a sequence of seventeen interconnected poems pertaining to mathematics, science, history, politics, religion, and spirituality. It can also be read as a single seventeen-part poem.

Speaking of seventeen, three haiku of mine appear in the collection “Math in Seventeen Syllables: A Folder of Mathematical Haiku” (*Journal of Humanistic Mathematics*, Volume 8 Issue 1 (January 2018), pages 441-472, doi:10.5642/jhummath.201801.22, available at: <https://scholarship.claremont.edu/jhm/vol8/iss1/22>). Two of those are based on ideas also alluded to in *Circular Mediations*.

Several of the poems in this collection feature mathematical expressions in their titles. In the sixth, a non-mathematical term I was introduced to while working on that section appears. Given all that, some brief notes are as follows:

The denominator in the title of the opening poem is equivalent to the numerator in the third, the former being 4 times the Maclaurin series for inverse tangent, evaluated at 1.

*Survivance* is the title of a book edited by Gerald Vizenor, who coined the modern use of the term. The full title is *Survivance: Narratives of Native Presence*.

The title of the third to last poem was in Ramanujan’s original letter to Hardy (section V, equation 3).

The title of the penultimate poem is equivalent to one of seventeen such formulas for  $1/\pi$  that Ramanujan found while in India, then published while in England.

The title of the final poem is commonly called Euler’s Identity. It too can be related to a Maclaurin series evaluated at a value, but in this case, an imaginary value.

-KEVIN FAREY

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$$\frac{3 + \frac{1}{10} + \frac{4}{100} + \frac{1}{10^3} + \frac{5}{10^4} + \frac{9}{10^5} + \dots}{4 - \frac{4}{3} + \frac{4}{5} - \frac{4}{7} + \frac{4}{9} - \frac{4}{11} + \dots} = 1$$

Whether sensed within while whirling or performed as an act of faith or pressed with a palm and circled in his garden pillars were central to Rumi who spoke of *a hundred kinds of prayer, bowing, and prostration*, or as Barks rephrased this *hundreds of ways to kneel and kiss the ground*.

When numbers kneel twixt symbols  
bowing lower along a line  
many different infinite lists  
can approach a single sum.

$$\frac{\text{diameter}}{\text{radius}} = 2$$

She argued once in her youth with a man  
who kept saying spirit had prompted him  
to say to some who insisted spirit had prompted them  
*You're wrong.*

What had lingered after lightning  
felt to her like a wordless warmth.  
Two or more were gathered.  
On that much they agreed.

$$\frac{4 \cdot \arctan(1)}{2 \cdot \arcsin(1/2)} = 3$$

At any point in time on earth  
dark and light abound  
and the line between might seem if seen  
from the moon to cleave close to an arc.

---

Not as clear are the countless ways  
it cuts through human hearts  
and washes across the faces  
of dawn and evening skies.

$$\frac{2018 - 1863}{2018 - 1968} = 3.1$$

On a black and white TV in an all-white town outside Chicago  
I watched as two black fists were raised near disks one bronze one gold  
while an anthem rang and flags two for the Americans slowly rose  
to separate and unequal heights at the ends of adjacent poles.

I'd heard by then at ten of flagrant racists far away  
and of ghetto buildings burned to the ground and of King and the KKK  
and of one shot fired in Memphis and several more in LA  
but not of local redlines limiting eyes I would use to this day.

$$\frac{2019 - 1619}{1619 - 1491} \approx 3.12$$

And I'd seen by then the massive bob of a towering pendulum sway  
where time can be told on a circle o'er which its strokes each day still rotate.  
Any fact like a myth can be ignored or explored and squarely faced.  
My country might thy history teem with greatness and disgrace?

When a quill pen pressed wrote all men are how many by then were enslaved?  
In the century after slavery's end how many thousand lynched men swayed?  
Was Jim Crow's death like the second stripping of beams and stones from the face  
of an edifice casting shadows still from seas to the shining fruit of a tilted rift-ridden  
blood-stained plain?

---

$$\frac{2020 - 1492}{24 \cdot 7} \approx 3.14$$

Resembling briefly bright bowed spokes sunlit streamers stretched  
from the maypole's top to a circle of celebrants soon transformed into two  
concentric circles cycling out and in in opposite ways  
as dancers dipped and rose as they wove those ribbons round and through.

Resembling briefly forms he forms with hoops o'er the course of a hoop dance  
... serpent six-legged four-legged ground bird soaring eagle ... and human  
weaving his form through those hoops and forms while dancing an account of creation  
and dancing as an act of Survivance and of holding as sacred a sphere.

$$\frac{355}{113} \approx 3.14159$$

Spokes of a wheel exist within one rim and around one hub  
and this daisy's petals point toward one horizon  
yet in at the edge of a hayfield  
toward a delicate disc comprised

of closely woven spiraling lines of tiny tubular blooms  
each bloom encircling seeds of seeds encircling central strands  
of atoms holding half at most  
of a code for a flourishing life.

$$\frac{103993}{33102} \approx 3.14159265$$

As spinning blades in a jet speed up  
and the plane begins to roll  
petals fall from stems  
in a field beyond.

Earth hurtled half as far in half the time ad infinitum  
to this here and now of a pause before  
as hundreds somewhere kneel  
a vest explodes or a gunman strikes and a plane takes off with bombs.

---

$$\frac{C}{d} = \pi$$

Near spears of grass in a field as an east wind whispers *Almost sunrise*  
I gesture just toward one then the wind picks up and the whole field speaks  
though the rooted can't quite say what none can say in every way  
and that I now hope to help to say in some way

as I speak of points on a line in a plane where the real and the imagined meet  
and of numbers kneeling nimbly there near one transcendent sum  
though math has said of itself it can neither answer all its questions  
nor promise not to prove conflicting facts.

Suppose when humankind knew not of the number pi  
that a man in search of truth walked from his tribe  
up a seemingly desolate hill toward a bush  
ablaze with small white springtime fires.

Let him gaze at length into its sunlit blooms  
till at once they wildly sway  
and he hears as if from the midst of limbs  
the voice that speaks of all through all:

*Three plus one tenth plus four one hundredths  
is a truth this world repeats without repeating  
plus one plus five plus nine over ten to the third fourth fifth respectively  
a truth this world repeats without end.*

Let the seeker then descend from the hill saying  
*Thus a voice has spoken*  
but later *Woe to anyone*  
*who would dare to say it otherwise.*

The next year  
let a man unknown to the first from a far-off tribe  
climb a densely wooded hill to a glade  
ablaze with its spring fires.

---

Let him calmly close his eyes and breathe  
till but silence stirs in his mind  
then a sense of something said within  
by the voice that speaks of all through all:

*Four less four over three plus four over five less four over seven  
and endlessly beyond plus four over nine less four elevenths  
far too long to say but you are only asked to start  
and to make of moving slowly toward a lifetime's work of art.*

Let this man then descend from a hill saying  
*Thus a voice has spoken*  
but later *Woe to anyone*  
*who would dare to say it otherwise.*

The next year let those two men meet  
and speak of what they've heard  
then shout of what they know they've heard  
then strike each other dead.

Let witnesses say *He was right.*  
*No, he was right not him.*  
Then let them shout *You are wrong!*  
then strike each other dead.

And the next year let more followers flock to battlefields and die  
and the next and the next and the next then let one soldier set his sword aside and cry *My  
folly it was to have fought as if Divine Thought can be reduced to the rational  
and as if we d's are wholes to the holy and the C's we fight are not*

*and I say this somewhat deafened here and struck for the moment blind  
where a thunderous voice as a flash lit the sky just now said some C's are.*

In Washington DC this matters much as it does in Damascus  
and wherever even one doesn't doubt their perception of a call to kill

as it did when some said God said to decimate the Canaanites  
and as crusaders claiming allegiance to Christ wrought destruction  
and as a newly independent India's Hindus clashed with its Muslims  
and as it does when civilians die at the hands of self-proclaimed Jihadis.

---

Brutality's terms aren't equal in the series preceding.  
But let us at least agree they reflect reality all too often  
on this spinning sphere that circles a star that revolves round its galaxy's core  
in a cosmos wherein every thing from nebulae to quarks

and from the furthest galactic cluster to such particle-waves of light  
as have traveled there to here at colossal speed to speak of a source  
is a pulsing part of an expanding whole that encircles all its parts  
including those who might ask if that whole is part of something larger

or if God exists or if patterns of charge in a brain can equate with a mind  
of the kind that might imagine a precocious child needing nothing but twine  
to measure in terms of breadths the girths of circular forms she finds  
yearning to learn firsthand about a universal value oft defined

yet symbolized by a glyph her imagining mind might see as resembling  
an equal sign on its side dangling down from a dash  
and maybe saying

*Not quite*

as I might speak of points on a line in this field near spears of grass till dusk  
then gesture just toward one as a new night deepens  
though neither I nor they nor any will ever say in every way  
what all can hope to help to say in some way.

### **numberless**

Cosmologists say arriving rays from stars read a bit more red  
than they would within a static space ours streaming away instead  
and that to picture as fixed any of the ink-white dots on a black balloon  
as breath by breath that world inflates and the other dots all recede

or to watch from the point precise where something rising just exploded  
into a swiftly swelling sphere of celebratory lights  
or to gaze into space whether from Earth or Mars or a starship long since entered  
is to look no matter the place as from but one of our universe's centers.



---

**mere thousands to the naked eye from the ground**

By night the sufficiently near and bright  
seem to circle across these skies.

By day mathematicians say  
where and when they will rise.

O the power to predict and the gift of being  
often enough surprised  
through the arduous art of seeing each lens  
within or before your eyes.

**precisely five for a while**

The first to observe that certain stars  
seem to wander among the rest  
like those who named such planets  
after gods knew little of lenses.

Millennia later glass was milled  
for the ends of a tapering tube  
then the tube was trained toward the heavens  
and one sound eye was closed.

**three in one yet one**

*Our View of God is Central*  
say not only men of war.  
Notes are nailed repeatedly  
to closed imposing doors.

*Uniquely central?* some might ask.  
Others answer *Yes!*  
Regarding what to read and how  
which lens informs whose guess?

---

### 3.14159 over $\pi$ is less than a millionth shy of 1

For years she strove to see at first but a pearl from every side  
while infinitely far away at the deepest point inside.

*Such views are nigh and approachable* said the Sun in its way from afar  
as she gazed again and again as if along lines through the heart of a star.

Now a seeker speaks of lightning strikes and of feeling warmed yet warned  
wordlessly from within to face intensifying storms  
in a world of worsening floods and fires amidst myriad blessings sent  
to all who weave through circumstance maybe torn but not yet rent.

$$1 - 5 \cdot \left(\frac{1}{2}\right)^2 + 9 \cdot \left(\frac{1 \cdot 3}{2 \cdot 4}\right)^3 - \dots = \frac{2}{\pi}$$

After reading a long letter of introduction's final theorems  
Godfrey H. Hardy mathematician par excellence  
spoke of defeat at the hands of some then said they *must be true*  
for *if not* he reasoned *no one would have the imagination to invent them.*

The devoutly Hindu author's name meant younger brother of Rama.  
Godfrey was an atheist seeking truth.  
The next year after a month at sea for one those men would meet  
soon to speak most weeks and to broaden spheres of thought all the more as colleagues.

$$\frac{\sqrt{8}}{99^2} \sum_{n=0}^{\infty} \frac{(4n)!(1103 + 26390n)}{(4^n n!)^4 99^{4n}} = \frac{1}{\pi}$$

Having chalked much math onto the stones of a temple's floor in India's heat  
and on a slate from which he wiped many mistakes ere writing new truths into notebooks  
and having seen on occasion drops of blood in dreams then a scroll unrolling  
to reveal how numbers next might kneel amidst symbols deep in his work

and as a future Fellow of the Royal Society and of Trinity College in Cambridge  
whose culture shock would play a part in cutting short his life  
Ramanujan, over tea perhaps with a colleague said after a pause  
*Sir, an equation has no meaning for me unless it expresses a thought of God.*

---

$$e^{\pi i} + 1 = 0$$

Mountains notwithstanding Earth from its surface might seem flat.  
At eclipse of moon her shadow argues otherwise.  
Now an atom's vague peripheries are oft portrayed as clouds  
and the more we learn the more we rely on metaphors.

Rumi spoke of an algebraic way in which mistakes  
feed a means of zeroing in on true solutions.  
Lightning lingering long in the mind in the air was here then gone.  
Which ground would receive your inmost hidden kisses softly back?