

Numbers and Faces

**A Collection of Poems
with Mathematical Imagery**

**compiled for the
Humanistic Mathematics Network**

**by
JoAnne Growney**

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NUMBERS AND FACES

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For the interested reader, additional collections of poems with mathematical imagery:

Against Infinity: An Anthology of Contemporary Mathematical Poetry, edited by Ernest Robson and Jet Wimp, Primary Press, Parker Ford, PA 1979.

Images of a Complex World: The Art and Poetry of Chaos by Robin Chapman and Julien Clinton Sprott, World-Scientific, 2005.

Imagination's Other Place: Poems of Science and Mathematics, compiled by Helen Plotz, Thomas Y. Crowell, NY, 1955.

My Dance is Mathematics by JoAnne Growney, Paper Kite Press (www.wordpainting.com), 2006.

Additional sources of mathematics in poetry are available online including sites maintained by Marion Cohen, JoAnne Growney, Kasriel Mazlanka, and Katherine Stange. (Please use a search engine to obtain an up-to-date URL.)

WATCH FOR news of an anthology of *MATHEMATICAL LOVE POEMS*, edited by Sarah Glaz and JoAnne Growney, forthcoming soon.

Sources of poems in this collection:

"How I Won the Raffle" by Dannie Abse, *Poetry*, November 1992 (Vol CLXI, No 2), pages 74-5.

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"Reservation Mathematics" by Sherman Alexie, from *First Indian on the Moon*, Hanging Loose Press, 1993, pages 43-4.

"Numbers and Faces" by W. H. Auden, from *Collected Poems*, edited by Edward Mendelson, Vintage Books, New York, 1991, pages 623-4.

- “Thirty-six Poets” and “Fibonacci “ by Judith Baumel, from *The Weight of Numbers*, Wesleyan University Press, 1988.
- “The Inclined Plane” by Nina Cassian, translated by Naomi Lazard, from *Life Sentence: Collected Poems*, edited by William Jay Smith, W. W. Norton, New York, 1990, pages 14-16.
- “Numbers” by Mary Cornish, from *Poetry*, June 2000 (Vol CLXXVI No 3) pages 131-2.
- “Geometry” by Rita Dove, from *Selected Poems*, Vintage Books, New York, 1993, page 17.
- “The Parallel Syndrome” and “The Fraction Line” by Miroslav Holub, translated by Ewald Osers, from *Supposed to Fly: A Sequence from Pilsen, Czechoslovakia*, Bloodaxe Books, Newcastle upon Tyne, 1996, pages 83, 99.
- “Brief Reflections on Logic” by Miroslav Holub, translated by Stuart Friebert and Dana Habova, from *Saggital Section: Poems New and Selected*, Field Translation Series, copyright 1980, Oberlin College.
- “To Myself” by Abba Kovner, translated by Shirley Kaufman, from *My Little Sister and Selected Poems*, Oberlin College Press, 1986.
- “Suicide” by Federico Garcia Lorca, translated by Edwin Honig,, from *Four Puppet Plays, Play Without a Title, Divan Poems and Other Poems, Prose Poems and Dramatic Pieces*, The Sheep Meadow Press, P. O. Box 1345, Riverdale-on-Hudson, NY 10471, Page 142, Copyright 1990 by Edwin Honig.
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- “Ode to the Numbers” by Pablo Neruda is printed with permission from the translator, William Pitt Root.
- “The One Girl at the Boys’ Party” by Sharon Olds from *The Dead and the Living*, Alfred A. Knopf, New York, 1984, page 79.
- “Algebra” by Linda Pastan from *Against Infinity” An Anthology of Contemporary Mathematical Poetry*, Ernest Robson & Jet Wimp, Eds., Primary Press, Parker Ford, PA, 1978, page 50.
- “Arithmetic” by Carl Sandburg, from *Imagination’s other Place: Poems of Science and Mathematics*, compiled by Helen Plotz, Thomas Y. Crowell, NY, 1955, page 78.
- “Six Significant Landscapes” by Wallace Stevens, from *The Collected Poems of Wallace Stevens*, Vintage Books, New York, 1990, pages 73-5.
- “A Large Number” and “Pi” by Wislawa Szymborska, translated by Stanislaw Baränszak and Clare Cavanagh, from *View With a Grain of Sand: Selected Poems*, New York: Harcourt Brace, 1995, pages 101-2, 129-30.
- “A Word on Statistics” by Wislawa Szymborska, translated by Joanna Trzeciak, From *The Atlantic Monthly*, May 1997, page 68.
- “The Calculation” by David Wagoner, from *Traveling Light* Urbana: University of Illinois Press, 1999, pages 101-2.

DANNIE ABSE

Dannie Abse is the author of numerous books of poetry, including *White Coat*, *Purple Coat: Collected Poems 1948-1988* and *Remembrance of Crimes Past*.

How I Won the Raffle

After I won the raffle with the number
1079,
the Master of Ceremonies asked me why,
'Why did you select that particular number?'

'A man's character is his fate,' I replied,
leaning lazily on a quote as usual.

And suddenly I thought of Schopenhauer's
two last men in the world, two gaunt hermits,
meeting each other in the wilderness,

how an amiable man like Pufendorf
might postulate they'd shake hands;
a Hobbes they'd kill each other;
a Rousseau they'd pass each other by
in terrible silence.

'In short,' said the Master of Ceremonies
impatiently,
'you chose 1079 because you had to.'

'In short, I chose 10 because in the old days
ten me used to walk around a new grave.

'I chose 7 because those ten men used to walk
around the new grave seven times.'

Also because of the pyramids of Egypt;
the hanging gardens of Babylon;
Diana's Temple at Ephesus;
the great statue of Zeus at Athens,
the Mausoleum at Halicarnassus;
the Colossus of Rhodes;
and the lighthouse of Alexandria.

'I chose 9 because among all numbers
it looks most like a musical note;

DANNIE ABSE

nine because of the nine orders of Angels;
nine because of the nine rivers of Hell.’
Also because of Clio with her backward look;
Calliope, stern, staring at her scroll;
Erato, nude, except for her brassiere;
Euterpe, eyes closed, flute in her mouth;
Terpsichore dancing away, silly one;
Melpomene, arms raised, dagger in hand,
Thalia, mirthless, behind her laughing mask;
Polyhymnia, in sacred robes, orating;
and Urania, dreamy, head amid the stars.

‘Sir,’ I said,
to the scowling Master of Ceremonies,
‘that’s why I chose the winning number
1079.’

SHERMAN ALEXIE

Sherman Alexie is a Spokane / Coeur d'Alene Indian from Wellpinit, Washington. Besides several collections of poetry, Alexie has published novels and short-stories; he wrote the screen-play for the 1998 film, *Smoke Signals*.

Reservation Mathematics

Mixed-up and mixed blood
I sometimes hate
the white in me
when I see their cruelty
and I sometimes hate
the Indian in me
when I see their weakness

because I understand the cruelty and weakness in me. I belong to both tribes. It's my personal Wounded Knee, my own Little Big Horn. On the telephone, my friend from new York told me I drifted back into a reservation accent only when I talked about pain. How could I tell her

that the reservation is more
than pain?
It's double happiness, too
when I watch the fancydancers
or
the basketball players
or
the comic book collectors
all dreaming

of a life larger than this one, constructed by walls everywhere. It doesn't matter if it's a square, rectangle, or triangle, they all mean the same thing. They're all the direct opposite of a circle. It doesn't matter if it's a triangle, rectangle or square. They're all the direct opposite of a circle. I've been dreaming of a life

with a new shape, somewhere
in the in-between
between tipi and HUD house
between magic and loss.
I'm always dreaming
of a life between
the 3/16 that names me white
and the 13/16
that names me Indian.
That's what has happened to us.
Indians have learned

SHERMAN ALEXIE

to love by measuring cup. I can count up all my cousins. I can count every can of commodities in the cupboard. I can count every piece of broken glass on my reservation and I still wouldn't have enough of anything, neither answers nor love. But I can stand up in front of you and recite formulas, my voice will tremble and my hands will shake. I can stand up, like Lucille said, through your destruction. I can stand up, like Lucille said, through my destruction. I can stand up, like Lucille said, through our destruction, through

every little war, every
little hurricane.
I'll take my Indian thumb
and my white fingers
on my strong right hand
and I'll take my white thumb
and my Indian fingers
on my clumsy left hand
and I'll make fists,
furious.

SANDRA ALCOSSER

Sandra Alcosser lives in Montana and teaches in the graduate writing program at San Diego State University. Her recent collection, *Except in Nature*, was chosen by Eamon Grennan for the 1997 National Poetry Series.

My Number

*I'm linked with the fate of the world's disasters and holy
have a little freedom to live or die.*

VITESLAV NEZVAL

My number is small. An hundred pounds of water,
A quart of salt. Her digit is a garment.

I wear her like a shadow. We judge each other,
My number and I. She is the title. The license.

The cash drawer. My random number.
She protects me from myself. She desires me.

She says she's only one of thirty million species.
She wishes she were more than anecdotal evidence.

Being human she can erect elaborate scaffolding
To protect her emotions, can make an excuse of obvious

Dramatic proportions. My number is inconsequential
With dreams of glory. She spends three or four days each year

just opening her mail.. Do you know how many animals
Will be given lethal injections while you read this poem.

Five billion people = half a billion empty bellies.
If there is a god, why can't that god be smaller than my number.

Tiny, soft-spoken so she'd have to pay attention.
My number is a female impersonator (she has multiple meanings).

Her shape is misleading, The further she is from unity, the more deeply
Involved with the world, Like the winds and the grasses, she wears
herself down.

She lies under hot flags of lilies, sings like a bee.
She gets so lonely she recites for her cat. She makes her face up.

Like a death mask. She hangs her dresses on the clothesline outside.
Together we dance — my number and her best dresses.

W. H. AUDEN

Wystan Hugh Auden (1907-73) was born in York, England and emigrated to the United States in 1939 and became a citizen. He won the Pulitzer Prize in 1947 for *The Age of Anxiety*. One of the greatest poets of the twentieth century.

Numbers and Faces

The Kingdom of Number is all boundaries
Which may be beautiful and must be true;
To ask if it is big or small proclaims one
The sort of lover who should stick to faces.

Lovers of small numbers go benignly potty,
Believe all tales are thirteen chapters long,
Have animal doubles, carry pentagrams,
Are Millerites, Baconians, Flat-Earth-Men.

Lovers of big numbers go horridly mad,
Would have the Swiss abolished, all of us
Well purged, somatotyped, baptised, taught baseball:
They empty bars, spoil parties, run for Congress.

True, between faces almost any number
Might come in handy, and One is always real;
But which could any face call good, for calling
Infinity a number does not make it one.

JUDITH BAUMEL

A New Yorker, Judith Baume! (1956-) won the 1987 Walt Whitman Award of The Academy of American Poets for her collection, *The Weight of Numbers*.

Thirty-six Poets

after Sakai Hoitsu

Some are drunk. Some are mumbling.
Many are solitary, each in his way fixed.
They are all happy over their very good number,
an easy square; its root six,
itself a lovely number, exponential chrysalis.
And if, in the array of patterns
taken from nature—clouds, spider webs, starfish—
we might yet find a true square
not one of these thirty-six, not the one
whose square is on his sleeve or heart, cares.

My old group, my biddies, the Math Team
would measure our drinks by booming
the quadratic formula, gleaming
with run, slopped over some parents; living-room
rug, like these bards in their curtained cabal.
None of us flubbed our password,
the drinking son, that poem or radicals
pressed in our brains, no gauge at all, absurd,
Minus b plus or minus the square root of
b squared minus four a c over two a.
Now even sober I lose those cancelled lines of youth
and drunk I am easily distracted, say,
by the discriminant, the bee-squared et al.
Concentrating on minutiae, I am lost in the well-
folded sleeve of the great poet's silk kimono,
lost on the silkworm's trail winding through japan
and wonder, drunk, watching my steps split by Xeno,
drunk, wonder what led me to the simple numerical plan
and then away like dust in the path of a paper fan.

JUDITH BAUMEL

Fibonacci

for Abraham Baumel

Call it windfall

finding your calculation

come, finally,
to the last decimal point of pi.

In the silence of January snow
a ladybug survives the frost
and appears on the window pane.

She draws a tiny space.
Hesitant. Reverses. Forward,
like a random-number generator,
the walking computer frog
who entertains mathematicians.

Think of the complexity
of temperature, quantification
of that elusive quality "heat."
Tonight, for instance,
your hands are colder than mine.
Someone could measure
more precisely than we
the nature of this relationship.
Learn the particular strength
of the Fibonacci series,
a balanced spiraling
outward of shapes,
those golden numbers
which describe dimensions
of sea shells, rams' horns,
collections of petals
and generations of bees.
A formula to build
your house on,
the proportion most pleasing
to the human eye.

NINA CASSIAN

Born in 1928, in Galati, Romania, Nina Cassian has published over fifty books, including works of fiction and books for children. Since 1985 she has lived in exile in the United States. Among those Cassian credits with strongly influencing her poetry was the mathematician Ion Barbu.

The Inclined Plane

Up, up, with an as yet undefined movement
probably called translation—have you ever seen
the infinite procession of slaves carrying enormous blocks
which, for their part, will for all time
bear the majestic name of pyramids?
Down, down, have you ever felt the first breath
of the avalanche, the delicate slivers and dust,
barely moving, ingenuous, putting forth a gesture
of destruction
and beginning to shake the world's foundations?
A single plane, inclined—toward what?
Toward the x-axis,
toward the y-axis,
and all the other conventions,
toward something rising and something falling;
the slope alone—you can clamber up or slide down.

Do you remember gliding on a gray tongue of concrete
toward the green glottis of the sea?
Do you remember touching the surface of that sea,
and breaking it,
going down through it, feeling a perpetual slope,
an inclined plane?
It takes a long time to crawl back up and break the surface
because time, there in the depths, has no orifices,
no nostrils, no pores:
it is an obdurate time—a kind of eternity.

Slides, chutes, inclined planes, oh, tragedies—
for tragedies are not obligatory; they are tragic
precisely because they could have been avoided—
so neither the vertical nor the horizontal really exists—
only a great inclined plane.

Have you ever struggled to get up with your fingers
clenched in the mud that lies between you
and the horizon above?
You looked at that pure, cold, cutting skyline
and quickly at the earth in front of your mouth,
then again at the horizon, and at the short blades of grass

NINA CASSIAN

that spring between the fingers clenched in that mud.
You fell and struggled again on that treacherous slope
without any other point of support but your own elbows,
kneecaps, heels, and your own forehead
soiled with earth mysteriously like an old manuscript.

The great plane rocks back and forth,
at one end a king, at the other a boar,
at one end a huge block of salt and at the other a book,
at one end a house, on the other a river,
and finally the great plane
rocks with old people and snowfalls,
padlocks, watches, blue leaves, melodic scepters,
horses and ships swinging, death's temples rocking, rocking,
quiet alcohols reeling, balancing.

I stand crucified on a plank, aware
 of the continual flow of life.
And here I am, incapable of stepping twice
 into the same stream.
I myself am beginning to put forth like a spring,
 my hands prolonging themselves

my hair, the tail of my eye, flowing down,
then up onto an inclined plane,
my whole being in a procession of ovoid cells, pulsating,
existing, not existing, ending briskly, continuing smoothly—
have you ever seen a floating cross?

It is a bird flying obliquely
over the oblique axis of the globe.
I rest my head in my left palm,
slightly inclined, contemplating, contemplating
The Great Inclined Plane.

TR NAOMI LAZARD

MARY CORNISH

In addition to being a poet, Mary Cornish is a freelance writer and illustrator who resides in New York.

Numbers

I like the generosity of numbers.
The way, for example,
they are willing to count
anything or anyone:
two pickles, one door to the room,
eight dancers dressed as swans.

I like the domesticity of addition —
add two cups of milk and stir —
the sense of plenty: six plums
on the ground, three more
falling from the tree.

And multiplication's school
of fish times fish,
whose silver bodies breed
beneath the shadow
of a boat.

Even subtraction is never loss,
just addition somewhere else:
five sparrows take away two,
the two in someone else's
garden now.

There's an amplitude to long division,
as it opens Chinese take-out
box by paper box,
inside every folded cookie
a new fortune.

And I never fail to be surprised
by the gift of an odd remainder,
footloose at the end:
forty-seven divided by eleven equal four,
with three remaining.
Three boys beyond their mothers' call
two Italians off to the sea,
one sock that isn't anywhere you look.

RITA DOVE

Born in 1943, Dove served as poet laureate of the United States for the term 1993-95, the youngest poet and the first African-American to hold this honor. She won the Pulitzer Prize in 1987 for her verse cycle, *Thomas and Beulah*.

Geometry

I prove a theorem and the house expands:
the windows jerk free to hover near the ceiling,
the ceiling floats away with a sigh.

As the walls clear themselves of everything
but transparency, the scent of carnations
leaves with them. I am out in the open

and above the windows have hinged into butterflies,
sunlight glinting where they've intersected.
They are going to some point true and unproven.

MIROSLAV HOLUB

Miroslav Holub (1923-98) was a an immunologist and prolific author of scientific papers as well as a poet of international reputation, beloved in his Czech homeland. Many of his poems draw on images from mathematics and the sciences. Still a teen when the Germans invaded his hometown or Pilsen, Holub has written of the horrors and victims of the Second World War. His work was banned in Czechoslovakia for more than a dozen years following the 1968 Soviet invasion.

The Parallel Syndrome

Two parallels
always meet
when we draw them by our own hand.

The question is only
whether in front of us
or behind us.

Whether that train in the distance
is coming
or going.

TR EWALD OSERS

MIROSLAV HOLUB

The Fraction Line

The poorly ventilated spaces of the Czechoslovak State Grammar School on the corner of Husova and Skodova street were enlivened chiefly by Theseus, Ovid, the caretaker Nocar, Helen of Troy, Charles Darwin, and the god Ares who, outside the building from the sixth form up, wore a greyish-green uniform, a pot-shaped helmet and smelly shaft-boots.

My hero was chiefly our Greek master, a one-armed Patrocles called Muller, in whose working-class Prague diction the philosophy of the Hylozoists sounded like a topical problem, and along with him Antonin Spelda, a cunning mathematical-physical Ulysses. Spelda taught us one vital step which, in my opinion, is the very foundation of cities, townhalls, parliaments, state visits, private visits, poems, discussions, science, interaction with a computer, economic budgets and love letters. Seeing our painful embarrassment over the third power of $1 - 3a^2$ divided by $1 - a^2$, Spelda, his head buried deep behind his desk—and the depth of his burial was proportionate to the depth of his exasperation with the stupidity of the world—would grunt: make a fraction line. Don't dither. Simply say: we'll make a fraction line. After that you'll manage somehow.

If I ever had As or Bs it was because I always first made a fraction line, moreover without dithering.

Whenever nowadays we walk past the dark grey corner building of our first *alma mater*, walking calmly where before eight in the morning we invariably raced like fleet-footed Achilleses or scared rabbits, we sometimes remember the fraction line.

Whenever we sit, or even stand, before the task of facing the recurrent stupidity and persistent sadness of the world we always remember. And make a fraction line.

TR EWALD OSERS

MIROSLAV HOLUB

Brief Reflections on Logic

The big problem is everything has
its own logic. Everything you can
think of, whatever falls on your head.
Somebody will always add the logic.
In your head or on it.

Even a cylinder makes sense, at least
in that it's not a cube. Even a cleft
makes sense, maybe just because
it's not a big mountain.

A special logic must be assigned to cylinders
that pretend to be cubes. And clefts
that think they're big mountains.

The logic of these things is in fact that
they strip other things of their meaning.

This reflection isn't abstract.

It's in view
of recent history.

TR STUART FRIEBERT AND DANA HABOVA

ABBA KOVNER

Born in the Crimea in 1918, Abba Kovner became a leader of the partisan groups fighting the Germans and after the war helped to organized the flow of Jewish survivors to Israel. He wrote his first collection of poetry in 1947 while imprisoned. Author of prose as well as poetry, he was awarded the Israeli Prize for literature in 1970.

To Myself

Mathematicians take a huge area like a whole world
and divide it into smaller areas, identical,
smaller than the eye can see.
Parts so exact don't need
an empty space between them.
Mathematicians
do it with only three forms:
isosceles triangle, square,
and hexagon, reliable instruments,
of course. My fear taught me
to try something else: when I could no longer bear
the space surrounding me, I wanted to manage
something smaller
like a cell, dividing itself
without fission. Not looking for answers
to every question. Only to discover what is
nagging me. Still trying: forty years
and more. Why did I want to get rid
of that hidden fear?
After all, if I fall dead in the empty space
it's not the mathematicians who'll be surprised.

TR. SHIRLEY KAUFMAN

FEDERICO GARCIA LORCA

Widely translated by many well-known American poets, the work of Spanish poet Federico Garcia Lorca (1899-1936) combines the form and language of his native folk traditions with intense psychological themes.

Suicide

*(Maybe because he didn't
know his geometry.)*

One day at ten o'clock
the boy forgot.

His heart was filling up
with broken wings and paper flowers.

He noticed in his mouth
just one small word was left.

As he removed his gloves, a fine
thin ash fell from his hands.

From the balcony he saw a tower.
He felt himself both balcony and tower.

He saw of course how in its frame
the stopped clock observed him.

He saw his shadow stretched out still
on the silken white divan.

And the boy, rigid, geometric,
broke the mirror with an axe.

As it broke, a thick stream of shadow
flooded his chimeric chamber.

TR. EDWIN HONIG

HOWARD NEMEROV

Poet Laureate of the United States during 1988-1990, Howard Nemerov (1920-91) served as a combat pilot during World War II. From 1969, a teacher at Washington University, Nemerov published numerous collections of poetry and several novels. He won the Pulitzer Prize in 1978 for his *Collected Poems*.

Figures of Thought

To lay the logarithmic spiral on
Sea-shell and leaf alike, and see it fit,
To watch the same idea work itself out
In the fighter pilot's steepening, tightening turn
Onto his target, setting up the kill,
And in the flight of certain wall-eyed bugs
Who cannot see to fly straight into death
But have to cast their sidelong glance at it
And come but cranking to the candle's flame --

How secret that is, and how privileged
One feels to find the same necessity
Ciphered in forms diverse and otherwise
Without kinship -- that is the beautiful
In Nature as in art, not obvious,
Not inaccessible, but just between.

It may diminish some our dry delight
To wonder if everything we are and do
Lies subject to some little law like that,
Hidden in nature, but not deeply so.

PABLO NERUDA

Chilean Pablo Neruda (1904-73) was awarded the Nobel Prize for Literature in 1971. Surely the greatest Latin American poet of the twentieth century, Neruda combined poetry with fervent and outspoken politics.

Ode to the Numbers

Such thirst
to know how much!
Such hunger
to know
how many
starts stretch the sky!

We pass
our infancies
counting stones, plants,
fingers, sand grains, teeth,
pass our youths counting
petals, hairs.
We count
the colors and the years,
the lives and kisses,
bulls
in the fields, waves
in the sea. The ships
made ciphers which multiplied.
The numbers spawned.
The cities
were thousands, millions,
and the wheat came in hundreds
of units
each holding other integers
tinier than a single grain.
Time became a number.
Light became numbered
and however much it raced with sound
it had a velocity of 37.
Numbers surrounded us,
At night we would
lock the door, exhausted,
approaching 800;
below
having come to bed with us
in that sleep
the 4,000 and the 77
goaded our foreheads
with their wrenches and hammers.

PABLO NERUDA

The 5
would compound itself
until it entered the sea or the delirium
where the sun might greet it with steel
and we go racing
to the office,
th mill,
the factory,
to start fresh with the infinite
number 1 of each day.

Friend, we had the time
so our thirst
could be satisfied,
the ancestral longing
to enumerate things
and total them,
reducing them
until rendering them dust,
dunes of numbers.
We were papering
the world
with figures and ciphers, but

the things existed
nonetheless, fleeing
all tallies,
becoming dehydrated
by such quantities, leaving
their fragrance and memories,
and the empty numbers remained.

For that reason,
for you,
I love the things.
The numbers,
which go to jail,
move,
in closed columns
procreating
until they give us the sum
for the whole of infinity.
For your sake I want
some
numbers of the way

PABLO NERUDA

to defend you
and you to defend them.
May your weekly wages increase
and grow chest-deep!
And out of the number 2 that binds
your body and your beloved wife's
emerge the matched eyes of your sons
to tally yet again
the ancient starts
and innumerable
spikes of wheat
which shall fulfill the transfigured earth.

TR WILLIAM PITT ROOT

SHARON OLDS

Born in San Francisco in 1942, Sharon Olds teaches at New York University and helps to run an NYU workshop program at Goldwater Hospital. Author of five highly-acclaimed poetry collections; *The Dead and the Living* was the Lamont Poetry Selection for 1983 and winner of the National Book Critics Circle Award.

The One Girl at the Boys' Party

When I take my girl to the swimming party
I set her down among the boys. They tower and
bristle, she stands there smooth and sleek,
her math scores unfolding in the air around her.
They will strip to their suits, her body hard and
indivisible as a prime number,
they'll plunge in the deep end, she'll subtract
her eight from ten feet, divide it into
hundreds of gallons of water, the numbers
bouncing in her mind like molecules of chlorine
in the bright blue pool. When they climb out,
her ponytail will hang its pencil lead
down her back, her narrow silk suit
with hamburgers and french fries printed on it
will glisten in the brilliant air, and they will
see her sweet face, solemn and
sealed, a factor of one, and she will
see their eyes, two each,
their legs, two each, and the curves of their sexes,
one each, and in her head she'll be doing her
wild multiplying, as the drops
sparkle and fall to the power of a thousand from her body.

LINDA PASTAN

Poet Laureate of Maryland, Linda Pastan (1932-)

Algebra

I used to solve equations easily.
If train A left Sioux Falls
at nine o'clock, traveling
at a fixed rate,
I knew when it would meet train B.
Now I wonder if the trains will crash;
or else I picture naked limbs
through Pullman windows, each
a small vignette of longing.

And I knew X, or thought I did,
shuttled it back and forth
like a poor goat
across the equal sign.
X was the unknown on a motor bike,
those autumn days when leaves flew past
the color of pencil shavings.
Obedient as a genie, it gave me answers
to what I thought were questions.

Unsolved equations later, and winter now,
I know X better than I did.
His is the scarecrow's bitter mouth
sewn shut in cross-stitch;
the footprint of a weasel on snow.
X is the unknown assailant.
X marks the spot
towards which we speed like trains,
at a fixed rate.

CARL SANDBURG

Born in Illinois in 1878, Sandburg's military and varied job experiences (truck-handler, dishwasher, harvest hand, etc.) prepared him well to develop into the laureate of industrial America. In 1939 his *Abraham Lincoln: The War Years* won the Pulitzer Prize for the best historical work of that year. He is well-known for his verse pictures of Chicago and for his anti-war poetry.

Arithmetic

Arithmetic is where numbers fly like pigeons in and out of your head.

Arithmetic tells you how many you lose or win if you know how many you had before you lost or won.

Arithmetic is seven eleven all good children to heaven -- or five six bundle of sticks.

Arithmetic is numbers you squeeze from your head to your hand to your pencil to your paper till you get the answer.

Arithmetic is where the answer is right and everything is nice and you can look out of the window and see the blue sky -- or the answer is wrong and you have to start all over and try again and see how it comes out this time.

If you take a number and double it and double it again and then double it a few more times, the number gets bigger and bigger and goes higher and higher and only arithmetic can tell you what the number is when you decide to quit doubling.

Arithmetic is where you have to multiply -- and you carry the multiplication table in your head and hope you won't lose it.

If you have two animal crackers, one good and one bad, and you eat one and a striped zebra with streaks all over him eats the other, how many animal crackers will you have if somebody offers you five six seven and you say No no no and you say Nay nay nay and you say Nix nix nix?

If you ask your mother for one fried egg for breakfast and she gives you two fired eggs and you eat both of them, who is better in arithmetic, you or your mother?

WALLACE STEVENS

Born in Reading, Pennsylvania, Wallace Stevens (1879-1955) was one of the great imaginative voices in poetry in the first part of the twentieth century, though he lived a primarily non-literary life as an executive of the Hartford Accident and Indemnity Company.

from **Six Significant Landscapes**

III

I measure myself
Against a tall tree.
I find that I am much taller,
For I reach right up to the sun,
with my eye;
And I reach to the shore of the sea
With my ear.
Nevertheless, I dislike
The way the ants crawl
In and out of my shadow.

VI

Rationalists, wearing square hats,
Think, in square rooms,
Looking at the floor,
Looking at the ceiling.
They confine themselves
To right-angled triangles.
If they tried rhomboids,
cones, waving lines, ellipses—
As, for example, the ellipse of the half-moon—
Rationalists would wear sombreros.

WISLAWA SZYMBORSKA

Winner of the Nobel Prize in Literature in 1996, Polish poet, Wislawa Szymborska (1923-) is a master at using particular details with wit and irony to lead the reader to new insights, often moral in nature. Extremely popular in her native Poland, she is persistent and consistent in her defense of individual rights.

A Large Number

Four billion people on this earth,
but my imagination is till the same.
It's bad with large numbers.
It's still taken by particularity.
It flits in the dark like a flashlight,
illuminating only random faces
while all the rest go blindly by,
never coming to mind and never really missed.
But even a Dante couldn't get it right.
Let alone someone who is not.
Even with all the muses behind me.

Non omnis moriar—a premature worry.
But I am entirely alive and is that enough.
It never was, and now less than ever.
My choices are rejections, since there is no other way,
but what I reject is more numerous,
denser, more demanding than before.
A little poem, a sigh, at the cost of indescribable losses.
I whisper my reply to my stentorian calling.
I can't tell you how much I pass over in silence.
A mouse at the foot of the maternal mountain.
Life lasts as long as a few sighs scratched by a claw in the sand.

My dreams—even they're not as populous as they should be.
They hold more solitude than noisy crowds.
Sometimes a long-dead friend stops by awhile.

A single hand turns the knob.
An echo's annexes overgrow the empty house.
I run from the doorstep into a valley
that is quiet, as if no one owned it, already an anachronism.

Where, there's still all this space inside me
I don't know.

TR . STANISLAW BARANCZAK & CLARE CAVANAGH

WISLAWA SZYMBORSKA

3.

14159 26535 89793 23846 26433 83279 50288 41971 69399 37510
58209 74944 59230 78164 06286 20899 86280 34825 34211 70679
82148 08651 32823 06647 09384 46095 50582 23172 53594 08128
48111 74502 84102 70193 85211 05559 64462 29489 54930 38196
44288 10975 66593 34461 28475 64823 37867 83165 27120 19091 ...

Pi

The admirable number pi:

three point one four one.

All the following digits are also initial,

five nine two because it never ends.

It can't be comprehended *six five three five* at a glance.

eight nine by calculation,

seven nine or imagination,

not even *three two three eight* by wit, that is, by comparison

four six to anything else

two six four three in the world.

The longest snake on earth calls it quits at about forty feet.

Likewise, snakes of myth and legend, though they may hold out a bit longer.

The pageant of digits comprising the number pi

doesn't stop at the page's edge.

It goes on across the table, through the air,

over a wall, a leaf, a bird's nest, clouds, straight into the sky,

through all the bottomless, bloated heavens.

Oh how brief -- a mouse tail, a pigtail -- is the tail of a comet!

How feeble the star's ray, bent by bumping up against space!

While here we have *two three fifteen three hundred nineteen*

my phone number your shirt size the year

nineteen hundred and seventy-three the sixth floor

the number of inhabitants sixty-five cents

hip measurement two fingers a charade, a code

in which we find *hail to thee, blithe spirit, bird thou never wert*

alongside *ladies and gentlemen, no cause for alarm,*

as well as *heaven and earth shall pass away,*

but not the number pi, oh no, nothing doing,

it keeps right on with its rather remarkable *five,*

its uncommonly fine *eight,*

its far from final *seven,*

nudging, as always, a sluggish eternity

to continue.

TR . STANISLAW BARANCZAK AND CLARE CAVANAGH

WISLAWA SZYMBORSKA

A Word on Statistics

Out of every hundred people

those who always know better:
fifty-two.

Unsure of every step:
almost all the rest.

Ready to help,
if it doesn't take long,
forty-nine.

Always good,
because they cannot be other wise:
four—well, maybe five.

Able to admire without envy:
eighteen.

Led to error
by youth (which passes):
sixty, plus or minus.

Those not to be messed with:
four-and-forty.

Living in constant fear
of someone or something:
seventy-seven.

Capable of happiness:
twenty-some-odd at most.

Harmless alone,
turning savage in crowds:
more than half, for sure.

Cruel
when forced by circumstances:
it's better not to know,
not even approximately.

Wise in hindsight:
not many more

WISLAWA SZYMBORSKA

than wise in foresight.

Getting nothing out of life except things:
thirty
(though I would like to be wrong).

Balled up in pain
and without a flashlight in the dark:
eighty-three, sooner or later.

Those who are Just;
quite a few, thirty-five.

But if it takes effort to understand:
three.

Worthy of empathy:
ninety-nine.

Mortal:
one hundred out of one hundred—
a figure that has never varied yet.

TR. JOANNA TRZECIAK

DAVID WAGONER

Winner of numerous poetry prizes, David Wagoner(1923-) teaches at the University of Washington. From Ohio, he loves the wildernesses and sparsely populated surroundings of the Pacific Northwest and writes often of natural things, bridging gaps between man and nature. In addition to his poetry, Wagoner is the author of ten novels.

The Calculation

A man six feet tall stands on a curb, facing a light suspended fifteen feet above the middle of a street thirty feet wide. He begins to walk along the curb at five m.p.h. After he has been walking for ten seconds, at what rate is the length of his shadow increasing?

—a problem given by my calculus instructor, Penn State, 1946

Facing a streetlight under batty moths
And June bugs racheting like broken clock springs,
I stand, for the sake of a problem, on the curb—
Neither in grass nor gutter—while those wings
Switch down the light and patch my undershirt.

I turn half-right. My shadow cuts a hedge,
Climbs through a rhododendron to a porch,
And nods on a windowsill. How far it goes
I leave to burglars and Pythagoras.
Into the slanting glare I slant my watch,

Then walk five miles per hour, my shoes on edge
In a practiced shuffled past the sewer grid
Over the gold no-parking-or-pausing zones
And into the clear—five seconds—into dirt,
Then over a sawhorse studded with lanterns,

And at the tenth I stiffen like a stump
Whose lopped head ripples with concentric figures,
Note the location of my other head
in a garden, but keep trundling forward,
ignoring doppelgängers from moon and lawn-lamp,

My eyes alert now, leveling my feet,
Seeing my shadow sweeping like a scythe
Across the stalks of daisies, barking trees,
And scraping up the blistered weatherboard
To the eaves of houses, scaling the rough shingles.

At fifteen seconds, in a vacant lot,
My head lies on a board. I count it off.

DAVID WAGONER

I think back to the garden, and I guess,
Instructor, after fifteen years of sweat,
It was increasing five feet plus per second.

At the start, I could have fallen, turned around,
or crossed to the very center of confusion,
My shadow like a manhole, no one's length,
Or the bulb itself been broken with a shot,
And all my reckoning have gone unreckoned.

But I was late because my shadow was
Pointing toward nothing like the cess of light,
Sir, and bearing your cold hypotenuse—
That cutter of corners, jaywalker of angles—
On top of my head, I walked the rest of the night.