









G4G Calendar 2021



















Tanya Khovanova was born 25 January in

Moscow, Russia. Tanya is a mathematician with

main area of research is recreational math. Tanya works in several programs at MIT that help

young children, starting from the 7th grade, to do

original math research. She is also a math puzzle

collector and regular recreational math blogger.

experience in both industry and academia. Her

Lewis Carroll (1832-1898) was born 27 January in Daresbury, Cheshire, England. His real name was Charles Dodgson, and he had a career teaching math at the University of Oxford. He was also a lover of wordplay and whimsy, and is best known for the books *Alice's Adventures in Wonderland* and *Through the Looking-Glass*. Martin Gardner's bestselling book was *The Annotated Alice* (1960). It launched a genre, with Isaac Asimov and others soon issuing volumes in the same spirit, and its success spurred Martin to publish more annotated books himself.

Sam Loyd (1841-1911) was born 30 January

sometimes passing off other people's puzzles

as his own, and was also a fine chess player

in Philadelphia, and grew up in NYC. Martin

Gardner called him "American's greatest puzzler" and published two collections of Mathematics Puzzles of Sam Loyd (1959 &

1960). Loyd was a master of publicity,

and chess composer.



Karl Schaffer was born 18 January in Worcester, Massachusetts, and grew up in New England and Birmingham, Alabama. He has long taught math at De Anza College in Cupertino, California, and is also a creative *dancer and choreographer*. *His very physical and* educational work integrates the worlds of mathematics and dance in surprising ways. One of his creations is the show *The Daughters of Hypatia*, which celebrates women mathematicians throughout history.

Rik van Grol was born 4 January in The Hague, The Netherlands. An applied physicist by training, he has long been working at a small consultancy on traffic modeling, making both short-term and long-term predictions of traffic conditions. He is a collector, solver, analyzer, designer and maker of mechanical puzzles. He co-authored the book *A Compendium of Cube-Assembly Puzzles using Polycube Shapes*. He is the chief editor of the mechanical puzzle magazine *Cubism For Fun*.

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Klaus Peters (1937-2014) was born 19 January in Wuppertal, Germany. He trained as a mathematician, and ended up changing the publishing industry in that subject, primarily via his long tenure as an editor at Springer. Later, he and his wife Alice (born 14 January in New York) established and ran AK Peters for 22 years. They specialized in both recreational math and computer graphics, and published six books of papers arising from G4G presentations. They were also instrumental in starting *The Mathematical Intelligencer.*

With an Introduction and Notes by MARTIN GARDNER The complete text and original illustrations in the

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"The first edition of Dad's *The Annotated Alice* was published in 1960 by Clarkson N. Potter, Inc.. Along with subsequent editions / sequels, this is his most successful publication. It's currently in a fourth iteration." [Jim Gardner]



Martin had 8 unit cubes. A third of their 48 faces were red, and the rest were blue. Martin was observed building a 2x2x2 cube with the unit cubes so that only 8 of the unit cubes' 24 visible faces were blue. Prove that he could have also assembled the unit cubes into a 2x2x2 cube whose 6 larger faces were entirely blue. [adapted from a Tanya Khovanova blog crediting a 2017 Moscow Olympiad question]

DECEMBER 2020 S M T W T F S 29 30 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2	JANUARY 2021							
Sunday	Monday Tuesday Wednesday Thursday Friday							
27	28	29	30	31	1	2		
					Jamy lan Swiss	Isaac Asimov (1920-1992)		
3	4	5	6	7	8	9		
	Rik van Grol	R V Heath (1883-1960)				Chris Morgan		
10 Howard Eves (1911-2004)	11	12	13	14	15	16		
Don Knuth	William James (1842-1910)			Alice Peters				
17	18 Karl Shaffer	19 Klaus Peters (1937-2014) Carl Hoff	20 Bill Ritchie Lucas Garron	21 Virtual Celebration of Mind	22 Jaap Scherphuis	23		
24	25	26	27	28	29	30		
	Bob Hummer Tanya Khovanova		Lewis Carroll (1832-1809)	lerry Andrus (1018-2007)		Sam Loyd (1841-1911) Matt Baker		
31 Persi Diaconis	1 anya Knovanova 1	2	2	4	5	G		



Miquel Duran was born 16 February in Maià del Moncal, Girona, in Catalonia, Spain. He trained

as a quantum chemist, and has long been a

interests in recreational math and magic have

techniques based on the scientific aspects of

inspired him to develop science communication

magic. He also promotes Open Access Science.

researcher at the University of Girona. His

Erik Demaine was born 28 February in Halifax, Nova Scotia. He was home schooled by his father, Marty, and he joined the MIT faculty at the age of 20. His interests include computational origami, linkages, algorithms, and complexity. With Marty, he helped edit two books arising from G4G conferences. The pair also creates art using paper, glass, and other materials. Erik recently served as President of G4G.



Marjorie Rice (1923-2017) was born 16 February in St Petersburg, Florida. While living in San Diego as a full-time homemaker, she devoured Martin Gardner's *Scientific American* column. His 1975 piece on polygonal tilings inspired her to discover four new types of pentagon tilers and their tessellations. Martin had geometer Doris Schattschneider validate her first discovery and a fruitful correspondence ensued, leading to the others. It was a remarkable contribution, especially from an amateur mathematician.

Irving Joshua Matrix (1908-?) was born on the 52nd day of the year, 21 February, in Kagoshima, on the Japanese island of Kyushu. He was a scholar and conjurer who excelled at numerology and sleight of word. Martin Gardner often wrote of Dr. IJ Matrix's discoveries and adventures in *Scientific American*, first collected in book form as *The Numerology of Dr Matrix* (1967). Reports of his death in 1980 turned out to be unfounded.





Laura Taalman was born 14 February in Scotland, CT. She is a mathematician at James Madison University. She co-authored the book Taking Sudoku Seriously: The Mathematics Behind the World's Most Popular Pencil Puzzle (with Jason Rosenhouse). She is also a computational designer who uses 3D design software and technical materials to create elegant realizations of a great variety of idealized mathematical objects.



Ravi Vakil was born 22 February in Etobicoke, Ontario, Canada. He is a mathematician at Stanford University, where he has been active in Putman training and Math Circles. His book *A Mathematical Mosaic: Patterns and Problem Solving* contains many gems, such as new divisibility tests for 7 and other numbers. For over a decade he coedited the "Mathematical Entertainments" column in the *Mathematical Intelligencer*.

"My dad and I wanted to understand how curved creases worked—their mathematics was a mystery at the time—so we experimented with what we could build with our four hands, taking turns placing folded pieces of paper into the sculpture. The resulting curved crease sculpture is a collaboration between father and son and, in some sense, between art and math." [Erik Demaine]





Convert the letter M to the letter G in four sliding moves. A move is sliding one coin at a time in such a way that at the end of the move the coin is stopped by at least two other coins, except for the cases when these three coins make a straight line. [Courtesy of Serhiy Grabarchuk Snr]



JANUARY S M T W T F S 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6	February 2021						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
31	1	2	3 Louis Kauffman	4	5	6	
7	8	9	10	11	12	13	
Donald Coxeter (1907- 2003)				Gary Antonick			
14 Teller Laura Taalman	15 Douglas Hofstadter	16 Stewart Judah (1893-1966) Marjorie Rice (1923-2017) Miquel Duran	17	18	19	20	
21 I J Matrix (1908-?) Hannah Fry Virtual Celebration of Mind	22 Ted Annemann (1907-1942) Ravi Vakil	23 Harlan Tarbell (1890–1960)	24	25	26 Ákos Császár (1924-2017) Burkard Polster	27	
28 Simon Norton (1952-2019) Erik Demaine	1	2	3	4	5	6	



Robert Abbott (1933-2018) was born 2 March in St Louis, MO. A very early correspondent of Martin Gardner—he contributed much to the latter's *Scientific American* column—he also worked as a computer programmer. Many of his inventions were card games, such as *Eleusis*, but he also came up with innovative board game variations (e.g., *Baroque, Crossings, Confusion*). He also invented the genre of logic mazes, the best known one being *Theseus and the Minotaur*.

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Paul Swinford (1931-2000) was born 29 March in Covington, KY. He was trained as a watchmaker and worked mostly in his family's business. He was a lifelong magician, and a protégé of Stuart Judah. He is best known for his books *Faro Fantasies* and *More Faro Fantasies*. He also invented the *Cyber Deck*, a 32-card deck of punched cards with which effects were produced using a sorting rod. He is also remembered as MC at G4G magic shows.



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George Csicsery was born 17 March in Regensburg, Germany and grew up mostly in Cleveland, Ohio. He is best known for his documentaries about mathematicians and mathematical communities. These include N is a Number: A Portrait of Paul Erdős, Julia Robinson and Hilbert's Tenth Problem, Hard Problems: The Road to the World's Toughest Math Contest, Navajo Math Circles, and most recently Secrets of the Surface: The Mathematical Vision of Maryam Mirzakhani.



Harry Houdini (1874-1926) was born 24 March in Budapest, Hungary, moving to Appleton, WI, as a child. He became the ultimate showman: part magician, part illusionist, and a consummate escape artist. He escaped from handcuffs, ropes, chains and straitjackets, as well as while restrained upside down or in containers filled with liquids.

Tim Chartier was born 15 March in Denver, CO, and grew up mostly near Philadelphia. He is an applied mathematician at Davidson College, and author of several books, with a focus on numerical methods, optimization and sports analytics. He's also a mime who trained with Marcel Marceau. He and his wife Tanya (born 2 March in Bay City, MI) specialize in "mime-matics" presentations to explore concepts ranging from tiling to infinity.





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Nick Baxter was born 10 March in Oakland, California. He is a software product manager with a passion for puzzles of all sorts. A fortuitous encounter with Nob Yoshigahara in NYC led to his attendance the following year at the inaugural Gathering 4 Gardner and also the 13th International Puzzle Party. He has long been active in both organizations, and now chairs the annual mechanical puzzle design competition named in Nob's honor.

Eleusis is a card game invented by Robert Abbott in 1956, and published by Martin Gardner in 1959. One player decides at the outset on a secret rule of play, and the other players then try to deduce what it is. The image on this page (sourced at Wikipedia) shows a game in progress: *"the top row is a sequence of valid plays, the cards below are past, invalid plays. (The game began with a 4 of hearts, followed by an invalid play of the 3 of spades, then a valid play of the 7 of spades.)"*



Write the ten digits 0 to 9 in these blanks: ___, ___, ___, ___ to make five 2-digit numbers, so that the difference between one number and the next is always the same (this is what mathematicians call an arithmetic sequence), and the numbers are in ascending order. Numbers are not allowed to start with a zero. There are four different solutions to this. Can you find them all? [Courtesy of Scott Kim]

FEBRUARY S M T W T F S 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 1 2 3 4 5 6	March 2021							
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday		
28	1 Gerry Piel (1915-2004)	2 Alex Elmsley (1929-2006) Robert Abbott (1933-2018) Tanya Chartier	3	4	5	6		
7 Stephen Kennedy	8	9	10	11	12	13		
Doug McKenna	Serhiy Grabarchuk Jnr		Nick Baxter	Yoshiyuki Kotani				
14	15 Bob Wainwright Andy Liu	16 Joseph Madachy (1927- 2014)	17	18	19	20		
Jenny Quinn	Tim Chartier	Keith Devlin	George Csicsery		Art Benjamin	Gianni Sarcone		
21 Edward Hordern (1941- 2000) Virtual Celebration of Mind	22 Rudy Rucker	23	24 Harry Houdini (1874-1926)	25 John Tierney	26	27		
28 Nicked Toroff	29 Paul Swinford (1931-2000)	30	31	1	2	3		



Bill Cutler was born 20 April in Bethlehem, PA. He trained as a mathematician and had a career both in academia and as a systems analyst. He is a consummate designer of mechanical, burr, and packing puzzles. In 1990 he completed a computer analysis of the 35.6 billion possible 6-piece burrs. One of his most famous inventions is *Blockhead* (aka *Sneaky Squares*), and his favorite designs include *Splitting Headache, Hybrid*, and *The Cube*.



Henry Dudeney (1857-1930) was born 10 April in Mayfield, England. He was a career civil servant and a renowned inventor and popularizer of logic and verbal arithmetic puzzles, and math games. He is most famous for the Haberdasher's puzzle, a triangle to square hinge dissection. Martin published two edited collections of his puzzles *536 Puzzles* & Curious Problems (1967) and *300 Best Word Puzzles* (1968).

Vickie Kearn was born 1 April in Portsmouth, Virginia, and mostly grew up in Jacksonville, Florida, and Puerto Ordaz, Venezuela. She taught math for several years before spending 40 years in publishing, most notably as an editor for SIAM and then Princeton University Press, often working alongside notable math and physics authors. She is now very active mentoring Girl Scouts who are working on STEM projects, and recently became the President of G4G.



Markus Götz (1974-2018) was born 10 April in Munich, Germany. Trained as a mathematician, he first worked at the Max Plank Institute and then in industry. He was a brilliant solver and prolific creator of both mechanical puzzles and mathematical problems. He came up with a particularly creative solution to the diamond challenge at the bottom of the May page.





Skona Brittain was born 10 April and grew up in the suburbs of Los Angeles and Boston. She taught math & computer science at various colleges for a while. For over two decades, she has led math teams, math camps and math circles in Santa Barbara. On the side, she creates math games and math clocks (she was the first to design and market clocks with math expressions for the hours).



Tadashi Tokieda was born 2 April in Tokyo, Japan. He started his career as a painter, then trained as a classical philologist. He is now a mathematical physicist at Stanford University. He loves collecting, studying and inventing toys that hinge on surprising uses of mathematics and physics. Many of those can be made easily at home using simple materials.

"Here is a collection of some of my work. From the back: *Boxed Box*—my best math puzzle design—a 3-d variant of the *Squared Square*; *The Hybrid*; *The Visible Burr*. In front: *Helix the Burr*, *The (Cutler) Cube* (66 pieces); *Blockhead* aka *Sneaky Squares*; and finally *Bill's Baffling Burr*—winner of Stewart Coffin's Holey 6-Piece Burr contest." [Bill Cutler]





Remove a 1x1 square from a corner of a 7x5 rectangle. Remove a 2x1 rectangle from the opposite corner. Your task is to bisect the result into two congruent halves. Curves and diagonals are permitted. [Courtesy of Bill Gosper]

MARCH S M T W T F S 28 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3		Max F S 25 26 27 28 29 30 1 2 3 4 5 6 7 8 9 10 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5				
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28	29	30	31	1	2	3
				Vickie Kearn	Tadashi Tokieda	David Rosdeitcher
4 David Blaine	5 Fernando Blasco	6	7 Bill Simon (1927-1988) Tom Banchoff John R Miller (Atlanta)	8	9 Tom Lehrer	10 Henry Dudeney (1857- 1930) Skona Brittain Markus Goetz (1974-2018)
11	12	13	14	15	16	17
18 Barry Cipra	19 Mark Mitton	20 Bill Cutler	21	22	23	24
Virtual Celebration of Mind	Virtual Celebration of Mind	Virtual Celebration of Mind	Virtual Celebration of Mind	Virtual Celebration of Mind	Virtual Celebration of Mind	
25	26 Bill Gosper Jason Rosenhouse	27	28 Joseph Dunninger (1892– 1975) Peter Renz	29	30 Lee Sallows Erich Friedman	1



Ann Schwartz was born 23 May in NYC, and grew up on Long Island. As a teenager, she got hooked on flexagons, thanks to Martin Gardner. After working for many years in publishing, she now makes jewelry and is again obsessed with flexagons. She has folded up over a dozen new ones-and knows that regardless of how many are discovered, there will always be more.



Rudolf Carnap (1891-1970) was born 18 May. Martin Gardner edited his Philosophical Foundations of Physics, which was based on Carnap's lectures that he had attended in Chicago in 1947. Martin later wrote, "Every idea in the book is Carnap's, every sentence is mine. The collaboration was one of the happiest tasks of my life."

L. Frank Baum (1856-1919) was born 15 May in Chittenango, New York. In midlife he struck gold with the book The Wonderful Wizard of Oz. Martin Gardner later wrote, "I learned to read by looking over my mother's shoulder while she read aloud The Wizard of Oz. I simply followed the words as she spoke." Martin co-authored a book on Oz in 1957 and is credited with providing the first detailed account of Baum's life, as well as the first reasonably complete bibliography of his works.

> Teja Krašek was born 4 May in Celje, Slovenia. She was trained as a painter, and uses classic techniques in conjunction with computer technology to meld art, science and math. She is especially interested in symmetry and tilings. Her work often features polyhedra, Penrose tiles, the golden ratio, self-similarity, inward infinities and perceptual ambiguity.

Jeannine Mosely was born 16 May in Pittsburgh, PA. She trained as an electrical engineer, and then worked in industry developing geometric modeling algorithms for computer aided design. Her specialties include modular origami, minimalist origami, and "or-egg-ami" (models made from egg cartons). She once led a team of 200 people in building a level-3 Menger Sponge over many years using over 65,000 business cards.







Nob Yoshigahara (1936-2004) was born 27 May in Tokyo, Japan. He started his career as a chemist, then became a math teacher. He was a celebrated inventor, collector, solver, and communicator of mechanical puzzles. He sometimes programmed computers to help design and solve puzzles. His most famous creation is Rush Hour, and he also used his diverse skills to create ingenious optical illusions and impossible objects.

"These flexagons were folded from straight strips divided into 30-60-90 degree triangles arranged in the same pattern on each strip. The images in the second row show three faces of the same flexagon, illustrating changes in shape and triangle placement. Note the similarity between the red and violet triangle on the top row and the violet and green triangles below it." [Ann Schwartz]





The tile shown is a diamond with 120° and 60° angles. Divide it into three tiles that are similar to each other, that is, they are the same shape but may be of different sizes. Tiles may be turned over. How many solutions can you find using tiles that are parallelograms? How many other solutions can you find? [Courtesy of Dick Hess]

APRIL S M T W T F S 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 1		Ν	AY 202	1		JUNE JUNE S M T W T F S 30 31 I 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 1 2 3
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
25	26	27	28	29	30	1
2	3 Kozaburo Fujimura (1903- 1983)	4 Kate Jones Robert Lang Teja Krašek	5 Glen Whitney	6 Meir Yedid	7	8
9	10	11	12	13	14	15
Dániel Erdély					Stewart James (1908-1996)	Frank Baum (1856-1919)
16 Jeannine Mosely Steve Butler	17 Stefan Kanfer (1933-2018)	18 Bertrand Russell (1872- 1970) Rudolf Carnap (1891-1970)	19	20 Greg Frederickson Mark Burstein	21 Mel Stover (1912-1999) Owen O'Shea Virtual Celebration of Mind	22
23	24	25	26	27	28	29
Boris Kordemsky Ann Schwartz		Raymond Smullyan (1919- 2017)		Nob Yoshigahara (1936- 2004)		G K Chesterton (1874-1936)
30 Stewart Coffin Sol Golomb (1932-2016)	31	1	2	3	4	5



Sándor Bozóki was born 8 June in Kiskunmajsa, Hungary. He trained in mathematics and economics, and now works in academia in Budapest. By combining his expertise in global optimization and polynomial systems, he was part of the team that settled an old question of Littlewood's: "Can seven cylinders be arranged so that each touches all the others?" He also designs mechanical puzzles, and makes impossible bottles and matchsticks/pin creations.

Ivan Moscovich was born 14 June in Novi Sad, Serbia. Having survived horrific WWII concentration camp experiences, he trained as a mechanical engineer. Moving to Israel, he ended up as a designer and developer of toys, games, and puzzles. In the 1960s, he founded the Museum of Science and Technology in Tel Aviv, and in recent decades he has published numerous wonderful puzzle books.





Gwen Fisher was born in June in Silicon Valley, CA. She trained in math and math ed, and worked in academia for a while. She has long been active in mathematical art. She takes her inspiration from geometry and topology, and her creations include all forms of beaded objects including jewelry and especially beaded beads, which are beads made from beads. She has beaded dozens of mathematical objects, from impossible triangles to non-periodic tessellations, and even space-filling polyhedra.

Ken Knowlton was born 6 June in Springville, NY. He worked for Bell Labs for many years, and pioneered digital mosaics there, having been the first man to fill a screen with pixels (in 1963) using his own programming language. Two decades later he invented a method of making portraits from complete sets of dominoes. In 2011, he pushed these ideas even further with *Ji Ga Zo*, which permits the user to assemble any desired image with 300 shaded pieces.





Nancy Blachman was born 18 June in Palo Alto, CA. She was trained in math, computer science and operations research. She has published guide books to *Mathematica*, *Maple*, and *Google*. Having learned at an early age through collaborating with her father that it's fun to explore and make discoveries, she was inspired to share this joy with many others by founding the Julia Robinson Mathematics Festival in 2007. She recently completed a term as the Chair of Gathering 4 Gardner.



Ray Hyman was born 23 June in Chelsea, MA. He has had a long career as a psychologist, mostly at the University of Oregon. He is a leading light in the skeptical movement, and was a cofounder of the Committee for Skeptical Inquiry, alongside Martin Gardner, James Randi and others. He is a magician and mentalist, and a world expert on both deception and self-deception. He developed the *Skeptic's Toolbox* as a major tool in the fight against parapsychology.

"The image of seven mutually touching cylinders was taken at G4G11 in Atlanta in March/2014. Their existence settles an old question by J.E. Littlewood. They were found as the result of a collaboration with Tsung-Lin Lee and Lajos Rónyai. Using a system of 20 polynomial equations in 20 variables, and five weeks on 16 computer processors, we actually found a solution." [Sándor Bozóki]



Here's something I came up with, recalling Martin's affinity for matchstick puzzles. Your resources: 12 identical matchsticks, a straight edge, and a pencil. Your challenge: make a square whose side-length is exactly 1.4 match-lengths. [Courtesy of Rob Jones]

$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		Ju	UNE 202	1		S M T W T F S 27 28 29 30 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30	31	1	2	3	4	5
			Ross Honsberger (1929- 2016)	Bill Kalush	Cliff Stoll	Jerry Slocum
6	7	8	9	10	11	12
Ken Knowlton		Sándor Bozóki			Dai Vernon (1894–1992)	Rob Jones
13 Rinus Roelofs	14 Ivan Moscovich Bob Cherniak Tom Cutrofello	15	16	17 M C Escher (1898-1972)	18 Jorge Nuno Silva Nancy Blachman Brady Haran Po-Shen Loh	19
20	21	22	23	24	25	26
Dick Esterle	Virtual Celebration of Mind	Chaim Goodman-Strauss	Ray Hyman			
27	28	29 Kokichi Sugihara	30 Harry Blackstone Jnr (1934- 1997) Derek Bosch		2	3



Victoria Skye was born 23 July in Texas. Her career has included mechanical design and she also has a background in woodworking. She is a magical entertainer and illusion artist, with a particular interest in designing optical illusions and impossible objects. Two of her creations have placed in the top 10 in Illusions of the Year Contests. She strives to use her magic and illusion art to challenge people to look beyond first impressions and to believe in the impossible.

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Lisa Rougetet was born 28 July in Nancy, France, and grew up there and in Lille. She is a mathematician who focuses on the history of math, and now works at the University of Brest. Her interests include combinatorial games and math games in general, and their history and use in the math classroom, as well as paper folding in recreational mathematics in the 17th and 18th centuries.





Ernő Rubik was born 13 July in Budapest, Hungary. An architect by training, he has made a career as an inventor of mechanical puzzles. He is best known for the twisty cube bearing his name, which first took the world by storm forty years ago. The Rubik's Cube has delighted and educated countless kids and adults alike, and has also inspired many designers. Other creations that use Rubik's name are his *Magic*, *Snake*, and 360 puzzles.

Marjorie Senechal was born 18 July in St Louis, MO, and grew up in Lexington, KY. She is a mathematician and historian of science who spent her career at Smith College. She is an expert on mathematical crystallography (including 2D tessellations and 3D quasi– crystals), as well as silk, and has written and/or edited a dozen books. She recently concluded fifteen years as editor-in-chief of *The* Mathematical Intelligencer.





Tim Rowett was born 12 July in Surrey, England. He trained as a mechanical engineer and later worked as a children's entertainer. Over a half century, he amassed a huge collection of toys, novelties, and optical illusions. In recent years, he has hosted *Grand Illusions*, a very successful video channel that provides a platform to share his cornucopia of delights.



Lisa Menna was born 23 July in Connecticut and grew up in Humble, TX. She is a magician with several "firsts" to her name as a female in that profession. She is also an activist who makes creative use of her prestidigitation skills to get important points across. She has done extensive work in underdeveloped countries in Africa and elsewhere, spreading messages such as, "A clean lake is a happy life" and "Helping women brings good things".

"My Impossible Arrow Through Deck consists of a solid wooden arrow placed in the center of a normal deck of cards. Nothing is cut and glued back to produce the impossible effect. The solution to an impossible puzzle comes by thinking of the physical properties and answering the question 'How was it made?' " [Victoria Skye]





The image shows a toroidal polyhedron with 36 regular polygon faces. Find one with fewer faces. Can you find one which is asymmetrical? [Courtesy of Bill Gosper]

JUNE S M T W T F S 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 1 2 3		J	ULY 202	1		Aucust S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
27	28	29	30	1	2	3
					Looy Simonoff Alexandre Muñiz	
4	5	6	7	8	9	10
John Allen Paulos Paula Apsell Richard Garriott	Dave Richeson				Dick de Bruijn (1918-2012) Jennifer Beineke	
11	12	13	14	15	16	17
	Tim Rowett	Ernő Rubik				Terry Tao
18	19	20	21	22	23	24
			Henry Segerman Adam Rubin		Lisa Menna	Lord Dunsany (1878-1957) Adam Atkinson
Marjorie Senechal			Virtual Celebration of Mind	Doron Levy	Victoria Skye	G4G Online Auction
25	26	27 Eve Torrence	28 Lisa Rougetet	29	30	31
G4G Online Auction	G4G Online Auction	G4G Online Auction	G4G Online Auction	G4G Online Auction	G4G Online Auction	G4G Online Auction



Adrian Fisher was born 5 August in Bournemouth, England. He trained as a management consultant, and is known today as a pioneering designer of mazes, tilings, and networks of various types. From hedge mazes to water mazes, maize mazes and brick mazes, and vertically "a-mazing" buildings, he employs innovative mathematical tessellations in striking ways in public and private spaces. His installations are on display in over forty countries.



Manjul Bhargava was born 8 August in

Hamilton, Ontario, Canada, and mostly grew

mathematician who teaches at Princeton, and

up on Long Island, NY. He is a world class

a winner of the Fields medal. He is also an

accomplished tabla player and a devotee of

Sanskrit poetry. He is a strong believer in the

importance and value of recreational math,

and the potential of mathematical magic to

Daina Taimina was born 19 August in Riga, Latvia. She is a mathematician who also trained in theoretical computer science, and she has taught math both in Latvia and at Cornell University. Inspired by a workshop given by David Henderson, she developed crocheted models of hyperbolic planes. In due course, this led to a book, and numerous art exhibitions and installations worldwide. Her revolutionary tactile approach has made a formerly difficult math topic accessible to a wide audience.

Tom Rodgers (1943-2012) was born 1 August in Millidgeville, GA, and raised in Philadelphia, PA. He trained as an economist and worked for many years as a consultant, financial advisor and real estate investor. An avid puzzle and book collector, it was his idea to invite Martin Gardner and associates to a small meeting in Atlanta in January 1993, which blossomed into the Gathering 4 Gardner we know today. He teamed up with Elwyn Berlekamp and Mark Setteducati to make this happen.



"In 1988, our team designed the Leeds Castle maze shown, whose symbolic image contains a queen's crown and a chalice. The maze cannot be solved using the hand-on-wall method yet also has a quick exit—normally a topological impossibility. The ingenious solution is an underground exit tunnel which, unlike a quick exit bridge, no one is aware of when exploring the maze." [Adrian Fisher]



draw people into deep ideas.

Roger Penrose was born 8 August in Colchester, England. He is a world class mathematician and mathematical physicist, and a recent Nobel laureate in physics. His career has been spent at various institutions in Britain and the U.S., most recently at the University of Oxford. In addition to his groundbreaking work on black hole formation in the 1960s, he is known for his tribar (impossible triangle) and a pair of tiles that can only tile the plane in a nonperiodic way (these are now called Penrose tiles).

Randi drove from NYC to Hartford, CT, a distance of 120 miles. Martin also drove from NYC to Hartford, CT, but he left 10 minutes after Randi. They drove along the same road, and there was no traffic. Martin arrived at B exactly 10 minutes later than Randi. However, on Martin's car dashboard the total distance driven was 1 mile less than the distance on Randi's car dashboard. How can that be? [Courtesy of Serhiy Grabarchuk Jnr]

Jutx Jutx S M T W T F S 27 28 29 30 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31		Au	GUST 20)21		September F S 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 1 2
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
Tom Rodgers (1943-2012) John Railing Amina Buhler James Tanton	Scot Morris		Marc Pelletier (1958-2017) Wei-Hwa Huang	Alexander Dewdney Adrian Fisher Tomas Rokicki		James Randi (1928-2020)
8	9	10	11	12	13	14
Roger Penrose Manjul Bhargava	Marvin Minsky				Bob Bosch	
15	16	17	18	19	20	21
Cliff Pickover				Paul Curry (1917-1986) Daina Taimina		Virtual Celebration of Mind
22	23	24	25	26	27	28
		Scott Hudson de Tarnowsky David Plaxco		Will Shortz		
29	30 Colin Wright	31	1	2	3	4



Richard Guy (1916-2020) was born 30 September in Warwickshire, England. The second half of his life was spent in Calgary, Canada. He had an 80+ year career in mathematics, and was a firm believer in the importance of recreational math. A longtime correspondent of Martin Gardner, his books ranged from *Winning Ways for Your Mathematical Plays* (with Berlekamp and Conway) to the posthumous *The Unity of Combinatorics* (with Bud Brown). He co-discovered uni-stable polyhedral (one of which is shown on this page).

Zvezdelina Stankova was born 15 September in Ruse, Bulgaria. She is a mathematician who teaches at Mills College and at Berkeley. She founded the Berkeley Math Circle, the second such circle in the U.S., and has co-edited two resulting books. She also co-founded the Bay Area Mathematical Olympiad, and has been actively involved in the U.S. participation in the International Mathematical Olympiad.





Elwyn Berlekamp (1940-2019) was born 6 September in Dover, OH. He was a distinguished mathematician and electrical engineer whose interests included computer science, combinatorial game theory, error-correcting codes, and recreational math. He worked at Bell Labs and at UC Berkeley, and published several books. He was a long-term friend of Martin Gardner, and in 1992, he and Mark Setteducati joined forces with Tom Rodgers to create what would become the Gathering 4 Gardner.



Bronna Butler was born 27 September in St Joseph's, MO. She was a financial executive in NYC for several decades. Now she is focused on her first loves, math and art. She uses Baroque painting techniques in conjunction with glass, mirror and metal sculpture to explore recreational math and create portraits of mathematicians and physicists.

Alexa Meade was born 3 September in Washington, DC, and grew up in Chevy Chase, MD. Although she has no formal art training, she has carved out a career for herself as an installation artist. She has a totally original process that is in one sense the opposite of hyperrealism. Instead of making 2D images look totally realistic, she makes real 3D entities look like pieces of art.





Jean Pedersen (1934–2016) was born 17 September in Salt Lake City, UT. She was a mathematician who spent her career at Santa Clara University. Her discovery that the platonic solids could be braided from strips of paper led to Martin Gardner writing about it in *Scientific American*. She had about a dozen books to her name, and among those co-authored with Peter Hilton were *Build Your Own Polyhedra* and *A Mathematical Tapestry: Demonstrating the Beautiful Unity of Mathematics.* The latter used paper folding to show connections between geometry, number theory, and group theory.

A unistable polyhedron (or monostatic polytope) is one that "can stand on only one face"—when it is placed on any other face, gravity causes it to roll over. The first such example was published by Richard Guy, Mike Goldberg and John H. Conway in 1969; it had 19 faces. By 2014, Alex Reshetov had found one with only 14 faces. It can be viewed in action in the online video "Richard Guy 100th Birthday Tribute Song".



1. On average, who has more sisters, male or females? 2. How can you get a 50-50 decision by flipping a bent coin? 3. Each day Ms. Gonzalvez distributes her 12 fifth-graders into Zoom breakout rooms containing three or four students each. She has devised a schedule in which every pair of students is together in a breakout room exactly once. How many days does her schedule run? [All courtesy of Pete Winkler]

AUGUST S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4	September 2021							
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday		
29	30	31	1	2	3	4		
					Al Seckel (1958-2015) Alexa Meade	Susan Goldstine		
5	6 Marcello Truzzi (1935- 2003) Elwyn Berlekamp (1940-	7	8	9	10 C S Peirce (1839-1914)	11		
Dan Garrett	2019)		Roxana Küwen Arsalan		Brain Epstein			
12 Marti Pois	13 Simon Aranson (1943- 2019) John F Miller (Portland)	George Bell Oskar van Deventer	Henry Strickland	16	17	18		
19	20	21	22	23	24	25		
26	27	Virtual Celebration of Mind	20	20	lan Stewart	2		
26 Percy MacMahon (1854- 1929)	27 Harry Blackstone Snr (1885–1965) Bronna Butler	28	29	30 Richard Guy (1916-2020)		2		



Carolyn Yackel was born 18 October in West Lafayette, Indiana. She is a mathematician at Mercer University in Macon, Georgia. She focuses a lot on math and art, including the realization of diverse geometric and topological structures via quilting, cross-stitching, crocheting, knitting, and embroidery. She has co-edited three books bringing the mathematical fiber arts to life.



Martin Gardner (1914-2010) was born 21 October in Oklahoma. He studied philosophy at the University

of Chicago, and gained fame as a recreational math

columnist for *Scientific American* and as the author of over 100 non-fiction books. His passions

included rationality/skepticism, close-up magic, Alice in Wonderland scholarship, physics and more.

With his engaging writing spanning many decades, he stimulated critical thinking, curiosity and the

Carlota Simões was born 20 October in Guarda, Portugal, and grew up in Peso, near Covilhã. She is a mathematician at the University of Coimbra, and also director of the Science Museum there. Her interests include the history of science, philosophy of mathematics, word play, and women in science. She has two popular books (in Portuguese), *Discover Mathematics* and *Discover Sound*.

Eli Maor was born 4 October in Israel. He has long taught the history of mathematics at Loyola University Chicago. He has authored seven popular books, from *To Infinity and Beyond: A Cultural History of the Infinite*, to e:*The story of a Number*, and *The Pythagorean Theorem: A 4,000-Year History.*



Doris Schattschneider was born 19 October in Staten Island, NY. She is a mathematician whose career was mostly spent at Moravian College in Bethlehem, PA. Her expertise includes tilings, and she validated Marjorie Rice's amateur pentagonal discoveries communicated to Martin Gardner. She is also a world expert on the math of M.C. Escher's art, with three books to her name on that topic.



playful exchange of ideas.

Margaret Kepner was born 10 October in South Dakota, and grew up mostly in Oregon. She spent several years teaching math and physics in high school, before working for decades in information systems at the International Monetary Fund. Now based in Washington, DC, she is focused on her longtime interest in finding connections between mathematics and art.

"The background artwork depicts Archimedean solids via temari, the Japanese craft of embroidering on a thread-wrapped ball. Seven of the thirteen Archimedean solids can be obtained by truncating Platonic solids. This piece shows five truncated Platonic solids projected onto the sphere: the truncated cube, the cuboctahedron, the truncated tetrahedron, the truncated octahedron, and the icosadodecahedron." [Carolyn Yackel]



In the province of Peculia Pecunia, you are paid on an annular basis (sic!). That is, you get a unit gold disk from whose center is punched a smaller disk which you donate to charity. Then the tax man chops off the largest segment he can (tangent to the charity hole), and you get the rest. Find the radius of the charity disc which maximizes your take-home pay. Do it the way Martin would have, without calculus. [Courtesy of Bill Gosper]



SEPTEMBER S M T W T F S 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 1 2		October 2021						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday		
26	27	28	29	30	1 Robert Ammann (1946-	2		
					1994)			
3	4	5	6	7	8	9		
James Lee	Eli Maor			Frank Farris				
10 Ed Marlo (1913-1991) Neil Sloane David Klarner (1940-1999)	11	12	13	14	15	16		
Margaret Kepner	Ron Lancaster		James Grime					
17	18	19	20 Laurie Brokenshire (1952-	21	22	23		
			2017) Corleta Simãos	Martin Gardner (1914-2010)	Pah Crassa			
	Carolyn Yackel	Doris Schattschneider	G4G14	G4G14	G4G14	G4G14		
24 Vosburah Lyons (1892-	25	26	27	28	29	30		
1976)	Pon Taylor	Dono Disharda	Scott Kim			Carlo Sáquin		
31 Ron Graham (1935-2020)	Ron Taylor	2	Ginis masianka 3	4	5	Gano Sequin		



Mark Setteducati was born 1 November in NYC. He trained in art and design, and is a magician and prolific inventor of magic, illusions, games, toys, and puzzles. He co-authored the book *The Magic Show*. In 1992, he and Elwyn Berlekamp joined forces with Tom Rodgers to create what would become the Gathering 4 Gardner, which has hosted 13 multi-day conferences to promote the legacy of Martin Gardner.

Robert Fathauer was born 22 November in Decatur, IL, and trained as a research scientist, later working at the Jet Propulsion Laboratory in California. These days he uses mathematical ideas to create distinctive prints and sculptures. He also designs puzzles and unusual polyhedral dice. His latest book is *Tessellations*: *Mathematics, Art, and Recreation*. Alex Bellos was born 22 November in Oxford, UK, and grew up in Edinburgh and Southampton. He is a journalist and broadcaster, who regularly poses puzzles and brainteasers in the Guardian. His books include Alex's Adventures in Numberland (Here's Looking at Euclid in U.S.), Alex Through the Looking-Glass (The Grapes of Math in the U.S.), and The Language Lover's Puzzle Book.

Siobhan Roberts was born 27 November in Belleville, Ontario, Canada. She is a science journalist and biographer. Her books include *King* of Infinite Space: Donald Coxeter, the Man Who Saved Geometry and Genius At Play: The Curious Mind of John Horton Conway. In 2017, she won the Joint Policy Board for Mathematics Communications Award "for her engaging biographies of eminent mathematicians and articles about mathematics".



Pete Winkler was born in November. He is a mathematician whose career has been spent in both academia and industry, most notably at Bell Labs and Lucent Technologies. He currently teaches at Dartmouth College, and his interests include discrete mathematics, the theory of computation, probability theory, bridge, and recreational math. He has authored three books on mathematical puzzles.



MA

SETTER

Stan Isaacs was born 19 November in NYC, and grew up in Philadelphia and in Silver Spring, MD. He spent his career as a computer programmer, at Hewlett-Packard and other companies. He is a big supporter of recreational math for young people, and is well known for his collections of wooden and mechanical puzzles. He contributed to the organization of the Martin Gardner Papers at Stanford University, a permanent repository of about 160 boxes of Gardner correspondence.

"Martin Gardner's *Mathematics, Magic, and Mystery* (1956) is my favorite of his books. I first read it more than thirty years ago, yet I still pick it up and find new inspiration. My *Magic Show* pictured in the background is a magic set and book containing material inspired by Martin." [Mark Setteducati]



Martin and Charlotte divide a small Thanksgiving pie. Martin cuts the pie into two pieces; then Charlotte cuts one of those pieces into two pieces. Then Martin cuts one of the three pieces into two pieces. Martin gets the largest and smallest pieces produced; Charlotte gets the middle two pieces. What strategy does Martin use to get the largest fraction of pie and how large is it? [Courtesy of Dick Hess]

OCTOBER S M T W T F S 26 27 28 29 30 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 201 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6	November 2021							
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday		
31	1	2	3	4	5	6		
	Mark Setteducati			Herb Zarrow (1925-2008)	Tom Hull			
7	8	9 Carl Sagan (1934-1996) Dick Hess	10	11	12 Géber Domokos	13		
14	15	16	17	18	19	20		
Cindy Lawrence	Colin Beveridge		Tiago Hirth		Stan Isaacs	Lowell Beineke		
Howie Schwartzman (1927- 2020) Virtual Celebration of Mind 28	Robert Fathauer Alex Bellos 29	Joe M Turner 30	Karen Farrell	25 Ron Wohl (1936-2014) 2	Alex Fink 3	27 Siobhan Roberts 4		
Uwe Meffert Dana Randall	C S Lewis (1898-1963)							



John Horton Conway (1937-2020) was born 26 December in Liverpool, England. A world class mathematician whose interests spanned many areas, his career was spent at Cambridge and Princeton Universities. He was a consummate showman who dabbled in magic. He made numerous contributions to Martin Gardner's *Scientific American* columns, most notably in connection with his invention of the Game of Life.

Lennart Green was born 25 December in Västervik, Sweden. He trained and worked for a while as a medical doctor, but is best known as an unconventional close-up and card magician, winning the FISM world champion title in 1991. While feigning clumsiness, he uses considerable skill to wow audiences with seemingly impossible feats.



Jerry Farrell was born 12 December in Hastings, Nebraska. He taught math at Butler University for over half a century. He has designed many crossword puzzles for the NY *Times*. Along with his wife Karen (born 24 November) he edited and published *Word Ways: The Journal of Recreational Linguistics*. The couple have also been mainstays of Gathering 4 Gathering conference organization throughout its history.

David Singmaster was born 14 December in Ferguson, Missouri. He's a mathematician who taught for many years at London South Bank University in the UK. A metagrobologist who has been coming to G4Gs from the very beginning, he is best known as an early adopter and promoter of the Rubik's Cube, who also established a popular notation for cube moves that is still in use today.





John Kostick was born 31 December in Boston, MA. As a result of attending a Buckminster Fuller lecture as a student, he was inspired to focus on exploring math concepts such as tensegrity, via building physical models. Having picked up wood, glass and bronze work skills, he and wife Jane (born 8 December in NYC) are now full-time designers with a passion for "mathematical truths that you can hold in your hand." Together, they produce furniture, cabinetry, a range of magnetic puzzles, and fine woodwork pieces based on geometry.



Alan Schoen was born 11 December in Mount Vernon, NY, and trained as a physicist. He spent the early part of his career in industry, later switching to academia, where he taught math and computer science. He is well known for his research in minimal surfaces, in particular the discovery of the gyroid. He has authored or co-edited books on geometric shapes and puzzles, including two volumes of G4G papers.

"The background image is from my cover for the AK Peters edition of John Conway's book *On Numbers and Games* (2000). The book explains the basics of combinatorial game theory, including games like Hackenbush. The lettering is a Hackenbush game rooted in the border, which meant all letters had to connect." [Scott Kim]





Assemble five 4-colored 2-stacks, or "tetraballs" (on left) into a 4-stack "tetrahedron" (such as on right) so no two spheres of the same color touch. [Courtesy of Dick Esterle & John Conway]



NOVEMBER S M T W T F S 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 1 2 3 4		DECEMBER 2021							
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday			
28	29	30	1	2	3	4			
				Craig Kaplan		George Andrews Ivars Peterson			
5	6	7	8	9	10	11			
Oscar Weigle (1918-2005) Robin Wilson		Ken Brecher Ed Pegg	Jane Kostick		Lajos Szilassi	Alan Schoen			
12	13	14	15	16	17	18			
Jerry Farrell		David Singmaster	Hirokazu Iwasawa	Piet Hein (1905-1996)	Bruce Oberg				
19	20	21 Paul Kurtz (1925-2012) Max Maven Thane Plambeck	22	23	24	25			
	Edwin Abbott (1838-1926)	Virtual Celebration of Mind	Matt Parker			Lennart Green			
26 John H Conway (1937- 2020)	27 Harry Eng (1931-1996)	28	29	30	31 John Kostick	1			

MARTIN GARDNER & Archimedes Orive, Klein on Tyne, Now York



Re: Your letter to Martin Gardner, requesting an autobiographical sketch for use in connection with the

publication of his new book.

Gentlemen:

Martin is currently on vacation in the Double Helical Mountains and cannot be reached before your publication deadline. I have been Martin's houseguest for some time, and he asked me to take care of all pressing correspondence in his absence. Because of the important nature of your request, I feel compelled to fill you in on some hitherto unrevealed aspects of Martin's background.

I think Martin will want to pass up doing a piece about himself as a puzzle specialist. The awful truth is that he is not in any sense a 'mathematician'he took not a single mathematics course in college.

What happened was that Martin wrote an article on "Hexaflexagons," which ran in the December 1956 issue of Scientific American. The publisher proposed a regular column on mathematical diversions, and asked Martin if he thought he could keep one going. Martin jumped at the opportunity-being newly married with one son, he desperately needed the money. He quickly bought all the puzzle books he could find, began subscribing to a dozen math journals, and read like mad to learn as much basic math as he could. (Note that with characteristic egotism, Martin used his own initials, M. G., as the initials of "Mathematical Games," the title of his department.) Since then his wellknown gall and glibness have seen him through, and he has gained the reputation of being a mathematician. Just between us, however, he couldn't solve a simple calculus problem if his life depended on it.

I hasten to add that this kind of ignorance is an asset to a popularizer of science or mathematics; Martin has to work hard to understand everything, so he knows where the pitfalls are and how to write so that all his readers can understand him. (Of course, when I'm in town I help as much as possible.) All this might make an amusing article, but I am worried that some of Martin's fans might be disappointed at his lack of academic credentials.

Your humble servant, Owing Johna Matrix IRVING JOSHUA MATRIX

From: W. H. Freeman and Company Dr. Irving Joshua Matrix To:

THE AWFUL **TRUTH**" ABOUT

MARTIN GARDNER

You are indeed, as Martin Gardner has so often indicated, a scoundrel. We intend to print your letter 'exposing' him and follow it with an excerpt from his Sixth Book of Mathematical Games from Scientific American. Let the reader decide who is the master of this field! Indignantly,

W. H. FREEMAN AND COMPANY

*As told by famed numerologist Dr. Irving Joshua Matrix, subject of many of Mr. Gardner's columns and of his book The Numerology of Dr. Matrix (1967).

Excursions for SCIENTIFIC AMERICANS

A G for G

15

18

20

Across

- 1. Conjurers 10. Scientific managers 12. The big G is 4 this great G
- 14. Salary losses
- 15. Siberian antelopes
- 17. Moroccan range
- 18. Cousteau's creation
- 19. "My ____" from Hamilton
- 20. Fortress
- 21. Sun. homily
- 22. UK leaders
- 23. Tommyrot
- 31. Western org

13

16

11

Down

- 1. Market: Scots
- 2. A thing done: Latin
- 3. Google strike: slang
- of Court, law buildings
- 5. Machine tooth
- 6. City in Peru
- 7. LAX landings 8. Zeroes in Zaragozas
- 9. More rapid than eagles his coursers they ca
- 10. Infinite sums in calculus
- 11. Proceed without pause
- 12. The realm of proof
- 13. Broccoli varietv
- 14. Travelers' needs
- 16. Easy mark
- 23. For viewing only: abbr.



Pictured: Tom Rodgers, Elwyn Berlekamp and Mark Setteducati

In the early 1990's, Tom Rodgers wanted to find a way to honor his friend Martin Gardner. Martin was living in North Carolina, a three-hour car ride to Atlanta where Tom lived. Although Martin didn't like to travel or attend events, Tom was determined to get Martin and some of his close friends together. Tom reached out to Martin's puzzle friends, asked me to invite his magician friends, and asked Elwyn Berlekamp to invite his mathematician friends to come to Atlanta. Somehow Tom convinced Martin, by offering to personally pick him up and drive him to and from Atlanta, to attend. In January 1993, this gathering, which was meant to be a one-time event, took place in Atlanta. In the months following this gathering, attendees kept asking Tom when will he do this again? After much discussion between Tom, Elwyn and myself, a second gathering was held; then a third, and a fourth, and as of today, there have been thirteen Gatherings.

When Martin passed away in May 2010, many people told Tom we need to do a memorial for Martin, and Tom knew that Martin specifically didn't want any kind of memorial service. After much discussion between Tom, Elwyn and myself, and to honor Martin's wishes, we decided to organize a celebration of Martin's life on his birthday, October 21. Rather than do a single in-person event in one location, we would encourage people around the world to celebrate Martin, in their own cities and countries, whether it be just two people or a group, to gather and party by playing with puzzles, magic, math, and all the other topics Martin wrote about. We were to make this an annual event and have it organized and documented through the internet. Thus "The Celebration of Mind" was created.

Sadly, in 2012, only days after G4G10, Tom Rodgers passed away, and on April 9, 2019, we lost Elwyn Berlekamp. Tom's mission in life was to encourage people to play and think, and his wish was for this gathering that he created to continue. I am happy to say, despite the loss of Tom, Elwyn, and many of our past distinguished attendees, the Gathering for Gardner is not only continuing, but going stronger than ever.

10

12

14

17

19

Mark Setteducati (December 2020)

- 32. Tetrahexahedron
- 33. Hwys
- 35. Fixed way of travel
- 36. Whitewalls
- 38. Sidewalk trimmer
- 39. Knowledge
- 42. Frightens
- 43. Inevitable lapses
- 46. Not thoroughfares
- 47. Hovels

21														
22							23	24	25	26	27	28	29	30
31							32							
33			34				35							
36				37						38				
39					40	41			42					
	43						44	45						
		46												
			47											

24. Grand ___ Opry 25. Filbert 26. Cashier's woe 27. Caustics 28. Milky Way parts 29. Those who choose locations 30. Portuguese footballer, et al 34 "I've __all before" 37. Dishonest ___ Brothers, filmmakers 40 41. Irish speech 42. So be it 44. Rhoda's company 48. Vein contents

Credit: Dana Richards











The (usually) biennial Gathering 4 Gardner Conference is organized around informative presentations on topics of the kind that Martin Gardner would have enjoyed. It also includes magic shows, art shows, challenging puzzles and toys, hands-on math activities, and large geometric sculpture constructions for the participants to enjoy. At G4G13, in April 2018, there was an offsite event open to the public, hosted in downtown Decatur, a few miles east of Atlanta. The last five images of the ten shown here depict sculptures that were group-assembled in Decatur.











a**ges above:** Nathaniel Segal entertains; Derrick Chung, Tanya Thompson & Adam Rubin; Louis Kauffman & Tiago Hirth; hands-on activities in Decatur elcome to the Ritz-Carlton; Rinus Roelofs (with his "Slide-Together Rhombicosidodecahedron") & Gerd Åsta Bones; construction of "Eddy" by George art; completed "Eddy"; "Coral Sculpture" by Chaim Goodman-Strauss & Eugene Sargent; "Knotted Cube" with its designer Bjarne Jespersen.

n**ages on front cover:** Richard Guy & Steve Butler at G4G11; Ron Graham; 'Mindplay For Sir Roger' by Teja Krašek; Elwyn Berlekamp; Paula Apsel; Ernő ubik at G4G13 with Sydney Weaver, Ron Lancaster, David Singmaster, Jeff Varasano & Lucas Garron; Mark Burstein; Moon Duchin; James Randi & Mar ardner; 'Café Wall Optical Illusion' by Victoria Skye; Roxana Kuwer Arsalan at G4G13; John Conway at G4G11 with Yoshiyuki Kotani & Greg Whitehead.