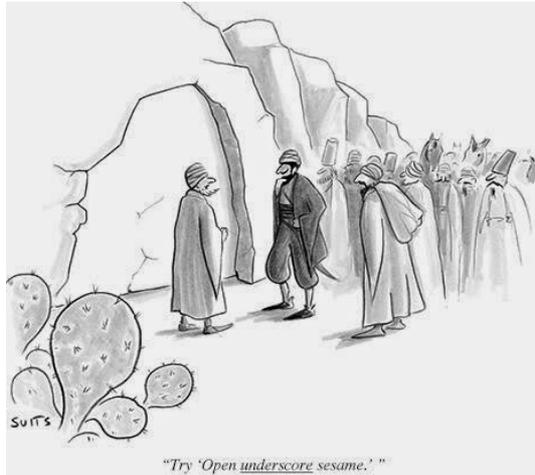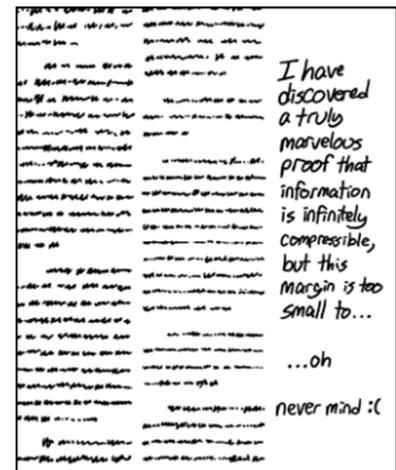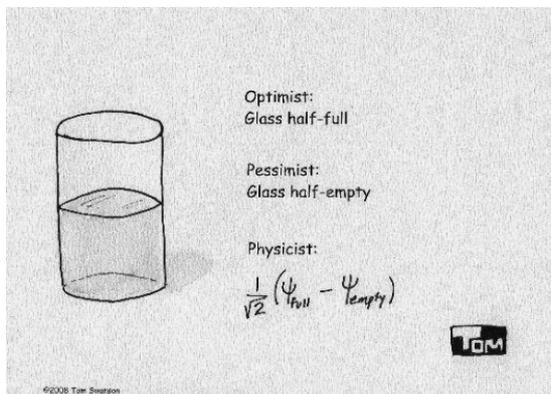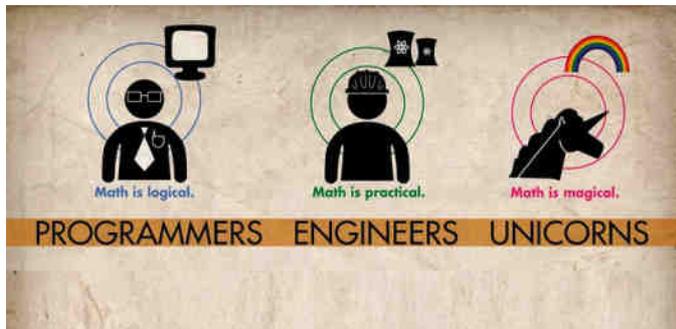$$x^4 - 8228x^3 + 25385534x^2 - 34806653332x + 17895175197705 = 0$$
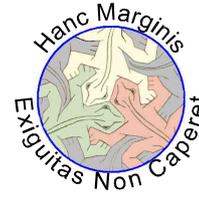

"Try 'Open *underscore* sesame.' "

10 Facts about you

1. You're reading this right now.
2. You're realizing that is a stupid fact.
4. You didn't notice I skipped three.
5. You're checking now.
6. You're smiling.
7. You're still reading this even though its stupid.
9. You didn't realize I skipped eight.
10. You're checking again and smiling about how you fell for it again.
11. You're enjoying this.
12. You didn't realize there's only supposed to be ten facts.

Math is logical.   Math is practical.   Math is magical.
PROGRAMMERS   ENGINEERS   UNICORNS

Optimist:
Glass half-full

Pessimist:
Glass half-empty

Physicist:

$$\frac{1}{\sqrt{2}}\left(\Psi_{full} - \Psi_{empty}\right)$$

I have discovered a truly marvelous proof that information is infinitely compressible, but this margin is too small to...

...oh

never mind :(

January

1	**1**	**T**	(1803) Guglielmo Libri Carucci dalla Sommaja	RM132
			(1878) Agner Krarup Erlang	
			(1894) Satyendranath Bose	RM168
			(1912) Boris Gnedenko	
	2	**F**	(1822) Rudolf Julius Emmanuel Clausius	
			(1905) Lev Genrichovich Shnirelman	
			(1938) Anatoly Samoilenko	
	3	**S**	(1917) Yuri Alexeievich Mitropolsky	
	4	**S**	(1643) Isaac Newton	RM071
2	**5**	**M**	(1723) Nicole-Reine Etable de Labrière Lepaute	
			(1838) Marie Ennemond Camille Jordan	
			(1871) Federigo Enriques	RM084
			(1871) Gino Fano	
	6	**T**	(1807) Jozeph Mitza Petzval	
			(1841) Rudolf Sturm	
	7	**W**	(1871) Felix Edouard Justin Emile Borel	
			(1907) Raymond Edward Alan Christopher Paley	
	8	**T**	(1888) Richard Courant	RM156
			(1924) Paul Moritz Cohn	
			(1942) Stephen William Hawking	
	9	**F**	(1864) Vladimir Adreievich Steklov	
			(1915) Mollie Orshansky	
	10	**S**	(1875) Issai Schur	
			(1905) Ruth Moufang	
	11	**S**	(1545) Guidobaldo del Monte	RM120
			(1707) Vincenzo Riccati	
			(1734) Achille Pierre Dionis du Sejour	
3	**12**	**M**	(1906) Kurt August Hirsch	
			(1915) Herbert Ellis Robbins	RM156
	13	**T**	(1864) Wilhelm Karl Werner Otto Fritz Franz Wien	
			(1876) Luther Pfahler Eisenhart	
			(1876) Erhard Schmidt	
			(1902) Karl Menger	
	14	**W**	(1902) Alfred Tarski	RM096
	15	**T**	(1704) Johann Castillon	
			(1717) Mattew Stewart	
			(1850) Sofia Vasilievna Kovalevskaja	RM144
	16	**F**	(1801) Thomas Klausen	
	17	**S**	(1647) Catherina Elisabetha Koopman Hevelius	
			(1847) Nikolay Egorovich Zukowsky	
			(1858) Gabriel Koenigs	
	18	**S**	(1856) Luigi Bianchi	
			(1880) Paul Ehrenfest	
4	**19**	**M**	(1813) Rudolf Friedrich Alfred Clebsch	
			(1879) Guido Fubini	
			(1908) Aleksandr Gennadievich Kurosh	
	20	**T**	(1775) André Marie Ampère	
			(1895) Gabor Szegő	
			(1904) Renato Caccioppoli	RM072
	21	**W**	(1846) Pieter Hendrik Schoute	
			(1915) Yuri Vladimirovich Linnik	
	22	**T**	(1592) Pierre Gassendi	
			(1886) John William Navin Sullivan	
			(1908) Lev Davidovich Landau	RM063
	23	**F**	(1840) Ernst Abbe	
			(1862) David Hilbert	RM060
	24	**S**	(1891) Abram Samoilovitch Besicovitch	
			(1914) Vladimir Petrovich Potapov	
	25	**S**	(1627) Robert Boyle	
			(1736) Joseph-Louis Lagrange	RM048
			(1843) Karl Hermann Amandus Schwarz	
5	**26**	**M**	(1799) Benoît Paul Émile Clapeyron	
			(1862) Eliakim Hastings Moore	
	27	**T**	(1832) Charles Lutwidge Dodgson	RM108
	28	**W**	(1701) Charles Marie de La Condamine	
			(1888) Louis Joel Mordell	
			(1892) Carlo Emilio Bonferroni	
	29	**T**	(1817) William Ferrel	
			(1888) Sidney Chapman	
	30	**F**	(1619) Michelangelo Ricci	
	31	**S**	(1715) Giovanni Francesco Fagnano dei Toschi	
			(1841) Samuel Loyd	
			(1896) Sofia Alexandrovna Janowskaja	
			(1945) Persi Warren Diaconis	RM180
			(1900) John Charles Burkill	
			(1522) Lodovico Ferrari	

Putnam 2000, A1

Let A be a positive real number. What are the possible values of $\sum_{i=0}^{\infty} x_i^2$, given that x_0, x_1, … are positive numbers for which $\sum_{i=0}^{\infty} x_i = A$?

English Jokes that only intellectuals understand

It's hard to explain puns to kleptomaniacs because they always take things, *literally*.

Headlines from a Mathematical World

After Switch in Standardized Tests, Scores Drop.

Mathematical World: After Switch in Standardized Tests, Scores No Longer Directly Comparable.

Alice laughed: "There's no use trying," she said; "one can't believe impossible things."

"I daresay you haven't had much practice," said the Queen. "When I was younger, I always did it for half an hour a day. Why, sometimes I've believed as many as six impossible things before breakfast.".

Charles Lutwidge Dodgson

If you want to inspire confidence, give plenty of statistics. It does not matter that they should be accurate, or even intelligible, as long as there is enough of them.

Charles Lutwidge Dodgson

A formal manipulator in mathematics often experiences the discomforting feeling that his pencil surpasses him in intelligence.

Howard W. Eves

One can measure the importance of a scientific work by the number of earlier publications rendered superfluous by it.

David Hilbert

Depriving a mathematical of the chance to making demonstrations ad absurdum would be equal to tie the hands of a boxer behind his back.
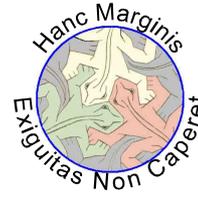
David Hilbert

Actually mathematics require much imagination: it is impossible to be a mathematician without being a poet in soul.

Sofia Vasilievna Kovalevskaja

[said about the chemist Lavoisier:] It took the mob only a moment to remove his head; a century will not suffice to reproduce it.

Joseph-Louis Lagrange

	1	S	(1900) John Charles Burkill	
6	2	M	(1522) Lodovico Ferrari	
			(1893) Cornelius Lanczos	
			(1897) Gertrude Blanch	
	3	T	(1893) Gaston Maurice Julia	RM073
	4	W	(1905) Eric Cristopher Zeeman	
	5	T	(1757) Jean Marie Constant Duhamel	
	6	F	(1465) Scipione del Ferro	RM064
			(1612) Antoine Arnauld	
			(1695) Nicolaus (II) Bernoulli	RM093
	7	S	(1877) Godfried Harold Hardy	RM049
			(1883) Eric Temple Bell	
	8	S	(1700) Daniel Bernoulli	RM093
			(1875) Francis Ysidro Edgeworth	
			(1928) Ennio de Giorgi	RM133
7	9	M	(1775) Farkas Wolfgang Bolyai	
			(1907) Harold Scott Macdonald Coxeter	RM097
	10	T	(1747) Aida Yasuaki	RM121
			(1932) Vivienne Malone-Mayes	
	11	W	(1657) Bernard Le Bovier de Fontenelle	
			(1800) William Henry Fox Talbot	
			(1839) Josiah Willard Gibbs	
			(1915) Richard Wesley Hamming	
	12	T	(1914) Hanna Caemmerer Neumann	
			(1921) Kathleen Rita Mcnulty Mauchly Antonelli	
	13	F	(1805) Johann Peter Gustav Lejeune Dirichlet	RM145
	14	S	(1468) Johann Werner	
			(1849) Hermann Hankel	
			(1877) Edmund Georg Hermann Landau	RM063
			(1896) Edward Artur Milne	
	15	S	(1564) Galileo Galilei	RM085
			(1850) Sophie Willock Bryant	
			(1861) Alfred North Whitehead	
			(1946) Douglas Hofstadter	
8	16	M	(1822) Francis Galton	
			(1853) Gregorio Ricci-Curbastro	
			(1903) Beniamino Segre	
	17	T	(1890) Sir Ronald Aylmer Fisher	
			(1891) Adolf Abraham Halevi Fraenkel	
			(1905) Rózsa Péter	
	18	W	(1404) Leon Battista Alberti	RM157
			(1919) Clifford Truesdell	
	19	T	(1473) Nicolaus Copernicus	RM181
	20	F	(1844) Ludwig Boltzmann	RM061
	21	S	(1591) Girard Desargues	
			(1915) Evgeny Michailovich Lifshitz	
	22	S	(1857) Heinrich Rudolf Hertz	
			(1903) Frank Plumpton Ramsey	
9	23	M	(1583) Jean-Baptiste Morin	
			(1922) Anneli Cahn Lax	
			(1951) Shigefumi Mori	
			(1561) Henry Briggs	RM169
	24	T	(1871) Felix Bernstein	
	25	W	(1827) Henry Watson	
	26	T	(1786) Dominique Francois Jean Arago	
	27	F	(1881) Luitzen Egbertus Jan Brouwer	
	28	S	(1735) Alexandre Theophile Vandermonde	
	29		(1860) Herman Hollerith	RM109

Rudi Mathematici

February

Putnam 2000, A2

Prove that there exist infinitely many integers n such that n, $n + 1$, $n + 2$ are each the sum of the squares of two integers.

∽�⌿

English Jokes that only intellectuals understand

Three logicians walk into a bar. The bartender ask: "Do all of you want a drink?"

The first logician says: "I don't know"

The second logician says: "I don't know"

The third logician says: "Yes!"

∽⌿

Headlines from a Mathematical World

Controversial Program Would Cost $50 Million in Taxpayer Money.

Mathematical World: Controversial Program Would Cost 0.0001% of Taxpayer Money.

∽⌿

The Handmaiden of the Sciences. [Book by that title.]
Eric Temple Bell

The cowboys have a way of trussing up a steer or a pugnacious bronco which fixes the brute so that it can neither move nor think. This is the hog-tie, and it is what Euclid did to geometry.
Eric Temple Bell

Hofstadter's Law: It always takes longer than you expect, even when you take into account Hofstadter's Law.

Douglas Hofstadter

[Asked for a testimony to the effect that Emmy Noether was a great woman mathematician, he said:]

I can testify that she is a great mathematician, but that she is a woman, I cannot swear.
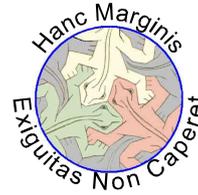Edmund Georg Hermann Landau

This article gives wrong solutions to trivial problems. The main mistake, however, is not new.
Clifford Truesdell

Mathematics as a science, commenced when first someone, probably a Greek, proved propositions about "any" things or about "some" things, without specifications of definite particular things.
Alfred North Whitehead

	1	S	(1611) John Pell
			(1879) Robert Daniel Carmichael
10	2	M	(1836) Julius Weingarten
	3	T	(1838) George William Hill
			(1845) Georg Cantor RM062
			(1916) Paul Richard Halmos
	4	W	(1822) Jules Antoine Lissajous
	5	T	(1512) Gerardus Mercator
			(1759) Benjamin Gompertz
			(1817) Angelo Genocchi
			(1885) Pauline Sperry
			(1915) Laurent Schwartz
			(1931) Vera Pless
	6	F	(1866) Ettore Bortolotti
	7	S	(1792) William Herschel RM146
			(1824) Delfino Codazzi
			(1922) Olga Alexandrovna Ladyzhenskaya
	8	S	(1851) George Chrystal
11	9	M	(1818) Ferdinand Joachimsthal
			(1900) Howard Hathaway Aiken
	10	T	(1864) William Fogg Osgood
			(1872) Mary Ann Elizabeth Stephansen
	11	W	(1811) Urbain Jean Joseph Le Verrier
			(1853) Salvatore Pincherle
			(1870) Louis Bachelier RM158
	12	T	(1685) George Berkeley
			(1824) Gustav Robert Kirchhoff
			(1859) Ernesto Cesaro
	13	F	(1861) Jules Joseph Drach
			(1957) Rudy D'Alembert
	14	S	(1864) Jozef Kurschak
			(1879) Albert Einstein RM074
			(1904) Lyudmila Vsevolodovna Keldysh
	15	S	(1860) Walter Frank Raphael Weldon
			(1868) Grace Chisolm Young
12	16	M	(1750) Caroline Herschel RM146
			(1789) Georg Simon Ohm
			(1846) Magnus Gosta Mittag-Leffler
	17	T	(1876) Ernest Benjamin Esclangon
			(1897) Charles Fox
	18	W	(1640) Philippe de La Hire
			(1690) Christian Goldbach RM122
			(1796) Jacob Steiner
			(1870) Agnes Sime Baxter
	19	T	(1862) Adolf Kneser
			(1910) Jacob Wolfowitz
	20	F	(1840) Franz Mertens
			(1884) Philip Franck
			(1938) Sergi Petrovich Novikov
	21	S	(1768) Jean Baptiste Joseph Fourier
			(1884) George David Birkhoff
	22	S	(1891) Lorna Mary Swain
			(1917) Irving Kaplansky
			(1944) Margaret Hilary Ashworth Millington
13	23	M	(1754) Georg Freiherr von Vega
			(1882) Emmy Amalie Noether RM050
			(1897) John Lighton Synge
	24	T	(1809) Joseph Liouville
			(1948) Sun-Yung (Alice) Chang
			(1966) Gigliola Staffilani RM142
	25	W	(1538) Christopher Clausius
	26	T	(1848) Konstantin Andreev
			(1913) Paul Erdős RM110
	27	F	(1857) Karl Pearson
	28	S	(1749) Pierre-Simon de Laplace
			(1928) Alexander Grothendieck RM086
	29	S	(1825) Francesco Faà Di Bruno RM170
			(1873) Tullio Levi-Civita RM098
			(1896) Wilhelm Ackerman
14	30	M	(1892) Stefan Banach RM134
			(1921) Alfréd Rényi
	31	T	(1596) René Descartes

Rudi Mathematici

March

Putnam 2000, A3

The octagon $P_1 P_2 P_3 P_4 P_5 P_6 P_7 P_8$ is inscribed in a circle, with the vertices around the circumference in the given order. Given that the polygon $P_1 P_3 P_5 P_7$ is a square of area 5, and the polygon $P_2 P_4 P_6 P_8$ is a rectangle of area 4, find the maximum possible area of the octagon.

English Jokes that only intellectuals understand

Einstein, Newton and Pascal are playing hide and seek. It's Einstein turn to count so he covers his eyes and start counting. Pascal runs off and hides. Newton draws a one meter by one meter square in front of Einstein and stands in the middle of it. When Einstein uncovers his eyes, he sees Newton immediately and exclaims: Newton! I found you! You're hit!"

Newton smiles and says: "You didn't find me. You found a Newton over a square meter. You found Pascal".

Headlines from a Mathematical World

Poll Finds 2016 Candidates Neck and Neck.

Mathematically Literate World: Poll Finds 2016 Predictions Futile and Absurd.

Programming today is a race between software engineers striving to build bigger and better idiot-proof programs, and the Universe trying to produce bigger and better idiots. So far, the Universe is winning.

Douglas Adams

Nothing is easier than to assign Names, Signs, or Expressions to these Fluxions, and it is not difficult to compute and operate by means of such Signs. But it will be found much more difficult, to omit the Signs and yet retain in our Minds the things, which we suppose to be signified by them. To consider the Exponents, whether Geometrical, or Algebraical, or Fluxionary, is no difficult Matter. But to form a precise Idea of a third Velocity for instance, in itself and by itself, Hoc opus, hic labor. (…) To me it seems evident, that Measures and Signs are absolutely necessary, in order to conceive or reason about Velocities; and that, consequently, when we think to conceive the Velocities, simply and in themselves, we are deluded by vain Abstractions.

George Berkeley

[about him:] *Tame at home and dominant among colleagues, joyful in mathematics and deadly serious in quarrels among mathematicians, he was the closest thing to a reincarnation of Alcibiades that the nineteenth-century Germany could produce not only in its enthusiastic energy in daring to extreme, but also as fierce fighting when he was cornered – Alcibiades by Phrygians, Cantor by ideas.*
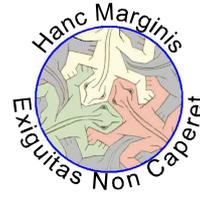
Georg Cantor

Omnia apud me mathematica fiunt. [With me everything turns into mathematics.]

René Descartes

Imagination is more important than knowledge.

Albert Einstein

	1	W	(1640) Georg Mohr	
			(1776) Marie-Sophie Germain	
			(1895) Alexander Craig Aitken	
	2	T	(1878) Edward Kasner	
			(1934) Paul Joseph Cohen	
	3	F	(1835) John Howard Van Amringe	
			(1892) Hans Rademacher	
			(1900) Albert Edward Ingham	
			(1909) Stanislaw Marcin Ulam	RM171
			(1971) Alice Riddle	
	4	S	(1809) Benjamin Peirce	RM123
			(1842) Francois Edouard Anatole Lucas	
			(1949) Shing-Tung Yau	
	5	S	(1588) Thomas Hobbes	
			(1607) Honoré Fabri	
			(1622) Vincenzo Viviani	
			(1869) Sergi Alexeievich Chaplygin	
15	6	M	(1801) William Hallowes Miller	
	7	T	(1768) François-Joseph Français	
	8	W	(1903) Marshall Harvey Stone	
	9	T	(1791) George Peacock	
			(1816) Charles Eugene Delaunay	
			(1894) Cypra Cecilia Krieger Dunaij	
			(1919) John Presper Heckert	
	10	F	(1857) Henry Ernest Dudeney	RM183
	11	S	(1953) Andrew John Wiles	
	12	S	(1794) Germinal Pierre Dandelin	
			(1852) Carl Louis Ferdinand von Lindemann	
			(1903) Jan Tinbergen	
16	13	M	(1728) Paolo Frisi	
			(1813) Duncan Farquharson Gregory	
			(1869) Ada Isabel Maddison	
			(1879) Francesco Severi	
	14	T	(1629) Christiaan Huygens	RM135
	15	W	(1452) Leonardo da Vinci	
			(1548) Pietro Antonio Cataldi	
			(1707) Leonhard Euler	RM051
			(1809) Herman Gunther Grassmann	
	16	T	(1682) John Hadley	
			(1823) Ferdinand Gotthold Max Eisenstein	
	17	F	(1798) Etienne Bobillier	
			(1853) Arthur Moritz Schonflies	
			(1863) Augustus Edward Hough Love	
	18	S	(1791) Ottaviano Fabrizio Mossotti	RM150
			(1907) Lars Valerian Ahlfors	
			(1918) Hsien Chung Wang	
			(1949) Charles Louis Fefferman	
	19	S	(1880) Evgeny Evgenievich Slutsky	
			(1883) Richard von Mises	
			(1901) Kiyoshi Oka	
			(1905) Charles Ehresmann	
17	20	M	(1839) Francesco Siacci	
	21	T	(1652) Michel Rolle	
			(1774) Jean Baptiste Biot	
			(1875) Teiji Takagi	
	22	W	(1811) Otto Ludwig Hesse	
			(1887) Harald August Bohr	RM063
			(1935) Bhama Srinivasan	
			(1939) Sir Michael Francis Atiyah	
	23	T	(1858) Max Karl Ernst Ludwig Planck	
			(1910) Sheila Scott Macintyre	
	24	F	(1863) Giovanni Vailati	
			(1899) Oscar Zariski	RM099
	25	S	(1849) Felix Christian Klein	
			(1900) Wolfgang Pauli	
			(1903) Andrei Nicolayevich Kolmogorov	RM159
	26	S	(1889) Ludwig Josef Johan Wittgenstein	
18	27	M	(1755) Marc-Antoine Parseval des Chenes	
			(1932) Gian-Carlo Rota	
	28	T	(1906) Kurt Godel	RM087
	29	W	(1854) Jules Henri Poincarè	RM075
	30	T	(1777) Johann Carl Friedrich Gauss	RM147
			(1916) Claude Elwood Shannon	RM111

Rudi Mathematici

April

Putnam 2000, A4

Show that the improper integral

$$\lim_{B \to \infty} \int_0^B \sin(x)\sin(x^2)\,dx$$

converges.

English Jokes that only intellectuals understand

A Roman soldier walks in a bar asking for a Martinus.

"You mean Martini?" The bartender asks.

The Roman replies: "If I wanted a double, I would have asked for it!"

After some time, seeing a friend in the bar, the legionnaire holds up two fingers and says: "Five beers, please".

Headlines from a Mathematical World

One Dead in Shark Attack; See Tips for Shark Safety Inside.

Mathematically Literate World: One Dead in Tragic, Highly Unlikely Event; See Tips for Something Useful Inside.

There are some mysteries that the human mind will never penetrate. To be convinced we should not do anything else but throw a look at the tables of primes. We realize that there reigns no order or law. [1751]

Leonhard Euler

God does arithmetic.

Johann Carl Friedrich Gauss

Either mathematics is too big for the human mind or the human mind is more than a machine.

Kurt Godel

Geometry (which is the only science that it hath pleased God to bestow on mankind)...

Thomas Hobbes

Mathematics in general is fundamentally the science of self-evident things.

Felix Christian Klein

No mathematical research can be called real science if it can't be proven mathematically.
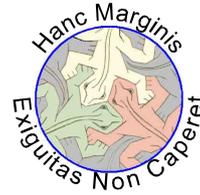
Leonardo Da Vinci

[Arithmetic] can only be considered a science of suggestions, to which the principles and operations of algebra adapt, but by which are neither limited or determined.

George Peacock

There can never be surprises in logic.

Ludwig Josef Johan Wittgenstein

May

	1	F	(1825) Johann Jacob Balmer	RM122
			(1908) Morris Kline	
			(1977) Maryam Mirzakhani	RM189
	2	S	(1860) D'Arcy Wentworth Thompson	RM138
			(1905) Kazimierz Zarankiewitz	
	3	S	(1842) Otto Stolz	
			(1860) Vito Volterra	RM136
			(1892) George Paget Thomson	RM161
19	4	M	(1845) William Kingdon Clifford	
	5	T	(1833) Lazarus Emmanuel Fuchs	
			(1883) Anna Johnson Pell Wheeler	
			(1897) Francesco Giacomo Tricomi	
			(1923) Cathleen Synge Morawetz	
	6	W	(1872) Willem de Sitter	
			(1906) André Weil	RM088
	7	T	(1854) Giuseppe Veronese	
			(1881) Ebenezer Cunningham	
			(1896) Pavel Sergieievich Alexandrov	
			(1926) Alexis Claude Clairaut	
	8	F	(1859) Johan Ludwig William Valdemar Jensen	
			(1905) Winifred Lydia Caunden Sargent	
	9	S	(1746) Gaspard Monge	
			(1876) Gilbert Ames Bliss	
			(1965) Karen Ellen Smith	
	10	S	(1788) Augustin Jean Fresnel	
			(1847) William Karl Joseph Killing	
			(1904) Edward James Mcshane	
			(1958) Piotr Rezierovich Silverbrahms	
20	11	M	(1902) Edna Ernestine Kramer Lassar	
			(1918) Richard Phillips Feynman	RM076
	12	T	(1820) Florence Nightingale	RM104
			(1845) Pierre René Jean Baptiste Henry Brocard	
			(1902) Frank Yates	
	13	W	(1750) Lorenzo Mascheroni	
			(1899) Pelageia Yakovlevna Polubarinova Kochina	
	14	T	(1832) Rudolf Otto Sigismund Lipschitz	
			(1863) John Charles Fields	RM100
	15	F	(1939) Brian Hartley	
			(1964) Sijue Wu	
	16	S	(1718) Maria Gaetana Agnesi	RM112
			(1821) Pafnuti Lvovi Chebyshev	
			(1911) John (Jack) Todd	RM139
	17	S	(1940) Alan Kay	
21	18	M	(1850) Oliver Heaviside	RM160
			(1892) Bertrand Arthur William Russell	RM052
	19	T	(1865) Flora Philip	
			(1919) Georgii Dimitirievich Suvorov	
	20	W	(1861) Henry Seely White	
	21	T	(1471) Albrecht Dürer	RM124
			(1792) Gustave Gaspard de Coriolis	
	22	F	(1865) Alfred Cardew Dixon	
	23	S	(1914) Lipa Bers	RM148
	24	S	(1544) William Gilbert	
22	25	M	(1838) Karl Mikailovich Peterson	
	26	T	(1667) Abraham de Moivre	
			(1896) Yuri Dimitrievich Sokolov	
	27	W	(1862) John Edward Campbell	
	28	T	(1676) Jacopo Francesco Riccati	
			(1710) Johann (II) Bernoulli	RM093
	29	F	(1882) Harry Bateman	
	30	S	(1814) Eugene Charles Catalan	RM184
	31	S	(1926) John Kemeny	

Rudi Mathematici

Putnam 2000, A5

Three distinct points with integer coordinates lie in the plane on a circle of radius $r > 0$. Show that two of these points are separated by a distance of at least $r^{1/3}$.

English Jokes that only intellectuals understand

Entropy isn't what it used to be.

Headlines from a Mathematical World

Market Share for Electric Cars Triples.

Mathematically Literate World: Market Share for Electric Cars Rises to 0.4%.

A great deal more is known than has been proved.
Richard Phillips Feynman

When using a mathematical model, we must pay particular attention to the uncertainties of the model.
Richard Phillips Feynman

Universities hire professors the way some men choose wives – they want the ones the others will admire.
Morris Kline

How dare we speak of the laws of chance? Is this not the antithesis of all laws?
Bertrand Arthur William Russell

Cells and tissues, bones and shells, leaves and flowers, are simply various portions of matter, and it is in obedience to the laws of physics that their particles have been moved, modelled and standardized. No exceptions to the rule that God always geometrizes. Their shape problems are primarily mathematical problems, growth problems are essentially physical problems, and the morphologist is ipso facto a student of the physical sciences.

D'Arcy Wentworth Thompson

Nothing is more fruitful, all mathematicians know, than those vague analogies, those dark reflections that lead from one theory to another, those furtive caresses, those inexplicable discrepancies: nothing gives a greater pleasure to the researcher.

André Weil

23	1	M	(1796) Sadi Leonard Nicolas Carnot	
			(1851) Edward Bailey Elliott	
			(1899) Edward Charles Titchmarsh	
	2	T	(1895) Tibor Radó	
	3	W	(1659) David Gregory	
	4	T	(1809) John Henry Pratt	
			(1966) Svetlana Yakovlevna Jitomirskaya	
	5	F	(1814) Pierre Laurent Wantzel	RM065
			(1819) John Couch Adams	
			(1883) John Maynard Keynes	
	6	S	(1436) Johann Muller Regiomontanus	RM185
			(1857) Aleksandr Michailovitch Lyapunov	RM077
			(1906) Max Zorn	
	7	S	(1863) Edward Burr Van Vleck	
24	8	M	(1625) Giovanni Domenico Cassini	
			(1858) Charlotte Angas Scott	
			(1860) Alicia Boole Stott	
			(1896) Eleanor Pairman	
			(1923) Gloria Olive	
			(1924) Samuel Karlin	
	9	T	(1885) John Edensor Littlewood	RM049
	10	W	(940) Mohammad Abu'L Wafa Al-Buzjani	
			(1887) Vladimir Ivanovich Smirnov	RM101
	11	T	(1881) Hilda Phoebe Hudson	
			(1937) David Bryant Mumford	
	12	F	(1888) Zygmunt Janyszewski	
			(1937) Vladimir Igorevich Arnold	
	13	S	(1831) James Clerk Maxwell	RM113
			(1872) Jessie Chrystal Macmillan	
			(1876) William Sealey Gosset (Student)	
			(1928) John Forbes Nash	RM149
	14	S	(1736) Charles Augustin de Coulomb	
			(1856) Andrei Andreyevich Markov	RM125
			(1903) Alonzo Church	
25	15	M	(1640) Bernard Lamy	
			(1894) Nikolai Gregorievich Chebotaryov	
	16	T	(1915) John Wilder Tukey	
	17	W	(1898) Maurits Cornelius Escher	RM097
	18	T	(1858) Andrew Russell Forsyth	
			(1884) Charles Ernest Weatherburn	
			(1884) Frieda Nugel	
			(1913) Paul Teichmueller	RM148
			(1915) Alice Turner Schafer	
	19	F	(1623) Blaise Pascal	RM053
			(1902) Wallace John Eckert	
	20	S	(1873) Alfred Loewy	
			(1917) Helena Rasiowa	
	21	S	(1781) Simeon Denis Poisson	
			(1828) Giuseppe Bruno	
			(1870) Maria Skłodowska Curie	RM182
26	22	M	(1822) Mario Pieri	
			(1864) Hermann Minkowsky	
			(1910) Konrad Zuse	
			(1932) Mary Wynne Warner	
	23	T	(1912) Alan Mathison Turing	RM089
	24	W	(1880) Oswald Veblen	
	25	T	(1908) William Van Orman Quine	
	26	F	(1823) William Thomson, Lord Kelvin	RM161
			(1918) Yudell Leo Luke	
	27	S	(1806) Augustus de Morgan	
	28	S	(1875) Henri Leon Lebesgue	RM173
27	29	M	(1888) Aleksandr Aleksandrovich Friedmann	RM101
			(1979) Artur Avila Cordeiro de Melo	RM189
	30	T	(1791) Felix Savart	
			(1958) Abigail A Thompson	

Rudi Mathematici

June
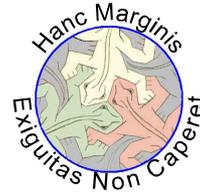
Putnam 2000, A6

Be $f(x)$ a polynomial with integer coefficients. Define a sequence of integers $a_0, a_1, \ldots$ such that $a_0 = 0$ and $a_{n+1} = f(a_n)$. Prove that if there exists a positive integer m for which $a_m = 0$, then either $a_1 = 0$ or $a_2 = 0$.

English Jokes that only intellectuals understand

Werner Heisenberg, Kurt Gödel and Noam Chomsky walk into a bar. Heisenberg turns to the other two and says: "Clearly this is a joke, but how we figure out if it's funny or not?".

Gödel replies: "We don't know that because we're inside the joke". Chomsky says: "Of course it's funny. You're just telling it wrong".

Headlines from a Mathematical World

Still No Scientific Consensus on Global Warming.

Mathematically Literate World: Still 90% Scientific Consensus on Global Warming.

The motto that I would adopt against a path designed to stop the progress of the discoveries would be "remember square root of –1"

Augustus De Morgan

A distinctive feature of mathematics is that it does not use all those long and difficult names like the other sciences. Indeed, it is more conservative than other sciences, as it clings tenaciously to the old terms.

E. Kasner, J.R. Newman

Perhaps the greatest paradox is that there are paradoxes in mathematics.

E. Kasner, J.R. Newman

It has been pointed out already that no knowledge of probabilities, less in degree than certainty, helps us to know what conclusions are true, and that there is no direct relation between the truth of a proposition and its probability. Probability begins and ends with probability.

John Maynard Keynes

In passing, I firmly believe that research should be offset by a certain amount of teaching, if only as a change from the agony of research. The trouble, however, I freely admit, is that in practice you get either no teaching, or else far too much.

John Edensor Littlewood

I read in the proof sheets of Hardy on Ramanujan: "As someone said, each of the positive integers was one of his personal friends." My reaction was, "I wonder who said that; I wish I had." In the next proof-sheets I read (what now stands), "It was Littlewood who said..."

John Edensor Littlewood

July

	1	W	(1643) Gottfried Wilhelm von Leibniz	RM054
			(1788) Jean Victor Poncelet	
			(1906) Jean Alexandre Eugène Dieudonné	
	2	T	(1820) William John Racquorn Rankine	
			(1852) William Burnside	
			(1925) Olga Arsen'evna Oleinik	
	3	F	(1807) Ernest Jean Philippe Fauque de Jonquiere	RM162
			(1897) Jesse Douglas	
	4	S	(1906) Daniel Edwin Rutherford	
			(1917) Michail Samoilovich Livsic	
	5	S	(1936) James Mirrlees	
28	6	M	(1849) Alfred Bray Kempe	
	7	T	(1816) Johann Rudolf Wolf	
			(1906) William Feller	
			(1922) Vladimir Aleksandrovich Marchenko	
	8	W	(1760) Christian Kramp	
			(1904) Henri Paul Cartan	RM126
	9	T	(1845) George Howard Darwin	RM138
			(1931) Valentina Mikhailovna Borok	
	10	F	(1856) Nikola Tesla	RM174
			(1862) Roger Cotes	
			(1868) Oliver Dimon Kellogg	
	11	S	(1857) Sir Joseph Larmor	
			(1888) Jacob David Tamarkin	RM101
			(1890) Giacomo Albanese	
	12	S	(1875) Ernest Sigismund Fischer	
			(1895) Richard Buckminster Fuller	RM066
			(1935) Nicolas Bourbaki	RM126
29	13	M	(1527) John Dee	
			(1741) Karl Friedrich Hindenburg	
	14	T	(1671) Jacques D'Allonville	
			(1793) George Green	RM078
	15	W	(1865) Wilhelm Wirtinger	
			(1898) Mary Taylor Slow	
			(1906) Adolph Andrej Pavlovich Yushkevich	
	16	T	(1678) Jakob Hermann	
			(1903) Irmgard Flugge-Lotz	
	17	F	(1831) Victor Mayer Amedeè Mannheim	
			(1837) Wilhelm Lexis	
			(1944) Krystyna Maria Trybulec Kuperberg	
	18	S	(1013) Hermann von Reichenau	
			(1635) Robert Hooke	RM114
			(1853) Hendrik Antoon Lorentz	RM161
	19	S	(1768) Francois Joseph Servois	
30	20	M	(1876) Otto Blumenthal	
			(1947) Gerd Binnig	
	21	T	(1620) Jean Picard	
			(1848) Emil Weyr	
			(1849) Robert Simpson Woodward	
			(1861) Herbert Ellsworth Slaught	
	22	W	(1784) Friedrich Wilhelm Bessel	
	23	T	(1775) Etienne Louis Malus	
			(1854) Ivan Slezynsky	
	24	F	(1851) Friedrich Herman Schottky	
			(1871) Paul Epstein	
			(1923) Christine Mary Hamill	
	25	S	(1808) Johann Benedict Listing	
	26	S	(1903) Kurt Mahler	
31	27	M	(1667) Johann Bernoulli	RM093
			(1801) George Biddel Airy	
			(1848) Lorand Baron von Eötvös	
			(1871) Ernst Friedrich Ferdinand Zermelo	RM090
	28	T	(1954) Gerd Faltings	
	29	W	(1898) Isidor Isaac Rabi	
	30	T	(1889) Vladimir Kosma Zworkyn	
	31	F	(1704) Gabriel Cramer	RM186
			(1712) Johann Samuel Koenig	
			(1926) Hilary Putnam	

Putnam 2000, B1

Let a_j, b_j, c_j be integers for $1 \leq j \leq N$. Assume for each j, at least one of a_j, b_j, c_j is odd. Show that there exists integers r, s, t such that $r\,a_j + s\,b_j + t\,c_j$ is odd for at least $4N/7$ values of j.

English Jokes that only intellectuals understand

Pavlov is sitting at a pub enjoying a pint, the phone rings and he jumps out shouting: "Oh shit, I forgot to feed the dog!".

Headlines from a Mathematical World

Economist: "Eliminate Minimum Wage to Create Jobs, Improve Economy".

Mathematically Literate World: Economist: "Eliminate Minimum Wage, then Pray Our Model Has Some Basis in Reality".

Historically speaking, it is clearly false that mathematics is free of contradictions. The non-contradiction seems more an objective to be achieved than a quality given by God once and for all. There is no well-defined demarcation between the contradictions that occur daily in the work of any mathematician – novice or master they all make mistakes more or less easy to find – and the paradoxes of greatest importance providing bread for the teeth of logics for decades and, in certain cases, for centuries.

Nicolas Bourbaki

We believe in the reality of mathematics, but of course when philosophers attack us with their paradoxes we rush to take shelter behind formalism and say: "Mathematics is just a combination of meaningless symbols" and pull out the chapters 1 and 2 of set theory. When you finally leave us in peace, we return to our mathematics and do as we always have, trying the feeling (that every mathematical experiences) to work with something real. Feeling that is probably an illusion, but very comfortable. This is the attitude of Bourbaki against the fundamentals.

Jean Alexandre Eugène Dieudonné

He who understands Archimedes and Apollonius will admire less the achievements of the foremost men of later times.

Gottfried Wilhelm von Leibniz

The art of discovering the causes of phenomena, or true hypothesis, is like the art of deciphering, in which an ingenious conjecture greatly shortens the road.

Gottfried Wilhelm von Leibniz

Mathematics honours the human spirit.

Gottfried Wilhelm von Leibniz

	1	S	(1861) Ivar Otto Bendixson	
			(1881) Otto Toeplitz	
			(1955) Bernadette Perrin-Riou	
	2	S	(1856) Ferdinand Rudio	
			(1902) Mina Spiegel Rees	
32	3	M	(1914) Mark Kac	RM115
	4	T	(1805) Sir William Rowan Hamilton	RM079
			(1838) John Venn	
	5	W	(1802) Niels Henrik Abel	RM055
			(1941) Alexander Keewatin Dewdney	
	6	T	(1638) Nicolas Malebranche	
			(1741) John Wilson	
	7	F	(1868) Ladislaus Josephowitsch Bortkiewitz	
	8	S	(1902) Paul Adrien Maurice Dirac	RM103
			(1931) Sir Roger Penrose	
			(1974) Manjul Bhargava	RM189
	9	S	(1537) Francesco Barozzi (Franciscus Barocius)	
			(1940) Linda Goldway Keen	
33	10	M	(1602) Gilles Personne de Roberval	
			(1926) Carol Ruth Karp	
	11	T	(1730) Charles Bossut	
			(1842) Enrico D'Ovidio	
	12	W	(1882) Jules Antoine Richard	
			(1887) Erwin Rudolf Josef Alexander Schrödinger	RM103
	13	T	(1625) Erasmus Bartholin	
			(1819) George Gabriel Stokes	
			(1861) Cesare Burali-Forti	RM187
	14	F	(1530) Giovanni Battista Benedetti	
			(1842) Jean Gaston Darboux	
			(1865) Guido Castelnuovo	
			(1866) Charles Gustave Nicolas de La Vallée-Poussin	
	15	S	(1863) Aleksei Nikolaevich Krylov	
			(1892) Louis Pierre Victor Duc de Broglie	RM175
			(1901) Piotr Sergeevich Novikov	
	16	S	(1773) Louis-Benjamin Francoeur	
			(1821) Arthur Cayley	
34	17	M	(1601) Pierre de Fermat	RM091
	18	T	(1685) Brook Taylor	
	19	W	(1646) John Flamsteed	
			(1739) Georg Simon Klugel	
	20	T	(1710) Thomas Simpson	
			(1863) Corrado Segre	
			(1882) Wacław Sierpiński	
	21	F	(1789) Augustin Louis Cauchy	RM127
	22	S	(1647) Denis Papin	
	23	S	(1683) Giovanni Poleni	
			(1829) Moritz Benedikt Cantor	
			(1842) Osborne Reynolds	
35	24	M	(1561) Bartholomeo Pitiscus	
			(1942) Karen Keskulla Uhlenbeck	RM163
	25	T	(1561) Philip Van Lansberge	
			(1844) Thomas Muir	
	26	W	(1728) Johann Heinrich Lambert	
			(1875) Giuseppe Vitali	
			(1965) Marcus Peter Francis du Sautoy	
	27	T	(1858) Giuseppe Peano	RM067
	28	F	(1862) Roberto Marcolongo	RM187
			(1796) Irénée Jules Bienaymé	
	29	S	(1904) Leonard Roth	
	30	S	(1703) Giovanni Ludovico Calandrini	RM186
			(1856) Carle David Tolmé Runge	
			(1906) Olga Taussky-Todd	RM139
36	31	M	(1821) Hermann Ludwig Ferdinand von Helmholtz	
			(1885) Herbert Westren Turnbull	

Rudi Mathematici

Hanc Marginis
Exiguitas Non Caperet

August

Putnam 2000, B2

Prove that the expression:

$$\frac{gcd(m,n)}{n}\binom{n}{m}$$

is an integer for all pairs of integers $n \geq m \geq 1$.

English Jokes that only intellectuals understand

Helium walks in the bar and orders a beer, the bartender says: "Sorry, we don't serve Noble Gases here". He doesn't react.

Headlines from a Mathematical World

Illegal Downloaders Would Have Spent $300 *Million to Obtain Same Music Legally.*

Mathematically Literate World: Illegal Downloaders Probably Would Not Have Bothered to Obtain Same Music Legally.

It appears to me that if one wishes to make progress in mathematics, one should study the masters and not the pupils.

Niels Henrik Abel

Mathematics is the tool especially suited for dealing with abstract concepts of any kind and there is no limit to its power in this field.

Paul Adrien Maurice Dirac

A book on the new physics, if it's not a pure description of experimental work, must be essentially mathematical.

Paul Adrien Maurice Dirac

A beautiful idea is much more likely to be right than an ugly idea.
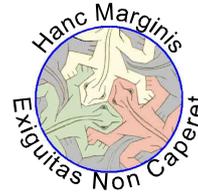
Sir Roger Penrose

The notion of mathematical truth goes beyond the whole concept of formalism. In the mathematical truth there is something absolute and 'divine'.

Sir Roger Penrose

There is nothing that stimulates the creative process of a mathematician as the thought of immortality that gives the fact of having your name associated with a theorem.

Marcus Peter Francis Du Sautoy

	1	T	(1659) Joseph Saurin	
			(1835) William Stanley Jevons	
	2	W	(1878) Mauriche René Frechet	
			(1923) René Thom	RM080
	3	T	(1814) James Joseph Sylvester	RM104
			(1884) Solomon Lefschetz	
			(1908) Lev Semenovich Pontryagin	
	4	F	(1809) Luigi Federico Menabrea	RM150
	5	S	(1667) Giovanni Girolamo Saccheri	RM128
			(1725) Jean Etienne Montucla	
	6	S	(1859) Boris Jakovlevich Bukreev	
			(1863) Dimitri Aleksandrovich Grave	
37	7	M	(1707) George Louis Leclerc Comte de Buffon	
			(1948) Cheryl Elisabeth Praeger	
			(1955) Efim Zelmanov	
	8	T	(1584) Gregorius Saint-Vincent	
			(1588) Marin Mersenne	RM092
	9	W	(1860) Frank Morley	
			(1914) Marjorie Lee Browne	
	10	T	(1839) Charles Sanders Peirce	RM123
	11	F	(1623) Stefano degli Angeli	
			(1798) Franz Ernst Neumann	
			(1877) Sir James Hopwood Jeans	
	12	S	(1891) Antoine André Louis Reynaud	
			(1900) Haskell Brooks Curry	
			(1894) Dorothy Maud Wrinch	
	13	S	(1873) Constantin Carathéodory	
			(1885) Wilhelm Johann Eugen Blaschke	
38	14	M	(1858) Henry Burchard Fine	
			(1891) Ivan Matveevich Vinogradov	
	15	T	(973) Abu Arrayhan Muhammad Ibn Ahmad Al'Biruni	RM164
			(1886) Paul Pierre Levy	
	16	W	(1494) Francisco Maurolico	
			(1736) Johann Nikolaus Tetens	
	17	T	(1743) Marie Jean Antoine Nicolas de Caritat de Condorcet	RM176
			(1826) Georg Friedrich Bernhard Riemann	RM068
	18	F	(1752) Adrien Marie Legendre	RM140
	19	S	(1749) Jean Baptiste Delambre	
	20	S	(1842) Alexander Wilhelm von Brill	
			(1861) Frank Nelson Cole	
39	21	M	(1899) Juliusz Pawel Schauder	
			(1917) Phyllis Nicolson	
	22	T	(1765) Paolo Ruffini	RM116
			(1769) Louis Puissant	
			(1803) Jaques Charles Francois Sturm	
	23	W	(1768) William Wallace	
			(1900) David Van Dantzig	
	24	T	(1501) Girolamo Cardano	RM064
			(1625) Johan de Witt	RM188
			(1801) Michail Vasilevich Ostrogradski	RM056
			(1862) Winifred Edgerton Merrill	
			(1945) Ian Nicholas Stewart	
	25	F	(1819) George Salmon	
			(1888) Stefan Mazurkiewicz	
	26	S	(1688) Willem Jakob 's Gravesande	
			(1854) Percy Alexander Macmahon	
			(1891) Hans Reichenbach	
	27	S	(1855) Paul Émile Appell	
			(1876) Earle Raymond Hedrick	
			(1919) James Hardy Wilkinson	
40	28	M	(1698) Pierre Louis Moreau de Maupertuis	RM152
			(1761) Ferdinand Francois Desirè Budan de Boislaurent	
			(1873) Julian Lowell Coolidge	
	29	T	(1561) Adriaan Van Roomen	
			(1812) Adolph Gopel	
	30	W	(1775) Robert Adrain	
			(1829) Joseph Wolstenholme	
			(1883) Ernst Hellinger	

Rudi Mathematici

September

Putnam 2000, B3

Let $f(t) = \sum_{j=1}^{N} a_j \sin(2\pi jt)$, where each a_i is real and $a_N \neq 0$.

Let N_k denote the number of zeroes (including multiplicities) in $\lfloor 0, 1)$ of $\dfrac{d^k f}{dt^k}$. Prove that:

$$N_0 \leq N_1 \leq N_2 \dots \text{ and } \lim_{k \to \infty} N_k = 2N.$$

English Jokes that only intellectuals understand

Schrödinger's cat walks into a bar. And doesn't.

Headlines from a Mathematical World

Market Rebounds after Assurances from Fed Chair.

Mathematically Literate World: Market Rebounds after Regression to the Mean.

Poincaré's point of view of phase space has proven to be so useful that today it can be found in every field of science - and in fields that are not at all scientific.
Jack Cohen, Terry Pratchett, Ian Stewart

Information is a useful concept, but it is curious that "To be or not to be" contains the same information according to Shannon, and less information according Chaitin, of "xyQGRlfryu & sk0wc_% d". The reason for this disparity is that information is not the same thing as meaning. This is fascinating. What really matters to people is the meaning of a message, not the number of bits, but mathematicians have not been able to quantify the significance. For now.
Jack Cohen, Terry Pratchett, Ian Stewart

The strangest number in the multiverse is not infinite, but one.
Jack Cohen, Terry Pratchett, Ian Stewart

I think the probability theory is the only branch of mathematics in which good authors often get completely wrong results.
Charles Sanders Peirce

Time was when all the parts of the subject were dissevered, when algebra, geometry, and arithmetic either lived apart or kept up cold relations of acquaintance confined to occasional calls upon one another; but that is now at an end; they are drawn together and are constantly becoming more and more intimately related and connected by a thousand fresh ties, and we may confidently look forward to a time when they shall form but one body with one soul.
James Joseph Sylvester

The importance of the "New Mathematics" lies mainly in the fact that it has taught us the difference between the disc and the circle.
René Thom

	1	T	(1671) Luigi Guido Grandi	RM177
			(1898) Bela Kerekjarto'	
			(1912) Kathleen Timpson Ollerenshaw	
	2	F	(1825) John James Walker	
			(1908) Arthur Erdélyi	
	3	S	(1944) Pierre René Deligne	
	4	S	(1759) Louis Francois Antoine Arbogast	
			(1797) Jerome Savary	
41	5	M	(1732) Nevil Maskelyne	
			(1781) Bernhard Placidus Johann Nepomuk Bolzano	RM117
			(1861) Thomas Little Heath	
	6	T	(1552) Matteo Ricci	RM141
			(1831) Julius Wilhelm Richard Dedekind	RM081
			(1908) Sergei Lvovich Sobolev	
	7	W	(1885) Niels Bohr	RM063
	8	T	(1908) Hans Arnold Heilbronn	
	9	F	(1581) Claude Gaspard Bachet de Meziriac	
			(1704) Johann Andrea von Segner	
			(1873) Karl Schwarzschild	RM153
			(1949) Fan Rong K Chung Graham	RM110
	10	S	(1861) Heinrich Friedrich Karl Ludwig Burkhardt	
	11	S	(1675) Samuel Clarke	
			(1777) Barnabè Brisson	
			(1881) Lewis Fry Richardson	
			(1885) Alfred Haar	
			(1910) Cahit Arf	
42	12	M	(1860) Elmer Sperry	
	13	T	(1890) Georg Feigl	
			(1893) Kurt Werner Friedrich Reidemeister	
			(1932) John Griggs Thomson	
	14	W	(1687) Robert Simson	
			(1801) Joseph Antoine Ferdinand Plateau	
			(1868) Alessandro Padoa	
	15	T	(1608) Evangelista Torricelli	RM165
			(1735) Jesse Ramsden	
			(1776) Peter Barlow	
			(1931) Eléna Wexler-Kreindler	
	16	F	(1879) Philip Edward Bertrand Jourdain	
	17	S	(1759) Jacob (II) Bernoulli	RM093
			(1888) Paul Isaac Bernays	
	18	S	(1741) John Wilson	
			(1945) Margaret Dusa Waddington Mcduff	
43	19	M	(1903) Jean Frédéric Auguste Delsarte	
			(1910) Subrahmanyan Chandrasekhar	RM153
	20	T	(1632) Sir Christopher Wren	RM105
			(1863) William Henry Young	
			(1865) Aleksandr Petrovich Kotelnikov	
	21	W	(1677) Nicolaus (I) Bernoulli	RM093
			(1823) Enrico Betti	RM150
			(1855) Giovan Battista Guccia	RM129
			(1893) William Leonard Ferrar	
			(1914) Martin Gardner	RM137
	22	T	(1587) Joachim Jungius	
			(1895) Rolf Herman Nevanlinna	
			(1907) Sarvadaman Chowla	
	23	F	(1865) Piers Bohl	
	24	S	(1804) Wilhelm Eduard Weber	
			(1873) Edmund Taylor Whittaker	
	25	S	(1811) Évariste Galois	RM069
44	26	M	(1849) Ferdinand Georg Frobenius	
			(1857) Charles Max Mason	
			(1911) Shiing-Shen Chern	
	27	T	(1678) Pierre Remond de Montmort	
			(1856) Ernest William Hobson	
	28	W	(1804) Pierre François Verhulst	
	29	T	(1925) Klaus Roth	
	30	F	(1906) Andrej Nikolaevich Tichonov	
			(1946) William Paul Thurston	
	31	S	(1711) Laura Maria Catarina Bassi	RM189
			(1815) Karl Theodor Wilhelm Weierstrass	RM057
			(1935) Ronald Lewis Graham	RM110

Rudi Mathematici

October

Putnam 2000, B4

Let $f(x)$ be a continuous function such that, for all x,
$f(2x^2 - 1) = 2x\, f(x)$. Show that $f(x) = 0$ for $-1 \le x \le 1$.

English Jokes that only intellectuals understand

The programmer's wife tells him: "Run to the store and pick up a loaf of bread. If they have eggs, get a dozen".

The programmer comes home with 12 loaves of bread.

Headlines from a Mathematical World

Rates of Cancer Approach Historic High.

Mathematically Literate World: Rates of Surviving Long Enough to Develop Cancer Approach Historic High.

If God creates a world of particles and waves, dancing in obedience to mathematical and physical laws, who are we to say that he cannot make use of those laws to cover the surface of a small planet with living creatures?

Martin Gardner

The lady said, "If I understand correctly, you're good with numbers." "No, I'm good with math," Randy replied. "Is it not what I said?" "Oh, no! The mathematicians are as far as possible from the real and specific numbers. We like to talk about numbers without actually being exposed to them: for that there are computers".

Neal Stephenson

What a fabulous way to save effort! For me, "134 divided 29" meant a tedious chore, while 134/29 was an object without implied work. Excited I went to my father to explain my great discovery; he told me that of course it was so, that a/b and a:b are simply synonyms. For him it was just a small change in notation.

William Paul Thurston

In things to be seen at once, much variety makes confusion, another vice of beauty. In things that are not seen at once, and have no respect one to another, great variety is commendable, provided this variety transgress not the rules of optics and geometry.

Sir Christopher Wren

Mathematics, among other things, teaches the persistence against the consequences, and rigor in following the path we have chosen arbitrarily.
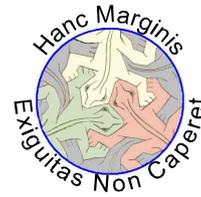
Paul Valéry

Arithmetic is being able to count to twenty without taking off your shoes.

Mickey Mouse

He who can properly define and divide is to be considered a god.

Plato

	1	S	(1535) Giambattista della Porta
45	2	M	(1815) George Boole RM094
			(1826) Henry John Stephen Smith
	3	T	(1867) Martin Wilhelm Kutta
			(1878) Arthur Byron Coble
			(1896) Raymond Louis Wilder
			(1906) Carl Benjamin Boyer
	4	W	(1744) Johann (III) Bernoulli RM093
			(1865) Pierre Simon Girard
	5	T	(1848) James Whitbread Lee Glaisher
			(1930) John Frank Adams
	6	F	(1781) Giovanni Antonio Amedeo Plana RM154
			(1906) Emma Markovna Trotskaia Lehmer
	7	S	(1660) Thomas Fantet de Lagny
			(1799) Karl Heinrich Graffe
			(1567) Clara Immerwahr RM182
			(1898) Raphael Salem
	8	S	(1656) Edmond Halley RM190
			(1846) Eugenio Bertini
			(1848) Fredrich Ludwig Gottlob Frege
			(1854) Johannes Robert Rydberg
			(1869) Felix Hausdorff RM178
46	9	M	(1847) Carlo Alberto Castigliano
			(1885) Theodor Franz Eduard Kaluza
			(1885) Hermann Klaus Hugo Weyl RM082
			(1906) Jaroslav Borisovich Lopatynsky
			(1913) Hedwig Eva Maria Kiesler (Hedy Lamarr) RM144
			(1922) Imre Lakatos
	10	T	(1829) Helwin Bruno Christoffel
	11	W	(1904) John Henry Constantine Whitehead
	12	T	(1825) Michail Egorovich Vashchenko-Zakharchenko
			(1842) John William Strutt Lord Rayleigh
			(1927) Yutaka Taniyama
	13	F	(1876) Ernest Julius Wilkzynsky
			(1878) Max Wilhelm Dehn
	14	S	(1845) Ulisse Dini
			(1919) Paulette Libermann
			(1975) Martin Hairer RM189
	15	S	(1688) Louis Bertrand Castel
			(1793) Michel Chasles
			(1794) Franz Adolph Taurinus
47	16	M	(1835) Eugenio Beltrami RM150
	17	T	(1597) Henry Gellibrand
			(1717) Jean Le Rond D'Alembert RM166
			(1790) August Ferdinand Möbius RM118
	18	W	(1872) Giovanni Enrico Eugenio Vacca
			(1927) Jon Leslie Britton
	19	T	(1894) Heinz Hopf
			(1900) Michail Alekseevich Lavrentev
			(1901) Nina Karlovna Bari
	20	F	(1889) Edwin Powell Hubble
			(1924) Benoît Mandelbrot
			(1963) William Timothy Gowers
	21	S	(1867) Dimitri Sintsov
	22	S	(1803) Giusto Bellavitis
			(1840) Émile Michel Hyacinthe Lemoine
48	23	M	(1616) John Wallis RM070
			(1820) Issac Todhunter
			(1917) Elizabeth Leonard Scott RM106
	24	T	(1549) Duncan Maclaren Young Sommerville
			(1909) Gerhard Gentzen
	25	W	(1841) Fredrich Wilhelm Karl Ernst Schröder
			(1873) Claude Louis Mathieu
			(1943) Evelyn Merle Roden Nelson
	26	T	(1894) Norbert Wiener RM172
			(1946) Enrico Bombieri
	27	F	(1867) Arthur Lee Dixon
	28	S	(1898) John Wishart
	29	S	(1803) Christian Andreas Doppler
			(1849) Horace Lamb
			(1879) Nikolay Mitrofanovich Krylov
49	30	M	(1549) Sir Henry Savile
			(1969) Matilde Marcolli RM142

Rudi Mathematici

November

Putnam 2000, B5

Let S_0 be a finite set of positive integers. We define finite sets S_1, S_2, … of positive integers as follows: the integer a is in S_{n+1} if and only if exactly one of $a - 1$ and a is in S_n. Show that there exist infinitely many integers N for which $S_N = S_0 \cup \{N + a : a \in S_0\}$.

English Jokes that only intellectuals understand

A logician's wife is having a baby. The doctor immediately hands the newborn to the dad.

His wife asks impatiently: "So, is it a boy or a girl?"

The logician replies: "Yes".

Headlines from a Mathematical World

Unemployment Rate Jumps from 7.6% *to* 7.8%.

Mathematically Literate World: Unemployment Rate Probably a Little Under 8%; Maybe Rising, or Not, Can't Really Tell.

Neither in the subjective nor in the objective world can we find a criterion for the reality of the number concept, because the first contains no such concept, and the second contains nothing that is free from the concept. How then can we arrive at a criterion? Not by evidence, for the dice of evidence are loaded. Not by logic, for logic has no existence independent of mathematics: it is only one phase of this multiplied necessity that we call mathematics. How then shall mathematical concepts be judged? They shall not be judged. Mathematics is the supreme arbiter. From its decisions there is no appeal. We cannot change the rules of the game, we cannot ascertain whether the game is fair. We can only study the player at his game; not, however, with the detached attitude of a bystander, for we are watching our own minds at play.

George Dantzig

Here's another good reason why the models shall be as simple as possible: if we're lucky, we can use the same model to study many different phenomena at once.

William Timothy Gowers

[Arithmetic] is one of the oldest branches, perhaps the very oldest branch, of human knowledge; and yet some of its most abstruse secrets lie close to its tritest truths.

Henry John Stephen Smith

...numbers have neither substance, nor meaning, nor qualities. They are nothing but marks, and all that is in them we have put into them by the simple rule of straight succession..

Hermann Klaus Hugo Weyl

One of the chief duties of a mathematician in acting as an advisor to scientists is to discourage them from expecting too much of mathematicians.

Norbert Wiener

December

	1	T	(1792) Nikolay Yvanovich Lobachevsky	RM083
			(1847) Christine Ladd-Franklin	
	2	W	(1831) Paul David Gustav du Bois-Reymond	
			(1901) George Frederick James Temple	
	3	T	(1903) Sidney Goldstein	
			(1924) John Backus	
	4	F	(1795) Thomas Carlyle	
	5	S	(1868) Arnold Johannes Wilhelm Sommerfeld	
			(1901) Werner Karl Heisenberg	RM155
			(1907) Giuseppe Occhialini	RM122
	6	S	(1682) Giulio Carlo Fagnano dei Toschi	
50	7	M	(1647) Giovanni Ceva	
			(1823) Leopold Kronecker	
			(1830) Antonio Luigi Gaudenzio Giuseppe Cremona	RM150
			(1924) Mary Ellen Rudin	
	8	T	(1508) Regnier Gemma Frisius	
			(1865) Jaques Salomon Hadamard	
			(1919) Julia Bowman Robinson	
	9	W	(1883) Nikolai Nikolaievich Luzin	
			(1906) Grace Brewster Murray Hopper	
			(1917) Sergei Vasilovich Fomin	
	10	T	(1804) Karl Gustav Jacob Jacobi	
			(1815) Augusta Ada King Countess Of Lovelace	RM059
	11	F	(1882) Max Born	RM155
	12	S	(1832) Peter Ludwig Mejdell Sylow	
			(1913) Emma Castelnuovo	RM191
	13	S	(1724) Franz Ulrich Theodosius Aepinus	
			(1887) George Polya	RM131
51	14	M	(1546) Tycho Brahe	
	15	T	(1802) János Bolyai	RM083
			(1923) Freeman John Dyson	
	16	W	(1804) Wiktor Yakovievich Bunyakowsky	
	17	T	(1706) Gabrielle Emile Le Tonnelier de Breteuil du Chatelet	
			(1835) Felice Casorati	
			(1842) Marius Sophus Lie	
			(1900) Dame Mary Lucy Cartwright	
	18	F	(1856) Joseph John Thomson	RM161
			(1917) Roger Lyndon	
			(1942) Lenore Blum	
	19	S	(1783) Charles Julien Brianchon	
			(1854) Marcel Louis Brillouin	
			(1887) Charles Galton Darwin	RM138
	20	S	(1494) Oronce Fine	
			(1648) Tommaso Ceva	
			(1875) Francesco Paolo Cantelli	
52	21	M	(1878) Jan Łukasiewicz	
			(1921) Edith Hirsch Luchins	
			(1932) John Robert Ringrose	
	22	T	(1824) Francesco Brioschi	RM150
			(1859) Otto Ludwig Hölder	
			(1877) Tommaso Boggio	
			(1887) Srinivasa Aiyangar Ramanujan	
	23	W	(1872) Georgii Yurii Pfeiffer	
	24	T	(1822) Charles Hermite	RM095
			(1868) Emmanuel Lasker	RM167
	25	F	(1642) Isaac Newton	RM071
			(1900) Antoni Zygmund	
	26	S	(1780) Mary Fairfax Greig Somerville	
			(1791) Charles Babbage	RM059
			(1937) John Horton Conway	RM119
	27	S	(1571) Johannes Kepler	
			(1654) Jacob (Jacques) Bernoulli	RM093
53	28	M	(1808) Athanase Louis Victoire Duprè	
			(1882) Arthur Stanley Eddington	RM179
			(1903) John von Neumann	RM107
	29	T	(1856) Thomas Jan Stieltjes	
	30	W	(1897) Stanislaw Saks	
	31	T	(1872) Volodymyr Levitsky	
			(1896) Carl Ludwig Siegel	
			(1945) Leonard Adleman	RM143
			(1952) Vaughan Frederick Randall Jones	

Hanc Marginis Exiguitas Non Caperet

Putnam 2000, B6

Let B a set of more than $\dfrac{2^{n+1}}{n}$ distinct point with coordinates of the form $(\pm 1, \pm 1, ..., \pm 1)$ in n-dimensional space with $n \geq 3$. Show that there are three distinct points in B which are the vertices of an equilateral triangle.

English Jokes that only intellectuals understand

Jean-Paul Sartre is sitting at a French café, revising his draft of Being and Nothingness. He says to the waitress: "I'd like a cup of coffee, please. With no cream". The waitress replies: "I'm sorry, Monsieur, but we're out of cream. How about one with no milk?"

Headlines from a Mathematical World

Local Heat Wave Seen as Sign of Global Warming.

Mathematically Literate World: Local Heat Wave Not Seen as Meaningful Indicator of Global Trends.

I am now convinced that theoretical physics is actual philosophy.

Max Born

Now it is quite clear to me that there are no solid spheres in the heavens, and those that have been devised by the authors to save the appearances, exist only in the imagination.

Tycho Brahe

Math seems to provide us with a kind of new sense.

Charles Galton Darwin

To a physicist, mathematics is not only a tool through which you can compute the phenomena; it is the main source of concepts and principles, by which you create new theories.

Freeman John Dyson

We used to think that if we knew one, we knew two, because one and one are two. We are finding that we must learn a great deal more about 'and'.

Arthur Stanley Eddington

We are servants rather than masters in mathematics.

Charles Hermite

Nothing has afforded me so convincing a proof of the unity of the Deity as these purely mental conceptions of numerical and mathematical science which have been by slow degrees vouchsafed to man, and are still granted in these latter times by the Differential Calculus, now superseded by the Higher Algebra, all of which must have existed in that sublimely omniscient Mind from eternity.

Mary Fairfax Greig Somerville