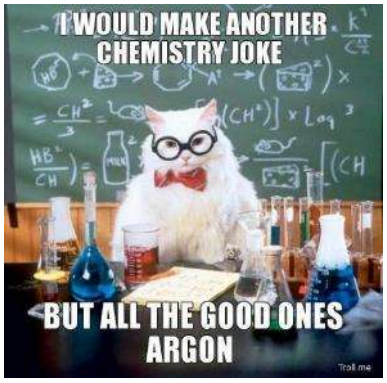
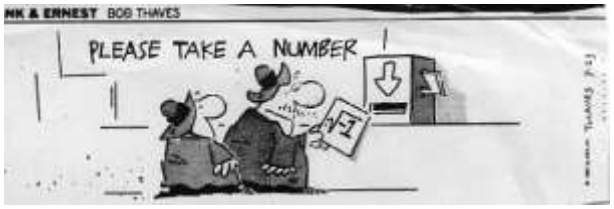
$$x^3 - 6'153x^2 + 12'619'019x - 8'626'130'667 = 0$$





	1	S	(1803) Guglielmo Libri Carucci dalla Sommaja (1878) Agner Krarup Erlang (1894) Satyendranath Bose (1912) Boris Gnedenko	RM132 RM168
1	2	M	(1822) Rudolf Julius Emmanuel Clausius (1905) Lev Genrichovich Shnirelman (1938) Anatoly Samoilenko	RM240
	3	T	(1777) Louis Poinsot (1917) Yuri Alexeievich Mitropolsky	
	4	W	(1643) Isaac Newton	RM071
	5	T	(1723) Nicole-Reine Étable de Labrière Lepaute (1838) Marie Ennemond Camille Jordan (1871) Federigo Enriques (1871) Gino Fano	 RM276 RM084
	6	F	(1807) Jozeph Mitza Petzval (1841) Rudolf Sturm	
	7	S	(1871) Felix Edouard Justin Émile Borel (1907) Raymond Edward Alan Christopher Paley (1925) Walter Noll	
	8	S	(1888) Richard Courant (1924) Paul Moritz Cohn (1942) Stephen William Hawking	RM156
2	9	M	(1864) Vladimir Adreievich Steklov (1882) Pavel Aleksandrovitch Florenskij (1915) Mollie Orshansky	 RM252
	10	T	(1875) Issai Schur (1905) Ruth Moufang	
	11	W	(1545) Guidobaldo del Monte (1707) Vincenzo Riccati (1734) Achille Pierre Dionis du Sejour	RM120
	12	T	(1853) Gregorio Ricci-Curbastro (1906) Kurt August Hirsch (1915) Herbert Ellis Robbins	 RM156
	13	F	(1864) Wilhelm Karl Werner Otto Fritz Franz Wien (1876) Luther Pfahler Eisenhart (1876) Erhard Schmidt (1902) Karl Menger	
	14	S	(1901) Alfred Tarski	RM096
	15	S	(1704) Johann Castillon (1717) Mattew Stewart (1850) Sofia Vasilievna Kovalevskaya	 RM144
3	16	M	(1801) Thomas Klausen	
	17	T	(1647) Catherina Elisabetha Koopman Hevelius (1847) Nikolay Egorovich Zukowsky (1858) Gabriel Koenigs	RM264
	18	W	(1856) Luigi Bianchi (1880) Paul Ehrenfest	 RM204
	19	T	(1813) Rudolf Friedrich Alfred Clebsch (1879) Guido Fubini (1908) Aleksandr Gennadievich Kurosh	
	20	F	(1775) André Marie Ampère (1895) Gabor Szegő (1904) Renato Caccioppoli	 RM072
	21	S	(1846) Pieter Hendrik Schoute (1882) Pavel Aleksandrovitch Florenskij (1915) Yuri Vladimirovich Linnik	 RM252
	22	S	(1561) Francis Bacon (1592) Pierre Gassendi (1886) John William Navin Sullivan (1908) Lev Davidovich Landau	 RM228
4	23	M	(1840) Ernst Abbe (1862) David Hilbert	 RM060
	24	T	(1891) Abram Samoilovitch Besicovitch (1902) Oskar Morgenstern (1914) Vladimir Petrovich Potapov	
	25	W	(1627) Robert Boyle (1736) Joseph-Louis Lagrange (1843) Karl Hermann Amandus Schwarz	 RM048
	26	T	(1799) Benoît Paul Émile Clapeyron (1849) Francesco Flores D'Arcais (1862) Eliakim Hastings Moore	
	27	F	(1832) Charles Lutwidge Dodgson	RM108
	28	S	(1611) Johannes Hevelius (1701) Charles Marie de La Condamine (1888) Louis Joel Mordell (1892) Carlo Emilio Bonferroni	RM264
	29	S	(1817) William Ferrel (1888) Sidney Chapman	
5	30	M	(1619) Michelangelo Ricci	RM216
	31	T	(1715) Giovanni Francesco Fagnano dei Toschi (1841) Samuel Loyd (1896) Sofia Alexandrovna Janowskaja	 RM192

Rudi Mathematici

January

Putnam 2008, A1

Let f: $R^2 \to R$ be a function such that $f(x, y) + f(y, z) + f(z, x) = 0$ for all real numbers x, y, and z. Prove that there exists a function g: $R \to R$ such that $f(x, y) = g(x) - g(y)$ for all real numbers x and y.

The Wonderful World of Statistics

The Japanese eat very little fat and suffer fewer heart attacks than the British or the Americans.
The French eat a lot of fat and also suffer fewer heart attacks than the British or the Americans.
The Japanese drink very little red wine and suffer fewer heart attacks than the British or the Americans.
The Italians drink excessive amounts of red wine and also suffer fewer heart attacks than the British or the Americans.
Conclusion: Eat and drink whatever you like. It's speaking English that kills you.

Not Exactly a Horoscope

The Sun enters Capricorn on the 21st; people born in this period insist to prove statistically that astrologists haven't got a clue.

My most intimate persuasion is this: nothing is lost completely, nothing vanishes, but it is kept in some time and in some place. What is the image of the good and has value remains, even if we stop perceiving it.

Pavel Aleksandrovitch Florenskij

...to characterize the import of pure geometry, we might use the standard form of a movie-disclaimer: No portrayal of the characteristics of geometrical figures or of the spatial properties of relationships of actual bodies is intended, and any similarities between the primitive concepts and their customary geometrical connotations are purely coincidental.

Carl G. Hempel

We must not believe those, who today, with philosophical bearing and deliberative tone, prophesy the fall of culture and accept the ignorabimus. For us there is no ignorabimus, and in my opinion none whatever in natural science.

David Hilbert

For we may remark generally of our mathematical researches, that these auxiliary quantities, these long and difficult calculations into which we are often drawn, are almost always proofs that we have not in the beginning considered the objects themselves so thoroughly and directly as their nature requires, since all is abridged and simplified, as soon as we place ourselves in a right point of view.

Louis Poinsot

[Epitaph on Newton:] Nature and Nature's law hid in the night: // God said, "Let it be Newton!", and all was illuminated.
[Sir John Collings Squire added:] It didn't last: the Devil crying 'Oh, // Let it be Einstein', restored the status quo.

Alexander Pope

	1	**W**	(1900) John Charles Burkill	
	2	**T**	(1522) Lodovico Ferrari	
			(1893) Cornelius Lanczos	
			(1897) Gertrude Blanch	RM229
	3	**F**	(1893) Gaston Maurice Julia	RM073
	4	**S**	(1905) Eric Cristopher Zeeman	RM241
	5	**S**	(1757) Jean Marie Constant Duhamel	
6	**6**	**M**	(1465) Scipione del Ferro	RM064
			(1612) Antoine Arnauld	
			(1695) Nicolaus (II) Bernoulli	RM093
	7	**T**	(1877) Godfried Harold Hardy	RM049
			(1883) Eric Temple Bell	
	8	**W**	(1700) Daniel Bernoulli	RM093
			(1875) Francis Ysidro Edgeworth	
			(1928) Ennio de Giorgi	RM133
	9	**T**	(1775) Farkas Wolfgang Bolyai	
			(1907) Harold Scott Macdonald Coxeter	RM097
	10	**F**	(1747) Aida Yasuaki	RM121
			(1932) Vivienne Malone-Mayes	
	11	**S**	(1657) Bernard Le Bovier de Fontenelle	
			(1800) William Henry Fox Talbot	RM205
			(1839) Josiah Willard Gibbs	
			(1915) Richard Wesley Hamming	
	12	**S**	(1914) Hanna Caemmerer Neumann	
			(1921) Kathleen Rita Mcnulty Mauchly Antonelli	
7	**13**	**M**	(1805) Johann Peter Gustav Lejeune Dirichlet	RM145
	14	**T**	(1468) Johann Werner	RM253
			(1849) Hermann Hankel	
			(1877) Edmund Georg Hermann Landau	RM063
			(1896) Edward Artur Milne	
			(1932) Maurice Audin	RM194
	15	**W**	(1564) Galileo Galilei	RM085
			(1850) Sophie Willock Bryant	
			(1861) Alfred North Whitehead	
			(1946) Douglas Hofstadter	
	16	**T**	(1822) Francis Galton	
			(1903) Beniamino Segre	
	17	**F**	(1890) Sir Ronald Aylmer Fisher	
			(1891) Adolf Abraham Halevi Fraenkel	
			(1905) Rózsa Péter	
	18	**S**	(1404) Leon Battista Alberti	RM157
			(1919) Clifford Ambrose Truesdell III	
	19	**S**	(1473) Nicolaus Copernicus	RM181
8	**20**	**M**	(1844) Ludwig Boltzmann	RM061
	21	**T**	(1591) Girard Desargues	
			(1915) Evgeny Michailovich Lifshitz	
	22	**W**	(1857) Heinrich Rudolf Hertz	
			(1903) Frank Plumpton Ramsey	RM217
	23	**T**	(1561) Henry Briggs	RM169
			(1583) Jean-Baptiste Morin	
			(1730) Giulio Giuseppe Mozzi del Garbo	RM277
			(1905) Derrick Henry Lehmer	RM215
			(1922) Anneli Cahn Lax	
			(1951) Shigefumi Mori	
	24	**F**	(1871) Felix Bernstein	
	25	**S**	(1827) Henry Watson	
	26	**S**	(1786) Dominique Francois Jean Arago	RM193
9	**27**	**M**	(1881) Luitzen Egbertus Jan Brouwer	
	28	**T**	(1735) Alexandre Théophile Vandermonde	RM265
	29		(1860) Herman Hollerith	RM109

February

Putnam 2008, A2

Alan and Barbara play a game in which they take turns filling entries of an initially empty 2008 × 2008 array. Alan plays first. At each turn, a player chooses a real number and places it in a vacant entry. The game ends when all the entries are filled. Alan wins if the determinant of the resulting matrix is nonzero; Barbara wins if it is zero. Which player has a winning strategy?

The Wonderful World of Statistics

Anytime you have a 50-50 chance of getting something right, there's a 90% probability you'll get it wrong.

Not Exactly a Horoscope

The Sun enters Aquarius on the 16th; people born in this period are convinced that astrologists persecute them only.

...an incorrect theory, even if it cannot be inhibited by any contradiction that would refute it, is none the less incorrect, just as a criminal policy is none the less criminal even if it cannot be inhibited by any court that would curb it.

Luitzen E. J. Brouwer

Toute la philosophie n'est fondée sur deux choses: sur ce qu'on a l'esprit curieux et les yeux mauvais.
Science originates from curiosity and bad eyesight.

Bernard Le Bovier De Fontenelle

Young men should prove theorems, old men should write books.

Godfried Harold Hardy

Unlike architecture, where the buildings are visible and the scaffolding is almost always considered ugly, no one can see inside the mind of the mathematical thinker, so if the metaphorical scaffolding serves to clarify the essence of the idea then better leave it. The invisible scaffolding that gave rise to abstraction enriches mathematical thinking.

Douglas Hofstadter

By relieving the brain of all unnecessary work, a good notation sets it free to concentrate on more advanced problems, and, in effect, increases the mental power of the race.

Alfred North Whitehead

	1	**W**	(1611) John Pell
			(1879) Robert Daniel Carmichael
	2	**T**	(1836) Julius Weingarten
	3	**F**	(1838) George William Hill
			(1845) Georg Cantor RM062
			(1916) Paul Richard Halmos
	4	**S**	(1822) Jules Antoine Lissajous
	5	**S**	(1512) Gerardus Mercator
			(1759) Benjamin Gompertz
			(1817) Angelo Genocchi RM230
			(1885) Pauline Sperry
			(1915) Laurent Schwartz RM194
			(1931) Vera Pless
10	**6**	**M**	(1866) Ettore Bortolotti
	7	**T**	(1792) William Herschel RM146
			(1824) Delfino Codazzi
			(1922) Olga Alexandrovna Ladyzhenskaya
	8	**W**	(1851) George Chrystal
	9	**T**	(1818) Ferdinand Joachimsthal
			(1900) Howard Hathaway Aiken
	10	**F**	(1864) William Fogg Osgood
			(1872) Mary Ann Elizabeth Stephansen
	11	**S**	(1811) Urbain Jean Joseph Le Verrier
			(1853) Salvatore Pincherle
			(1870) Louis Bachelier RM158
	12	**S**	(1685) George Berkeley
			(1824) Gustav Robert Kirchhoff
			(1859) Ernesto Cesaro
11	**13**	**M**	(1861) Jules Joseph Drach
			(1957) Rudy D'Alembert RM278
	14	**T**	(1864) Jozef Kurschak
			(1879) Albert Einstein RM074
			(1882) Wacław Sierpiński RM271
			(1904) Lyudmila Vsevolodovna Keldysh RM266
	15	**W**	(1860) Walter Frank Raphael Weldon
			(1868) Grace Chisolm Young
	16	**T**	(1750) Caroline Herschel RM146
			(1789) Georg Simon Ohm
			(1846) Magnus Gosta Mittag-Leffler
	17	**F**	(1876) Ernest Benjamin Esclangon
			(1897) Charles Fox
			(1915) Wolfgang (Vincent) Döblin (Doblin) RM254
	18	**S**	(1640) Philippe de La Hire
			(1690) Christian Goldbach RM122
			(1796) Jacob Steiner
			(1870) Agnes Sime Baxter
	19	**S**	(1862) Adolf Kneser
			(1910) Jacob Wolfowitz
12	**20**	**M**	(1840) Franz Mertens
			(1884) Philip Franck
			(1938) Sergei Petrovich Novikov
	21	**T**	(1768) Jean Baptiste Joseph Fourier RM242
			(1884) George David Birkhoff
	22	**W**	(1394) Ulugh Beg RM206
			(1891) Lorna Mary Swain
			(1917) Irving Kaplansky
			(1944) Margaret Hilary Ashworth Millington
	23	**T**	(1749) Pierre-Simon de Laplace
			(1754) Georg Freiherr von Vega
			(1882) Emmy Amalie Noether RM050
			(1897) John Lighton Synge
	24	**F**	(1809) Joseph Liouville
			(1948) Sun-Yung (Alice) Chang
			(1966) Gigliola Staffilani RM142
	25	**S**	(1538) Christopher Clausius
	26	**S**	(1848) Konstantin Andreev
			(1913) Paul Erdős RM110
13	**27**	**M**	(1857) Karl Pearson
	28	**T**	(1928) Alexander Grothendieck RM086
	29	**W**	(1825) Francesco Faà Di Bruno RM170
			(1873) Tullio Levi-Civita RM098
			(1896) Wilhelm Ackermann
	30	**T**	(1892) Stefan Banach RM134
			(1921) Alfréd Rényi
	31	**F**	(1596) René Descartes RM218

Rudi Mathematici

March

Putnam 2008, A3

Start with a finite sequence a_1, a_2, …, a_n of positive integers. If possible, choose two indices $j < k$ such that a_j does not divide a_k, and replace a_j and a_k by $\gcd(a_j, a_k)$ and $\text{lcm}(a_j, a_k)$, respectively. Prove that if this process is repeated, it must eventually stop and the final sequence does not depend on the choices made. (Note: gcd means greatest common divisor and lcm means least common multiple.)

The Wonderful World of Statistics

The latest survey shows that 3 out of 4 people make up 75% of the world's population.

Not Exactly a Horoscope

The Sun enters Pisces on the 12th; people born in this period let the astrologists talk for three hours and then interrupt with "Sorry? I got distracted".

Above all I liked mathematics, for the certainty and evidence of their reasons, but I still could not determine their true use and, thinking that they were useful only for the mechanical arts, I wondered amazed why on such solid foundations wasn't yet built anything significant.

René Descartes

If you torture the numbers long enough, they'll confess to anything.

Greg Easterbrook

What is this frog and mouse battle among the mathematicians? [i.e. Brouwer vs. Hilbert].

Albert Einstein

[After seeing Hilbert's work on invariant theory] This is not mathematics, but theology.

P. Gordon

Such is the advantage of a well constructed language that its simplified notation often becomes the source of profound theories.

Pierre-Simon De Laplace

The mathematician's best work is art, a highly perfect art, which dares like the most secret dreams of the imagination, clear and limpid. Mathematical and artistic genius collide.

Magnus Gosta Mittag-Leffler

Mathematics cannot be defined without recognizing its most important characteristic: mathematics is interesting. In no other field is intellectual beauty so deeply felt, in no other field so painstakingly appreciated in its various degrees and qualities, as in mathematics. And it is only this informal assessment of mathematical value that can distinguish what is mathematics from a hodgepodge of statements and operations that – however formally similar – are utterly trivial and uninteresting.

Michael Polànyi

[mathematics], this quiet temple of strong bones, this miracle of stability by which our incorruptible form is still supported.

Leonardo Sinisgalli

	1	S	(1640) Georg Mohr (1776) Marie-Sophie Germain RM219 (1895) Alexander Craig Aitken
	2	S	(1878) Edward Kasner (1934) Paul Joseph Cohen (1984) Alessio Figalli RM243
14	3	M	(1835) John Howard Van Amringe (1892) Hans Rademacher (1900) Albert Edward Ingham (1971) Alice Riddle
	4	T	(1809) Benjamin Peirce RM123 (1842) François Édouard Anatole Lucas RM279 (1949) Shing-Tung Yau
	5	W	(1588) Thomas Hobbes (1607) Honoré Fabri (1622) Vincenzo Viviani (1869) Sergei Alexeievich Chaplygin
	6	T	(1801) William Hallowes Miller
	7	F	(1768) François-Joseph Français
	8	S	(1903) Marshall Harvey Stone
	9	S	(1791) George Peacock (1816) Charles Eugene Delaunay (1894) Cypra Cecilia Krieger Dunaij (1919) John Presper Heckert
15	10	M	(1857) Henry Ernest Dudeney RM183
	11	T	(1953) Andrew John Wiles RM207
	12	W	(1794) Germinal Pierre Dandelin (1852) Carl Louis Ferdinand von Lindemann RM267 (1903) Jan Tinbergen
	13	T	(1728) Paolo Frisi (1813) Duncan Farquharson Gregory (1869) Ada Isabel Maddison (1879) Francesco Severi (1909) Stanislaw Marcin Ulam RM171
	14	F	(1629) Christiaan Huygens RM135
	15	S	(1452) Leonardo da Vinci (1548) Pietro Antonio Cataldi (1707) Leonhard Euler RM051 (1809) Herman Gunther Grassmann
	16	S	(1682) John Hadley (1823) Ferdinand Gotthold Max Eisenstein
16	17	M	(1798) Étienne Bobillier (1853) Arthur Moritz Schonflies (1863) Augustus Edward Hough Love
	18	T	(1791) Ottaviano Fabrizio Mossotti RM150 (1907) Lars Valerian Ahlfors (1918) Hsien Chung Wang (1949) Charles Louis Fefferman
	19	W	(1880) Evgeny Evgenievich Slutsky (1883) Richard von Mises (1901) Kiyoshi Oka (1905) Charles Ehresmann
	20	T	(1839) Francesco Siacci
	21	F	(1652) Michel Rolle (1774) Jean Baptiste Biot (1875) Teiji Takagi RM231
	22	S	(1811) Otto Ludwig Hesse (1887) Harald August Bohr RM063 (1935) Bhama Srinivasan (1939) Sir Michael Francis Atiyah
	23	S	(1858) Max Karl Ernst Ludwig Planck (1910) Sheila Scott Macintyre
17	24	M	(1863) Giovanni Vailati (1899) Oscar Zariski RM099
	25	T	(1849) Felix Christian Klein RM255 (1900) Wolfgang Pauli (1903) Andrei Nicolayevich Kolmogorov RM159
	26	W	(1889) Ludwig Josef Johan Wittgenstein
	27	T	(1755) Marc-Antoine Parseval des Chenes (1932) Gian-Carlo Rota RM195
	28	F	(1906) Kurt Gödel RM087
	29	S	(1854) Jules Henri Poincaré RM075
	30	S	(1777) Johann Carl Friedrich Gauss RM147 (1916) Claude Elwood Shannon RM111

April

Putnam 2008, A4

Define f: $R \to R$ by

$$f(x) = \begin{cases} x & \text{if } x \le e \\ xf(\ln x) & \text{if } x > e \end{cases}$$

Does $\sum_{n=1}^{\infty} \frac{1}{f(n)}$ converge?

The Wonderful World of Statistics

A couple of months in the laboratory can frequently save you a couple of hours in the library.

Not Exactly a Horoscope

The Sun enters Aries on the 18th; people born under this sign try all the time to convince the astrologists they are wrong, but, unlike Capricorns, it normally ends up badly.

The crisis of mathematics has the sense of the collapse of those columns announcing "die Samson and all the Philistines". A sensation that should make us feel as if we were sitting by a burning fireplace in the evening, to rest from the journey and meditate on the need to know and on the impression, after having seen so many things, of not having found what one is looking for. I feel like someone who has visited a vast archaeological area, has imagined a past greatness now reduced to mere rubble.

Vittorino Andreoli

Despite their remoteness from sensory experience, we have something like a perception of even the objects of set theory, as can be seen by the fact that the axioms themselves force us to hold them to be true. I see no reason why we should have less faith in this kind of perception, i.e. mathematical intuition, than in sensory perception, which leads us to construct physical theories and expect future sensory sensations to accord with them...

Kurt Gödel

Talk with M. Hermite. He never evokes a concrete image, yet you soon perceive that the more abstract entities are to him like living creatures.

Jules Henri Poincarè

[about the builders of communications towers] But what was happening now… this was magical. Ordinary men had dreamed it up and set it up, building towers on rafts in swamps and across frozen mountain crests. They cursed, and worse, they used logarithms. They forded rivers and immersed themselves in trigonometry. They hadn't dreamed, in the sense people usually use the word, but they imagined a different world, and bent metal around it. And out of all the sweat and cursing and math came this…thing, dripping across the world words as soft as starlight.

Terry Pratchett

A guy [G.H. Hardy?] widens the domain of mathematics: he gives new definitions and finds new theorems – and, from a certain point of view, one can say that he doesn't know what he is doing. He vaguely imagines that he has discovered something like a space (and at this point one thinks of a room), that he has opened up a new realm, and if you asked him about it he would say a lot of nonsense.

Ludwig Josef Johan Wittgenstein

18	**1**	**M**	(1825) Johann Jacob Balmer	RM122
			(1908) Morris Kline	
			(1977) Maryam Mirzakhani	RM189
	2	**T**	(1860) D'Arcy Wentworth Thompson	RM138
			(1905) Kazimierz Zarankiewitz	
	3	**W**	(1842) Otto Stolz	
			(1860) Vito Volterra	RM136
			(1892) George Paget Thomson	RM161
	4	**T**	(1845) William Kingdon Clifford	
	5	**F**	(1833) Lazarus Emmanuel Fuchs	
			(1883) Anna Johnson Pell Wheeler	
			(1889) René Eugène Gateaux	RM196
			(1897) Francesco Giacomo Tricomi	RM256
			(1923) Cathleen Synge Morawetz	
	6	**S**	(1872) Willem de Sitter	
			(1906) André Weil	RM088
	7	**S**	(1854) Giuseppe Veronese	RM220
			(1881) Ebenezer Cunningham	
			(1896) Pavel Sergieievich Alexandrov	
			(1926) Alexis Claude Clairaut	
19	**8**	**M**	(1859) Johan Ludwig William Valdemar Jensen	
			(1905) Winifred Lydia Caunden Sargent	
	9	**T**	(1746) Gaspard Monge	RM208
			(1876) Gilbert Ames Bliss	
			(1965) Karen Ellen Smith	
	10	**W**	(1788) Augustin Jean Fresnel	
			(1847) William Karl Joseph Killing	
			(1904) Edward James Mcshane	
			(1958) Piotr Rezierovich Silverbrahms	
	11	**T**	(1902) Edna Ernestine Kramer Lassar	
			(1918) Richard Phillips Feynman	RM076
	12	**F**	(1820) Florence Nightingale	RM104
			(1845) Pierre René Jean Baptiste Henry Brocard	
			(1902) Frank Yates	
	13	**S**	(1750) Lorenzo Mascheroni	
			(1899) Pelageia Yakovlevna Polubarinova Kochina	
	14	**S**	(1832) Rudolf Otto Sigismund Lipschitz	
			(1863) John Charles Fields	RM100
20	**15**	**M**	(1939) Brian Hartley	
			(1964) Sijue Wu	
	16	**T**	(1718) Maria Gaetana Agnesi	RM112
			(1821) Pafnuti Lvovi Chebyshev	
			(1911) John (Jack) Todd	RM139
	17	**W**	(1940) Alan Kay	
	18	**T**	(1850) Oliver Heaviside	RM160
			(1892) Bertrand Arthur William Russell	RM052
	19	**F**	(1865) Flora Philip	
			(1919) Georgii Dimitirievich Suvorov	
	20	**S**	(1861) Henry Seely White	
	21	**S**	(1471) Albrecht Dürer	RM124
			(1792) Gustave Gaspard de Coriolis	
21	**22**	**M**	(1865) Alfred Cardew Dixon	
	23	**T**	(1914) Lipa Bers	RM148
	24	**W**	(1544) William Gilbert	
	25	**T**	(1838) Karl Mikailovich Peterson	
			(1979) Elena Tosato	RM268
	26	**F**	(1667) Abraham de Moivre	RM280
			(1896) Yuri Dimitrievich Sokolov	
	27	**S**	(1862) John Edward Campbell	
	28	**S**	(1676) Jacopo Francesco Riccati	RM232
			(1710) Johann (II) Bernoulli	RM093
22	**29**	**M**	(1882) Harry Bateman	
	30	**T**	(1814) Eugene Charles Catalan	RM184
	31	**W**	(1926) John Kemeny	

May

Putnam 2008, A5

Let $n \geq 3$ be an integer. Let $f(x)$ and $g(x)$ be polynomials with real coefficients such that the points $(f(1), g(1))$, $(f(2), g(2))$, …, $(f(n), g(n))$ in $\mathbb{R}^2$ are the vertices of a regular n-gon in counter-clockwise order.
Prove that at least one of $f(x)$ and $g(x)$ has degree greater than or equal to $n-1$.

The Wonderful World of Statistics

How many statisticians does it take to change a light bulb? One (plus or minus three).

Not Exactly a Horoscope

The Sun enters Taurus on the 15th; people born in this period are convinced that, logically, sooner or later the astrologists will understand, that they have no clue.

Mathematics is not a march on a well-maintained highway, but rather a journey through strange territory, where explorers often get lost. Rigor should be a signal to the historian that the maps have been drawn, and the real explorers have moved elsewhere.

William Sherron Anglin

At first it seems obvious, but the more you think about it the stranger the deductions from this axiom seem to become; in the end you cease to understand what is meant by it.

Bertrand Arthur William Russell

The mathematic, then, is an art. As such it has its styles and style periods. It is not, as the layman and the philosopher (who is in this matter a layman too) imagine, substantially unalterable, but subject like every art to unnoticed changes form epoch to epoch. The development of the great arts ought never to be treated without an (assuredly not unprofitable) side-glance at contemporary mathematics.

Oswald Spengler

My friends, numbers, in their stark simplicity, can confound even the wisest of men.

Malba Tahan

Mathematics is not a spectator sport.

David Tall

I'm sorry to say that the subject I most disliked was mathematics. ...I think the reason was that mathematics leaves no room for argument. If you made a mistake, that was all there was to it.

Malcom X

June

	1	**T**	(1796) Sadi Leonard Nicolas Carnot	
			(1851) Edward Bailey Elliott	
			(1899) Edward Charles Titchmarsh	
	2	**F**	(1895) Tibor Radó	
	3	**S**	(1659) David Gregory	
			(1954) Susan Landau	
	4	**S**	(1809) John Henry Pratt	
			(1966) Svetlana Yakovlevna Jitomirskaya	RM197
23	**5**	**M**	(1814) Pierre Laurent Wantzel	RM065
			(1819) John Couch Adams	RM281
			(1883) John Maynard Keynes	RM269
			(1941) Nikolai Vladimirovic Krylov	RM286
	6	**T**	(1436) Johann Müller Regiomontanus	RM185
			(1857) Aleksandr Michailovitch Lyapunov	RM077
			(1906) Max August Zorn	
	7	**W**	(1863) Edward Burr Van Vleck	
	8	**T**	(1625) Giovanni Domenico Cassini	RM245
			(1858) Charlotte Angas Scott	
			(1860) Alicia Boole Stott	
			(1896) Eleanor Pairman	RM209
			(1923) Gloria Olive	
			(1924) Samuel Karlin	
	9	**F**	(1885) John Edensor Littlewood	RM049
	10	**S**	(940) Mohammad Abu'L Wafa Al-Buzjani	RM257
			(1887) Vladimir Ivanovich Smirnov	RM101
	11	**S**	(1881) Hilda Phoebe Hudson	
			(1937) David Bryant Mumford	
24	**12**	**M**	(1888) Zygmunt Janyszewski	
			(1937) Vladimir Igorevich Arnold	RM221
	13	**T**	(1831) James Clerk Maxwell	RM113
			(1872) Jessie Chrystal Macmillan	
			(1876) William Sealey Gosset (Student)	
			(1928) John Forbes Nash	RM149
	14	**W**	(1736) Charles Augustin de Coulomb	
			(1856) Andrei Andreyevich Markov	RM125
			(1903) Alonzo Church	RM233
	15	**T**	(1640) Bernard Lamy	
			(1894) Nikolai Gregorievich Chebotaryov	
	16	**F**	(1915) John Wilder Tukey	
	17	**S**	(1898) Maurits Cornelius Escher	RM097
	18	**S**	(1858) Andrew Russell Forsyth	
			(1884) Charles Ernest Weatherburn	
			(1884) Frieda Nugel	
			(1913) Paul Teichmüller	RM148
			(1915) Alice Turner Schafer	
25	**19**	**M**	(1623) Blaise Pascal	RM053
			(1902) Wallace John Eckert	
	20	**T**	(1873) Alfred Loewy	
			(1917) Helena Rasiowa	
	21	**W**	(1781) Simeon Denis Poisson	
			(1828) Giuseppe Bruno	
			(1870) Clara Immerwahr	RM182
	22	**T**	(1822) Mario Pieri	
			(1864) Hermann Minkowsky	
			(1910) Konrad Zuse	
			(1932) Mary Wynne Warner	
	23	**F**	(1912) Alan Mathison Turing	RM089
	24	**S**	(1880) Oswald Veblen	
	25	**S**	(1908) William Van Orman Quine	
26	**26**	**M**	(1824) William Thomson, Lord Kelvin	RM161
			(1918) Yudell Leo Luke	
	27	**T**	(1806) Augustus de Morgan	
	28	**W**	(1875) Henri Léon Lebesgue	RM173
	29	**T**	(1888) Aleksandr Aleksandrovich Friedmann	RM101
			(1979) Artur Avila Cordeiro de Melo	RM189
	30	**F**	(1791) Felix Savart	
			(1958) Abigail Thompson	

Putnam 2008, A6

Prove that there exists a constant $c>0$ such that in every nontrivial finite group G there exists a sequence of length at most $c\ln|G|$ with the property that each element of G equals the product of some subsequence.
(The elements of G in the sequence are not required to be distinct. A *subsequence* of a sequence is obtained by selecting some of the terms, not necessarily consecutive, without reordering them; for example, 4, 4, 2 is a subsequence of 2, 4, 6, 4, 2, but 2, 2, 4 is not.).

The Wonderful World of Statistics

A statistician is an accountant without the charisma.

Not Exactly a Horoscope

The Sun enters Gemini on the 21st; people born under this sign tend to ask the astrologists who was born first, the tramp or the gentleman.

It is truly wonderful that with such primitive methods of writing numbers these ancient peoples [Babylonians and Egyptians] were able to progress to such an extent. But perhaps even more astounding is the fact that they made so little progress in the following centuries.

John Derbyshire

...seemed to approach the grave as hyperbole approaches the asymptote, less directly as it approached, so much so that it was doubted whether it would eventually reach it.

Thomas Hardy

And certainly zero and the negatives have all the marks of human artifice: deftness, ambiguity, understatement.

Robert & Ellen Kaplan

We come finally, however, to the relation of the ideal theory to real world, or "real" probability. If he is consistent a man of the mathematical school washes his hands of applications. To someone who wants them he would say that the ideal system runs parallel to the usual theory: "If this is what you want, try it: it is not my business to justify application of the system; that can only be done by philosophizing; I am a mathematician".

John Edensor Littlewood

We do not worry about being respected in towns through which we pass. But if we are going to remain in one for a certain time, we do worry. How long does this time have to be?

Blaise Pascal

All the melodies and harmonies are imbued with numbers and geometries, the proportions bring to life the squares and lyric poetry.

Andreas Speiser

	1	**S**	(1643) Gottfried Wilhelm von Leibniz	RM054
			(1788) Jean-Victor Poncelet	
			(1906) Jean Alexandre Eugène Dieudonné	RM246
	2	**S**	(1820) William John Racquorn Rankine	
			(1852) William Burnside	
			(1925) Olga Arsen'evna Oleinik	
27	**3**	**M**	(1807) Ernest Jean Philippe Fauque de Jonquières	RM162
			(1897) Jesse Douglas	
	4	**T**	(1906) Daniel Edwin Rutherford	
			(1917) Michail Samoilovich Livsic	
	5	**W**	(1936) James Mirrlees	
	6	**T**	(1849) Alfred Bray Kempe	
	7	**F**	(1816) Johann Rudolf Wolf	
			(1906) William Feller	
			(1922) Vladimir Aleksandrovich Marchenko	
	8	**S**	(1760) Christian Kramp	
			(1904) Henri Paul Cartan	RM126
	9	**S**	(1845) George Howard Darwin	RM138
			(1931) Valentina Mikhailovna Borok	RM197
28	**10**	**M**	(1856) Nikola Tesla	RM174
			(1862) Roger Cotes	
			(1868) Oliver Dimon Kellogg	
	11	**T**	(1857) Sir Joseph Larmor	
			(1888) Jacob David Tamarkin	RM101
			(1890) Giacomo Albanese	
	12	**W**	(1875) Ernest Sigismund Fischer	
			(1895) Richard Buckminster Fuller	RM066
			(1935) Nicolas Bourbaki	RM126
	13	**T**	(1527) John Dee	RM234
			(1741) Karl Friedrich Hindenburg	
	14	**F**	(1671) Jacques D'Allonville	
			(1793) George Green	RM078
	15	**S**	(1865) Wilhelm Wirtinger	
			(1898) Mary Taylor Slow	
			(1906) Adolph Andrej Pavlovich Yushkevich	
	16	**S**	(1678) Jakob Hermann	
			(1903) Irmgard Flugge-Lotz	
29	**17**	**M**	(1831) Victor Mayer Amédeé Mannheim	
			(1837) Wilhelm Lexis	
			(1944) Krystyna Maria Trybulec Kuperberg	
	18	**T**	(1013) Hermann von Reichenau	RM282
			(1635) Robert Hooke	RM114
			(1853) Hendrik Antoon Lorentz	RM161
	19	**W**	(1768) Francois Joseph Servois	
	20	**T**	(1876) Otto Blumenthal	RM258
			(1947) Gerd Binnig	RM222
	21	**F**	(1620) Jean Picard	
			(1848) Emil Weyr	
			(1849) Robert Simpson Woodward	
			(1861) Herbert Ellsworth Slaught	
	22	**S**	(1784) Friedrich Wilhelm Bessel	RM198
	23	**S**	(1775) Étienne-Louis Malus	
			(1854) Ivan Slezynsky	
30	**24**	**M**	(1851) Friedrich Hermann Schottky	
			(1871) Paul Epstein	
			(1923) Christine Mary Hamill	
	25	**T**	(1808) Johann Benedict Listing	
	26	**W**	(1903) Kurt Mahler	
	27	**T**	(1667) Johann Bernoulli	RM093
			(1801) George Biddel Airy	
			(1848) Lorand Baron von Eötvös	RM210
			(1867) Derrick Norman Lehmer	RM215
			(1871) Ernst Friedrich Ferdinand Zermelo	RM090
	28	**F**	(1954) Gerd Faltings	RM222
	29	**S**	(1898) Isidor Isaac Rabi	
	30	**S**	(1889) Vladimir Kosma Zworkyn	
31	**31**	**M**	(1704) Gabriel Cramer	RM186
			(1712) Johann Samuel Koenig	
			(1926) Hilary Putnam	

July

Putnam 2008, B1

What is the maximum number of rational points that can lie on a circle in R^2 whose center is not a rational point? (A *rational point* is a point both of whose coordinates are rational numbers.)

The Wonderful World of Statistics

Theory and practice are the same in theory. In practice they are different.

Not Exactly a Horoscope

The Sun enters Cancer on the 20th; people born in this period let the astrologists talk for three hours, then reply "No", and leave them to pay the bill.

Despite its almost proverbial abstruseness (or perhaps precisely because of it), mathematics has not ceased to exercise, in the last one hundred and fifty years, a strong, albeit sometimes subterranean, fascination on those (artists, musicians, writers, philosophers) who have observed from the outside – with lesser or greater competence, with the astonishment of the layman and the admiration of the warned connoisseur, however not with the gaze of the specialist – its prodigious wealth.

Claudio Bartocci

I live on Earth at present, and I don't know what I am. I know that I am not a category. I am not a thing — a noun. I seem to be a verb, an evolutionary process — an integral function of the universe.

Richard Buckminster Fuller

Analytical geometry has never existed. There are only people who do linear geometry badly, by taking coordinates, and they call this analytical geometry. Out with them!

Jean Alexandre Eugène Dieudonné

The truth is, the Science of Nature has been already too long made only a work of the Brain and the Fancy: It is now high time that it should return to the plainness and soundness of Observations on material and obvious things.

Robert Hooke

It's hard to talk about math with someone who isn't in the trade. Perhaps more than the mathematician, it should be the philosopher or the artist who speaks of the relationship between mathematics and society, history, art or game, bringing its high cultural value to the fore.

Federico Peiretti

Our virtues and our failings are inseparable, like force and matter. When they separate, man is no more.

Nikola Tesla

	1	**T**	(1861) Ivar Otto Bendixson (1881) Otto Toeplitz (1955) Bernadette Perrin-Riou	
	2	**W**	(1856) Ferdinand Rudio (1902) Mina Spiegel Rees	
	3	**T**	(1914) Mark Kac	RM115
	4	**F**	(1805) Sir William Rowan Hamilton (1838) John Venn	RM079
	5	**S**	(1802) Niels Henrik Abel (1941) Alexander Keewatin Dewdney	RM055
	6	**S**	(1638) Nicolas Malebranche (1741) John Wilson	RM283
32	**7**	**M**	(1868) Ladislaus Josephowitsch Bortkiewitz	
	8	**T**	(1902) Paul Adrien Maurice Dirac (1931) Sir Roger Penrose (1974) Manjul Bhargava	RM103 RM189
	9	**W**	(1537) Francesco Barozzi (Franciscus Barocius) (1940) Linda Goldway Keen	RM223
	10	**T**	(1602) Gilles Personne de Roberval (1901) Franco Dino Rasetti (1917) Nikolai Sergeevitc Krylov (1926) Carol Ruth Karp	 RM235 RM286
	11	**F**	(1730) Charles Bossut (1842) Enrico D'Ovidio	 RM259
	12	**S**	(1882) Jules Antoine Richard (1887) Erwin Rudolf Josef Alexander Schrödinger	 RM103
	13	**S**	(1625) Erasmus Bartholin (1819) George Gabriel Stokes (1861) Cesare Burali-Forti	 RM187
33	**14**	**M**	(1530) Giovanni Battista Benedetti (1842) Jean Gaston Darboux (1865) Guido Castelnuovo (1866) Charles Gustave Nicolas de La Vallée-Poussin	
	15	**T**	(1863) Aleksei Nikolaevich Krylov (1892) Louis Pierre Victor Duc de Broglie (1901) Piotr Sergeevich Novikov	RM286 RM175
	16	**W**	(1773) Louis-Benjamin Francoeur (1821) Arthur Cayley	
	17	**T**	(1601) Pierre de Fermat	RM091
	18	**F**	(1685) Brook Taylor	
	19	**S**	(1646) John Flamsteed (1739) Georg Simon Klügel	
	20	**S**	(1710) Thomas Simpson (1863) Corrado Segre	RM247
34	**21**	**M**	(1789) Augustin-Louis Cauchy	RM127
	22	**T**	(1647) Denis Papin	
	23	**W**	(1683) Giovanni Poleni (1829) Moritz Benedikt Cantor (1842) Osborne Reynolds	
	24	**T**	(1561) Bartholomeo Pitiscus (1942) Karen Keskulla Uhlenbeck	 RM163
	25	**F**	(1561) Philip Van Lansberge (1844) Thomas Muir	 RM199
	26	**S**	(1728) Johann Heinrich Lambert (1875) Giuseppe Vitali (1965) Marcus Peter Francis du Sautoy	
	27	**S**	(1858) Giuseppe Peano	RM067
35	**28**	**M**	(1796) Irénée Jules Bienaymé (1862) Roberto Marcolongo	 RM187
	29	**T**	(1904) Leonard Roth	
	30	**W**	(1703) Giovanni Ludovico Calandrini (1856) Carle David Tolmé Runge (1906) Olga Taussky-Todd	RM186 RM139
	31	**T**	(1821) Hermann Ludwig Ferdinand von Helmholtz (1885) Herbert Westren Turnbull	RM211

August

Putnam 2008, B2

Let $F_0(x) = \ln x$. For $n \geq 0$ and $x > 0$, let $F_{n+1}(x) = \int_0^x F_n(t)dt$. Evaluate

$$\lim_{n\to\infty} \frac{n! F_n(1)}{\ln n}.$$

The Wonderful World of Statistics

Every day, innumeracy affects 8 out of 5 people.

Not Exactly a Horoscope

The Sun enters Leo on the 11th; people born in this period are proud of having never read a horoscope with a good guess.

There are very few theorems in advanced analysis which have been demonstrated in a logically tenable manner. Everywhere one finds this miserable way of concluding from the special to the general and it is extremely peculiar that such a procedure has led to so few of the so-called paradoxes.

Niels Henrik Abel

When mathematicians started working with prime numbers, they never imagined that primes could have any application in the real world, but they now have become of central importance, especially in cryptography — the science of encryption.

Manjul Bhargava

The abstract teaching of mathematics leads to distrust of approximation, which is reality, to adore the idol of perfection, which is illusory. It is necessary to bring theory to experience, science to applications at every step. In this way we will avoid losing that sense of reality which is so necessary in life and in science.

Guido Castelnuovo

The measure of our intellectual capacity is the ability to feel less and less satisfied with our answers to ever more complicated problems.

C. West Churchman

The successful development of science requires a proper balance to be maintained between the method of building up from observations and the method of deducing by pure reasoning from speculative assumptions.

Paul Adrien Maurice Dirac

To exist (in mathematics), said Henri Poincaré, is to be free from contradiction. But mere existence does not guarantee survival. To survive in mathematics requires a kind of vitality that cannot be described in purely logical terms.

Mark Kac

	1	**F**	(1647) Giovanni Ceva (1659) Joseph Saurin (1835) William Stanley Jevons	RM203
	2	**S**	(1878) Mauriche René Frechet (1923) René Thom	 RM080
	3	**S**	(1814) James Joseph Sylvester (1884) Solomon Lefschetz (1908) Lev Semenovich Pontryagin	RM104
36	**4**	**M**	(1809) Luigi Federico Menabrea	RM150
	5	**T**	(1667) Giovanni Girolamo Saccheri (1725) Jean-Étienne Montucla	RM128
	6	**W**	(1859) Boris Jakovlevich Bukreev (1863) Dimitri Aleksandrovich Grave	
	7	**T**	(1707) George Louis Leclerc Comte de Buffon (1948) Cheryl Elisabeth Praeger (1955) Efim Zelmanov	
	8	**F**	(1584) Gregorius Saint-Vincent (1588) Marin Mersenne	 RM092
	9	**S**	(1860) Frank Morley (1914) Marjorie Lee Browne	
	10	**S**	(1839) Charles Sanders Peirce	RM123
37	**11**	**M**	(1623) Stefano degli Angeli (1798) Franz Ernst Neumann (1877) Sir James Hopwood Jeans	 RM224
	12	**T**	(1891) Antoine André Louis Reynaud (1894) Dorothy Maud Wrinch (1900) Haskell Brooks Curry	 RM260 RM212
	13	**W**	(1873) Constantin Carathéodory (1885) Wilhelm Johann Eugen Blaschke	
	14	**T**	(1858) Henry Burchard Fine (1891) Ivan Matveevich Vinogradov	
	15	**F**	(973) Abu Arrayhan Muhammad Ibn Ahmad Al'Biruni (1886) Paul Pierre Levy	RM164
	16	**S**	(1494) Francisco Maurolico (1736) Johann Nikolaus Tetens	
	17	**S**	(1743) Marie Jean Antoine Nicolas de Caritat de Condorcet (1826) Georg Friedrich Bernhard Riemann	RM176 RM068
38	**18**	**M**	(1752) Adrien-Marie Legendre	RM140
	19	**T**	(1749) Jean-Baptiste Delambre	
	20	**W**	(1842) Alexander Wilhelm von Brill (1861) Frank Nelson Cole	
	21	**T**	(1899) Juliusz Pawel Schauder (1917) Phyllis Nicolson	
	22	**F**	(1765) Paolo Ruffini (1769) Louis Puissant (1803) Jaques Charles Francois Sturm	RM116
	23	**S**	(1768) William Wallace (1900) David Van Dantzig	
	24	**S**	(1501) Girolamo Cardano (1625) Johan de Witt (1801) Michail Vasilevich Ostrogradski (1862) Winifred Edgerton Merrill (1945) Ian Nicholas Stewart	RM064 RM188 RM056 RM236
39	**25**	**M**	(1819) George Salmon (1888) Stefan Mazurkiewicz	
	26	**T**	(1688) Willem Jakob 's Gravesande (1854) Percy Alexander Macmahon (1891) Hans Reichenbach	
	27	**W**	(1855) Paul Émile Appell (1876) Earle Raymond Hedrick (1919) James Hardy Wilkinson	
	28	**T**	(1698) Pierre Louis Moreau de Maupertuis (1761) Ferdinand François Desiré Budan de Boislaurent (1873) Julian Lowell Coolidge	RM152
	29	**F**	(1540) François Viète (1561) Adriaan Van Roomen (1812) Adolph Gopel	RM200 RM200
	30	**S**	(1775) Robert Adrain (1829) Joseph Wolstenholme (1883) Ernst Hellinger (1891) Otto Yulyevich Schmidt	 RM248

Rudi Mathematici

September

Putnam 2008, B3

What is the largest possible radius of a circle contained in a 4-dimensional hypercube of side length 1?

The Wonderful World of Statistics

Statistics means never having to say you're certain.

Not Exactly a Horoscope

The Sun enters Virgo on the 17th; people born under this sign claim they will listen to astrologists when they start working out the equinoxes precession.

The development of new mathematical ideas tends to follow an ideal pattern. If mathematicians were to build a house, they would start with the walls on the ground floor, hovering unsupported two feet above the tarpaulin... or where the tarpaulin should have been. There would be no doors or windows, just holes of the right shape. Once we got to the first floor, the quality of the walls would be vastly improved, the interior walls would be plastered over, the doors and windows would all be in place, and the floor would be sturdy enough to walk on. The second floor would be large, well finished, full of carpets, with pictures on the walls, furniture galore, all beautiful even if the styles clash with each other, six different types of upholstery in every room... The attic, on the other hand, it would be sparse but elegant – minimalist design, nothing out of place, everything there with a very specific purpose. At this point, and only at this point, would the mathematicians go back downstairs, dig the foundation, fill it with concrete, put in the tarpaulin, and extend the walls down to the foundation. At the end of all this, you would have a house that would stand, but for most of its existence it would have seemed highly improbable. But the builders, all excited about growing the walls to the sky and decorating the interiors, would be too busy to notice until the building inspectors poked their noses into the structural holes.

Jack Cohen, Terry Pratchett, Ian Stewart

Infinity cannot be a number or something that has a number, because a number is countable, and therefore exhaustible. Furthermore, if infinity were an odd number, removing one of it would make the resulting number even, and still infinite; indeed if it were finite it could have only finite numbers as its parts. And similarly if infinity were an even number. But it cannot be both even and odd at the same time. Furthermore, if the infinite, after a unit has been removed if by chance it were odd, were divided into two equal parts, two infinite numbers would result; and going on like this, an infinite number could be divided into as many infinite numbers as we like.

Aristotle

The purpose of 'modern mathematics' is to encourage understanding of mathematics, rather than the blind manipulation of symbols. The true mathematician is not a juggler with numbers, but a juggler with concepts.

Ian Nicholas Stewart

The triangle no, I had not considered it,
I agree I'll try, geometry is not a crime.

Renato Zero

October

	1	**S**	(1671) Luigi Guido Grandi	RM177
			(1898) Bela Kerekjarto'	
			(1912) Kathleen Timpson Ollerenshaw	
40	**2**	**M**	(1825) John James Walker	
			(1908) Arthur Erdélyi	
	3	**T**	(1944) Pierre René Deligne	
	4	**W**	(1759) Louis Francois Antoine Arbogast	
			(1797) Jerome Savary	
	5	**T**	(1732) Nevil Maskelyne	
			(1781) Bernhard Placidus Johann Nepomuk Bolzano	RM117
			(1861) Thomas Little Heath	
	6	**F**	(1552) Matteo Ricci	RM141
			(1831) Julius Wilhelm Richard Dedekind	RM081
			(1908) Sergei Lvovich Sobolev	
	7	**S**	(1885) Niels Bohr	RM063
	8	**S**	(1908) Hans Arnold Heilbronn	
41	**9**	**M**	(1581) Claude Gaspard Bachet de Meziriac	RM201
			(1704) Johann Andrea von Segner	
			(1873) Karl Schwarzschild	RM153
			(1949) Fan Rong K Chung Graham	RM110
	10	**T**	(1731) Henry Cavendish	RM273
			(1861) Heinrich Friedrich Karl Ludwig Burkhardt	
	11	**W**	(1675) Samuel Clarke	
			(1777) Barnabè Brisson	
			(1881) Lewis Fry Richardson	
			(1885) Alfred Haar	
			(1910) Cahit Arf	RM261
	12	**T**	(1860) Elmer Sperry	
	13	**F**	(1890) Georg Feigl	
			(1893) Kurt Werner Friedrich Reidemeister	
			(1932) John Griggs Thomson	
	14	**S**	(1687) Robert Simson	
			(1801) Joseph Antoine Ferdinand Plateau	
			(1868) Alessandro Padoa	
	15	**S**	(1608) Evangelista Torricelli	RM165
			(1735) Jesse Ramsden	
			(1776) Peter Barlow	
			(1931) Eléna Wexler-Kreindler	
42	**16**	**M**	(1879) Philip Edward Bertrand Jourdain	
	17	**T**	(1759) Jacob (II) Bernoulli	RM093
			(1888) Paul Isaac Bernays	
	18	**W**	(1945) Margaret Dusa Waddington Mcduff	RM249
	19	**T**	(1903) Jean Frédéric Auguste Delsarte	
			(1910) Subrahmanyan Chandrasekhar	RM153
	20	**F**	(1632) Sir Christopher Wren	RM105
			(1863) William Henry Young	
			(1865) Aleksandr Petrovich Kotelnikov	
	21	**S**	(1677) Nicolaus (I) Bernoulli	RM093
			(1823) Enrico Betti	RM150
			(1855) Giovan Battista Guccia	RM129
			(1893) William Leonard Ferrar	
			(1914) Martin Gardner	RM137
	22	**S**	(1587) Joachim Jungius	RM285
			(1895) Rolf Herman Nevanlinna	
			(1907) Sarvadaman Chowla	
43	**23**	**M**	(1865) Piers Bohl	
	24	**T**	(1804) Wilhelm Eduard Weber	
			(1873) Edmund Taylor Whittaker	
	25	**W**	(1811) Évariste Galois	RM069
	26	**T**	(1849) Ferdinand Georg Frobenius	
			(1857) Charles Max Mason	
			(1911) Shiing-Shen Chern	
	27	**F**	(1678) Pierre Remond de Montmort	
			(1856) Ernest William Hobson	
	28	**S**	(1804) Pierre François Verhulst	
	29	**S**	(1925) Klaus Roth	
44	**30**	**M**	(1906) Andrej Nikolaevich Tichonov	
			(1946) William Paul Thurston	RM237
	31	**T**	(1711) Laura Maria Caterina Bassi	RM189
			(1815) Karl Theodor Wilhelm Weierstrass	RM057
			(1935) Ronald Lewis Graham	RM110

Putnam 2008, B4

Let p be a prime number. Let $h(x)$ be a polynomial with integer coefficients such that $h(0)$, $h(1)$, …, $h(p^2-1)$ are distinct modulo p^2. Show that $h(0)$, $h(1)$, …, $h(p^3-1)$ are distinct modulo p^3.

The Wonderful World of Statistics

If you want three opinions, just ask two statisticians.

Not Exactly a Horoscope

The Sun enters Libra on the 30th; people born in this period claim there should be more planets, which cannot but leave the astrologists quite perplexed.

Macroscopic objects, as we see them all around us, are governed by a variety of forces, derived from a variety of approximations to a variety of physical theories. In contrast, the only elements in the construction of black holes are our basic concepts of space and time. They are, thus, almost by definition, the most perfect macroscopic objects there are in the universe.

Subrahmanyan Chandrasekhar

I see it, but I don't believe it.

Julius Wilhelm Richard Dedekind

The greatest unsolved theorem in mathematics is why some people are better at it than others.

Adrian Mathesis

The analysts try in vain to conceal the fact that they do not deduce: they combine, they compose ... when they do arrive at the truth they stumble over it after groping their way along.

Évariste Galois

[Ockham's Razor:]
Frustra fit per plura, quod fieri potest per pauciora.
It is vain to do with more what can be done with less.
or
Essentia non sunt multiplicanda praeter necessitatem.
Entities should not be multiplied unnecessarily.

William of Ockham

Many have argued that a vacuum does not exist, others claim it exists only with difficulty in spite of the repugnance of nature; I know of no one who claims it easily exists without any resistance from nature.

Evangelista Torricelli

When I wrote this, only God and I understood what I was doing. Now, God only knows.

Karl Theodor Wilhelm Weierstrass

The secret of architectural excellence is to translate the proportions of a dachshund into bricks, mortar and marble.

Sir Christopher Wren

November

	1	**W**	(1535) Giambattista della Porta	RM226
	2	**T**	(1815) George Boole	RM094
			(1826) Henry John Stephen Smith	
	3	**F**	(1867) Martin Wilhelm Kutta	
			(1878) Arthur Byron Coble	
			(1896) Raymond Louis Wilder	
			(1906) Carl Benjamin Boyer	
	4	**S**	(1744) Johann (III) Bernoulli	RM093
			(1865) Pierre Simon Girard	
	5	**S**	(1848) James Whitbread Lee Glaisher	
			(1930) John Frank Adams	
45	**6**	**M**	(1906) Emma Markovna Trotskaia Lehmer	RM215
	7	**T**	(1867) Maria Skłodowska Curie	RM182
			(1660) Thomas Fantet de Lagny	
			(1799) Karl Heinrich Graffe	
			(1878) Lise Meitner	RM238
			(1898) Raphael Salem	
	8	**W**	(1656) Edmond Halley	RM190
			(1781) Giovanni Antonio Amedeo Plana	RM154
			(1846) Eugenio Bertini	
			(1848) Friedrich Ludwig Gottlob Frege	RM274
			(1854) Johannes Robert Rydberg	
			(1869) Felix Hausdorff	RM178
	9	**T**	(1847) Carlo Alberto Castigliano	RM202
			(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	**F**	(1829) Helwin Bruno Christoffel	
	11	**S**	(1904) John Henry Constantine Whitehead	
	12	**S**	(1825) Michail Egorovich Vashchenko-Zakharchenko	
			(1842) John William Strutt Lord Rayleigh	
			(1927) Yutaka Taniyama	
46	**13**	**M**	(1876) Ernest Julius Wilkzynsky	
			(1878) Max Wilhelm Dehn	
	14	**T**	(1845) Ulisse Dini	
			(1919) Paulette Libermann	
			(1975) Martin Hairer	RM189
	15	**W**	(1688) Louis Bertrand Castel	
			(1793) Michel Chasles	
			(1794) Franz Adolph Taurinus	
	16	**T**	(1835) Eugenio Beltrami	RM262
	17	**F**	(1597) Henry Gellibrand	
			(1717) Jean-Baptiste Le Rond D'Alembert	RM166
			(1790) August Ferdinand Möbius	RM118
	18	**S**	(1872) Giovanni Enrico Eugenio Vacca	
			(1927) Jon Leslie Britton	
	19	**S**	(1894) Heinz Hopf	
			(1900) Michail Alekseevich Lavrentev	
			(1901) Nina Karlovna Bari	RM214
47	**20**	**M**	(1889) Edwin Powell Hubble	
			(1924) Benoît Mandelbrot	
			(1963) William Timothy Gowers	
	21	**T**	(1867) Dimitri Sintsov	
	22	**W**	(1803) Giusto Bellavitis	
			(1840) Émile Michel Hyacinthe Lemoine	
	23	**T**	(1616) John Wallis	RM070
			(1820) Issac Todhunter	
			(1917) Elizabeth Leonard Scott	RM106
	24	**F**	(1549) Duncan Maclaren Young Sommerville	
			(1909) Gerhard Gentzen	
	25	**S**	(1841) Fredrich Wilhelm Karl Ernst Schröder	
			(1873) Claude Louis Mathieu	
			(1943) Evelyn Merle Roden Nelson	
	26	**S**	(1894) Norbert Wiener	RM172
			(1946) Enrico Bombieri	
48	**27**	**M**	(1867) Arthur Lee Dixon	
	28	**T**	(1898) John Wishart	
	29	**W**	(1803) Christian Andreas Doppler	RM250
			(1849) Sir Horace Lamb	
			(1879) Nikolay Mitrofanovich Krylov	RM286
	30	**T**	(1549) Sir Henry Savile	
			(1969) Matilde Marcolli	RM142

Putnam 2008, B5

Find all continuously differentiable functions $f: R \to R$ such that for every rational number q, the number $f(q)$ is rational and has the same denominator as q. (The denominator of a rational number q is the unique positive integer b such that $q = a/b$ for some integer a with $\gcd(a, b) = 1$.) (Note: gcd means greatest common divisor.)

The Wonderful World of Statistics

Numbers are like people; torture them enough and they'll tell you anything.

Not Exactly a Horoscope

The Sun enters Scorpio on the 24th, people born in this period deny, and claim to be born later.
The Sun enters Ophiuchus on the 30th, people born in this period are envied from all others, because when they say "Ophiuchus" the astrologists fall silent.

We can be ecstatic when a piece of music moves in an unexpected harmonic direction that later seems perfectly appropriate, or when an orchestral texture seems to be more than the sum of the various voices in a way we fail to fully understand. Mathematical proofs can provide a similar pleasure with sudden revelations, unexpected yet natural ideas, and fascinating feelings that there is something more to discover.

William Timothy Gowers

Mathematics is a display of audacity of pure ratio; one of the few luxuries still possible today. Even philologists often devote themselves to activities in which they themselves do not see the slightest profit, and collectors of stamps or ties even worse. But these are harmless pastimes, far removed from the serious stuff of life. Mathematics, on the other hand, embraces some of the most exciting and incisive adventures of human existence.

Robert Musil

Mathematics is too arduous and uninviting a field to appeal to those to whom it does not give great rewards. These rewards are of exactly the same character as those of the artist. To see a difficult uncompromising material take living shape and meaning is to be Pygmalion, whether the material is stone or hard, stonelike logic. To see meaning and understanding come where there has been no meaning and no understanding is to share the work of a demiurge. No amount of technical correctness and no amount of labour can replace this creative moment, whether in the life of a mathematician or of a painter or musician. Bound up with it is a judgement of values, quite parallel to the judgement of values that belongs to the painter or the musician. Neither the artist nor the mathematician may be able to tell you what constitutes the difference between a significant piece of work and an inflated trifle; but if he is not able to recognise this in his own heart, he is no artist and no mathematician.

Norbert Wiener

	1	**F**	(1792) Nikolay Yvanovich Lobachevsky RM083 (1847) Christine Ladd-Franklin
	2	**S**	(1831) Paul David Gustav du Bois-Reymond (1869) Dimitri Fedorovich Egorov RM214 (1901) George Frederick James Temple
	3	**S**	(1903) Sidney Goldstein (1924) John Backus
49	**4**	**M**	(1795) Thomas Carlyle
	5	**T**	(1868) Arnold Johannes Wilhelm Sommerfeld RM275 (1901) Werner Karl Heisenberg RM155 (1907) Giuseppe Occhialini RM122
	6	**W**	(1682) Giulio Carlo Fagnano dei Toschi
	7	**T**	(1823) Leopold Kronecker RM239 (1830) Antonio Luigi Gaudenzio Giuseppe Cremona RM150 (1924) Mary Ellen Rudin
	8	**F**	(1508) Regnier Gemma Frisius (1865) Jaques Salomon Hadamard RM263 (1919) Julia Bowman Robinson RM227
	9	**S**	(1883) Nikolai Nikolaievich Luzin RM214 (1906) Grace Brewster Murray Hopper (1917) Sergei Vasilovich Fomin
	10	**S**	(1804) Karl Gustav Jacob Jacobi RM251 (1815) Augusta Ada King Countess Of Lovelace RM059
50	**11**	**M**	(1882) Max Born RM155
	12	**T**	(1832) Peter Ludwig Mejdell Sylow (1913) Emma Castelnuovo RM191
	13	**W**	(1724) Franz Ulrich Theodosius Aepinus (1887) George Pólya RM131
	14	**T**	(1546) Tycho Brahe
	15	**F**	(1802) János Bolyai RM083 (1923) Freeman John Dyson
	16	**S**	(1804) Wiktor Yakovievich Bunyakowsky
	17	**S**	(1706) Gabrielle Émilie Le Tonnelier de Breteuil du Châtelet (1835) Felice Casorati (1842) Marius Sophus Lie (1900) Dame Mary Lucy Cartwright
51	**18**	**M**	(1856) Joseph John Thomson RM161 (1917) Roger Lyndon (1942) Lenore Blum
	19	**T**	(1783) Charles Julien Brianchon (1854) Marcel Louis Brillouin (1887) Charles Galton Darwin RM138
	20	**W**	(1494) Oronce Fine (1648) Tommaso Ceva RM203 (1737) Tommaso Valperga di Caluso RM287 (1875) Francesco Paolo Cantelli
	21	**T**	(1878) Jan Łukasiewicz (1921) Edith Hirsch Luchins (1932) John Robert Ringrose
	22	**F**	(1824) Francesco Brioschi RM150 (1859) Otto Ludwig Hölder (1877) Tommaso Boggio (1887) Srinivasa Aiyangar Ramanujan
	23	**S**	(1872) Georgii Yurii Pfeiffer
	24	**S**	(1822) Charles Hermite RM095 (1868) Emmanuel Lasker RM167
52	**25**	**M**	(1642) Isaac Newton RM071 (1900) Antoni Zygmund
	26	**T**	(1780) Mary Fairfax Greig Somerville (1791) Charles Babbage RM059 (1937) John Horton Conway RM119
	27	**W**	(1571) Johannes Kepler (1654) Jacob (Jacques) Bernoulli RM093
	28	**T**	(1808) Louis Victoire Athanase Dupré (1882) Arthur Stanley Eddington RM179 (1903) John von Neumann RM107
	29	**F**	(1856) Thomas Jan Stieltjes
	30	**S**	(1897) Stanislaw Saks
	31	**S**	(1872) Volodymyr Levitsky (1896) Carl Ludwig Siegel (1945) Leonard Adleman RM143 (1952) Vaughan Frederick Randall Jones

Rudi Mathematici

December

Putnam 2008, B6

Let n and k be positive integers. Say that a permutation σ of $\{1, 2, \ldots, n\}$ is k-limited if $|\sigma(i)-i| \le k$ for all i. Prove that the number of k-limited permutations of $\{1, 2, \ldots, n\}$ is odd if and only if $n \equiv 0$ or $1 \pmod{2k+1}$.

The Wonderful World of Statistics

Lottery: A tax on the statistically-challenged.

Not Exactly a Horoscope

The Sun enters Sagittarius on the 18th, people born in this period talk a lot of the advantages of the astrologists, but till now they haven't said a thing.

Eadem mutata resurgo
Though changed I shall rise the same
[Inscribed on his tomb in the Münster, Basel, with a equiangular spiral, in imitation of Archimedes.]

Jacob Bernoulli

Since 0×0=0 and 1×1=1, it follows that there are numbers which are the squares of themselves. But then it also follows that there are numbers. In a single step of banal simplicity, it would appear that we have advanced from a piece of elementary arithmetic to an astonishing and highly controversial philosophical conclusion: that numbers exist. You would have thought it would be more difficult.

A.W. Moore

The primary aim of all investigations of the external world should be to discover the rational order and harmony which have been imposed upon it by God, and which He has revealed to us in the language of mathematics.

Johannes Kepler

The traditional math teacher in popular stories is distracted. He usually appears in public with a broken umbrella in each hand. He prefers to face the blackboard and turn his back to the class. He writes a, says b, means c; but it should be d. Some of the things he says are passed down from generation to generation:
- To solve this differential equation one must observe it until a solution appears.
- This principle is so perfectly general that no particular application of it is possible.
- Geometry is the science of correct reasoning about incorrect figures.
- My method to overcome a difficulty is to go around it.
- What is the difference between method and trick? A method is a trick you use twice.

George Polya

Mr. Fortune found theology to be a much more accommodating subject than mathematics; his exposure technique allowed greater tolerance. For example, when one is confused about something there is always the moral to fall back on. You can also make comparisons, cite leading cases, analyze types and pretypes and introduce anecdotes. Except for Archimedes, mathematics is singularly devoid of anecdote.

Sylvia Townsend Warner