

1. The tetrahedron, cube, octahedron, dodecahedron, and icosahedron compose what group of regular solids in which every face is the same regular polygon and all the sides meet at the same angles at each vertex and all the faces meet at the same angles at each edge
 - A. Aristotelian Solids
 - B. Euclidean Solids
 - C. Platonic Solids
 - D. Socratic Solids
 - E. NOTA

2. What Indian mathematician is known for his work in astronomy culminating in the 628 work *Brahmasphutasiddhanta*? He also has a namesake formula for the area of a cyclic quadrilateral.
 - A. Aryabhata
 - B. Paramesvara
 - C. Bhaskara
 - D. Brahmagupta
 - E. NOTA

3. What civilization utilized a device known as the *yupana*, a Fibonacci number based grid that was used to conduct tribute, taxes, accounting, and trade? This civilization communicated through the use of knotted strings known as *quipu*.
 - A. Inca
 - B. Maya
 - C. Aztec
 - D. Navajo
 - E. NOTA

4. The Nine Halls Diagram is the Chinese representation of what mathematical object? Other famous depictions of these types of objects include one in the Parshvanatha temple and the Sagrada Familia.
 - A. Magic Square
 - B. Sierpinski's Triangle
 - C. Lemniscate
 - D. Limacon of Pascal
 - E. NOTA

5. What hub of ancient mathematics hosted people like Euclid, Hypatia, and Pappus? A library in this city was set ablaze in 48 BC, destroying many works.
 - A. Athens
 - B. Rome
 - C. Cyrene
 - D. Perga
 - E. NOTA

6. Consisting of four Merton College mathematicians, the Calculators from what university provided a deeper understanding into kinematics and dynamics and were also the first to state the mean speed theorem?
 - A. Cambridge
 - B. Harvard
 - C. Imperial College London
 - D. Oxford
 - E. NOTA

7. Rivaling Diophantus for the title of Father of Algebra, what Arab mathematician popularized the word for algebra and is the author of *Kitab al-jabr*
- A. Banu Musa B. al-Khwarizmi C. al-Tabari D. al-Kashi E. NOTA
8. What author of the 1299 book *Suanxue qimeng* and the 1303 book *Siyuan yijian* used the “method of the celestial unknown” to work with polynomials with four variables?
- A. Yang B. Ruan C. Zhu D. Qin E. NOTA
Hui Yuan Shijie Jiushao
9. Michael Maestlin gave the first known decimal calculation of what “aesthetically pleasing” value in 1597? Robert Simson is credited with identifying the value as the limit of the ratio between consecutive Fibonacci.
- A. Pi B. Phi C. Tau D. Gamma E. NOTA
10. What author of the 1637 work *La Geometrie* connected geometry to algebra? The work led to the development of analytic geometry.
- A. Rene B. Frans C. Nicolas D. Florimond E. NOTA
Descartes van Schooten Oresme de Beaune
11. What Flemish geographer not only coined the term “atlas” for a collection of maps, but also perfected a type of projection?
- A. Cesar B. Johann C. Gerardus D. James E. NOTA
Cassini Kruger Mercator Gall
12. What Dutch mathematician patented the first pendulum clock, increasing the accuracy of time measurement, and also proved the cycloid is tautochronous?
- A. Christiaan B. John C. Simon D. John E. NOTA
Huygens Pell Stevin Wallis
13. Under the pseudonym M. LeBlanc, what mathematician published her work under an alias to prevent discrimination? Joseph-Louis Lagrange eventually became this woman’s sponsor and she went on to attempt to solve Fermat’s Last Theorem.
- A. Sofya B. Emmy C. Julia D. Maria E. NOTA
Kovalevskaya Noether Robinson Agnesi

14. The correspondence of Blaise Pascal and Pierre de Fermat is generally understood as the foundation of probability. What problem initially spurred this correspondence?
- A. Problem of Points B. Monty Hall Problem C. Buffon's Needle D. Birthday Problem E. NOTA
15. What clergyman's theory of probability rivals the frequentist approach and names a powerful theorem in conditional probability?
- A. Marin Mersenne B. Richard Price C. James Stirling D. Thomas Bayes E. NOTA
16. The Bernoulli family included famous scientists, engineers, and mathematicians, spanning over multiple generations. What Swiss city were they based out of? This city also names the summation of inverse squares problem.
- A. Zurich B. Basel C. Geneva D. Lausanne E. NOTA
17. Janos Bolyai, known as one of the pioneers of non-Euclidean geometry, was regarded as a "genius of the first order," by what "prince of mathematics?"
- A. Carl Gauss B. Leonhard Euler C. Wilhelm Weber D. Farkas Bolyai E. NOTA
18. In 1854, what mathematician published *An Investigation Into the Laws of Thought, on Which are Founded The Mathematical Theories of Logic and Probabilities*, which approached logic by reducing it to simple algebra. This type of approach is known as his namesake type of algebra.
- A. Sophus Lie B. William Clifford C. Charles Peirce D. George Boole E. NOTA
19. What Russian mathematician is known as the founder of set theory and put forth the concepts of transfinite numbers?
- A. Georg Cantor B. Andrey Kolmogorov C. Pafnuty Chebyshev D. Andrey Markov E. NOTA

20. Known for applying mathematics to problems in biology, what scientist contributed to modern statistics by developing the correlation coefficient and the chi-square test?
- A. Francis Galton B. Charles Spearman C. Maurice Kendall D. Karl Pearson E. NOTA
21. What English mathematician is known to have originated the modern analytic computer with such feats as inventing the principle of the analytical engine? His work was later expanded upon by Ada Lovelace.
- A. Charles Babbage B. Alan Turing C. Isaac Newton D. G. Hardy H. E. NOTA
22. At the 1900 International Congress of Mathematicians in Paris, what mathematician announced his 23 problems? His enthusiasm for solving problems is heard in his quote, "We must know, we shall know."
- A. David Hilbert B. Edmund Landau C. Bernard Riemann D. Henri Poincare E. NOTA
23. The foundations of chaos theory can be linked to a prize competition held by King Oscar II of what country? Scientists from this country include Gosta Mittag-Leffler, Carl Linnaeus, and Alfred Nobel.
- A. Norway B. Denmark C. Sweden D. Finland E. NOTA
24. What French mathematician's work *How Long Is The Coast of Britain* popularized the Coastline Paradox and understanding of fractal geometry?
- A. Gaston Julia B. Girard Drarig C. Pierre Erreip D. Benoit Mandelbrot E. NOTA
25. A group of foreign researchers known as The Martians, composed of Theodore von Karman, John von Neumann, Leo Szilard, Edward Teller and Eugene, were from what country?
- A. Hungary B. Romania C. Germany D. Norway E. NOTA

26. What is the term for the The Manhattan Project developed method, named for a casino where one of its inventor's uncle gambled, that simulated results of an experiment using a broad set of random numbers?
- A. Bellagio B. MGM Grand C. Caesars Palace D. Monte Carlo E. NOTA
27. What Canadian mathematician's namesake "program" is an attempt to relate number theory, automorphic forms, and representation theory. It is widely seen as the biggest project in contemporary mathematics research.
- A. Jesse Douglas B. Robert Langlands C. Felix Klein D. Justin Weil E. NOTA
28. Located in Peterborough, New Hampshire, what organization is known for its Millennium Prize Problems?
- A. Max Planck Institute B. Hanover Foundation C. Euler Academy D. Center of Advanced Research E. NOTA
29. One of the pioneers of Las Vegas gambling and Wall Street trading, what professor is known for his theoretical work on blackjack and, with Claude Shannon, inventing the first wearable computer?
- A. Daniel Smith B. Edward Thorp C. Benjamin Graham D. Peter Lynch E. NOTA
30. Founded by George Woltman in 1996, what online organization is dedicated to the discovery of prime numbers?
- A. PIMPS B. WIMPS C. GIMPS D. LIMPS E. NOTA