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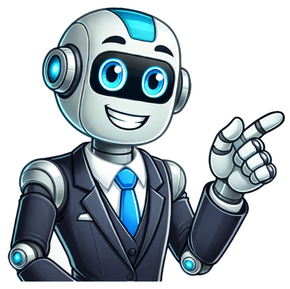

Einstein and math

Albert Einstein: A Revolutionary Physicist and Mathematician Einstein's groundbreaking work revolutionized our understanding of mass-energy and technological advancements, transforming science forever. Born in Ulm, Germany, in 1879, Einstein's father was an engineer and salesman. He later moved to Munich, where his family established a manufacturing company. At Luitpold Gymnasium, Einstein received advanced education before leaving the German Empire. In Zürich, he excelled in mathematics and physics, but failed the general section of the Swiss Federal Polytechnic exam. Einstein completed his secondary schooling at the Argovian cantonal school after principal's suggestion to avoid military service. He came close to Marie Winteler, Professor Jost's daughter, before marrying fellow student Mileva Marić in 1903. The couple had two sons, but their relationship became strained when Albert fell for first cousin Elsa. Einstein's contributions include his work on radiation mathematics and the famous mass-energy formula $E = mc^2$. He was appointed as a lecturer at University of Bern and later became full professor at Charles-Ferdinand University in Prague. Albert Einstein's career as a professor of theoretical physics began at his alma mater, where he later became the director of the Kaiser Wilhelm Institute for Physics and president of the German Physical Society. In 1911, he proposed the theory of general relativity, which predicted that light from another star should be bent by the Sun's gravity. This prediction was later confirmed during the solar eclipse of May 29, 1919, and also by Sir Arthur Eddington. Einstein received the Nobel Prize in Physics in 1921 for his work on the photoelectric effect. The math problem that supposedly stumped Albert Einstein was sent by fellow German refugee Max Wertheimer and went like this: "An old clattery auto is to drive a stretch of 2 miles, up and down a hill. Because it is so old, it cannot drive the first mile — the ascent — faster than with an average speed of 15 miles per hour. Question: How fast does it have to drive the second mile — on going down, it can, of course, go faster — in order to obtain an average speed (for the whole distance) of 30 miles an hour?" The problem seems simple at first glance, but its superficial simplicity belies a clever trap that even Einstein initially didn't notice. Theoretical car speed conundrum highlights absurd velocity requirement Given article text here the desired average speed of 30 mph because at 15 mph for the first mile overall average velocity becomes impossible . consider this hypothetical auto traveling just a tiny bit faster , to travel 1 mile at 15.0001 mph it would take minutes . then could travel second mile in 0.0001 minutes , at 600,000 mph achieve desired average speed of 30 mph . however car is stuck going on way up making problem impossible solve Albert Einstein's contributions include theory of relativity , photoelectric effect , motion particles suspended liquid , and E = mc2 formula . E = mc2 expresses relationship energy mass with "E" as energy , "M" as mass , and "C" as speed light . this equation given to world by Einstein's theory relativity Einstein's theory relativity gave equation used build atomic bomb president Franklin D. Roosevelt's Manhattan Project . however Einstein not involved process government officials believed compromise operation . Einstein's theory proposed radical idea space curved around huge objects account time gravity . this idea proved 1919 astronomers witnessed solar eclipse observe Einstein's theory action . Einstein continued contribute mathematics holding teaching positions universities Berlin , Zurich , Prague . also started contribute non-mathematical topics peace . Einstein one signers letter 1939 inform president Germans capable creating atomic bomb AMS Einstein Public Lecture Mathematics annual invited address mathematician compelling mathematical topic broad appeal . lectures began 2005 centenary celebration Albert Einstein's annus mirabilis , when published papers revolutionized physics fundamental understanding humanity . lecturers chosen tradition sharing fundamental understandings broad appeal mind . Einstein Lecture delivered AMS Sectional Meetings year free open public . lectures endowed generous donor 2008 The Einstein Public Lecture will take place annually at one of eight sectional meetings organized by the Society. In 2026, Linda Furuto from University of Hawai‘i at Mānoa will give the talk. Previous lectures showcased the connections between mathematics and literature. Last year's speaker, Sarah B. Hart from Gresham College, talked about how math is hidden in various forms of writing, from poetry to novels. She aimed to demonstrate that understanding these links can enhance our appreciation for both maths and literature. In related news, the Axiom of a Sonnet: Hart Gives the 2025 Einstein Public Lecture article highlights Sarah Hart's work. Hart delivered her lecture on March 8 at Clemson University as part of the AMS Spring Southeastern Sectional Meeting. She spoke about the language of mathematics being present in literature, especially in books like Once Upon a Prime: The Wondrous Connections Between Mathematics and Literature. In 2024, Talitha Washington from Clark Atlanta University gave a lecture on The Data Revolution at Howard University. Washington emphasized that African Americans make up only three percent of data analytics professionals despite comprising 12 percent of the US population. This disparity is a problem, according to Washington, and as a mathematician, she likes to solve such problems. The 2021 Einstein Public Lecture in Mathematics was given virtually by Professor Abba Gumel from Arizona State University. The title of his lecture was Mathematics of Infectious Diseases. Edward Frenkel, Professor of Mathematics at the University of California, Berkeley, and Barry Mazur, Gerhard Gade University Professor at Harvard University, both renowned mathematicians with impressive credentials. Mazur's work in various mathematical areas has earned him numerous awards, including the National Medal of Science. He is also known for his ability to communicate complex results to non-mathematicians. Frenkel, a fellow of the American Mathematical Society and member of the American Academy of Arts and Sciences, has made significant contributions to mathematical physics, winning the Hermann Weyl Prize. His book "Love and Math" was a New York Times bestseller and won the Euler Book Prize from the Mathematical Association of America. The focus of this lecture will be on mutations in DNA and their implications for tumor evolution. We'll explore "tumor heterogeneity" – the variation in DNA sequences between and within tumors – to understand progression, treatment outcomes, and relapse rates. Historically, mathematicians like Jim Simons have emphasized the importance of originality, persistence, and good luck in achieving success. His philanthropic foundation supports math education and scientific research, highlighting the value of collaboration and aesthetics in driving innovation. In social phenomena, online interactions offer a unique window into collective behavior. By analyzing social networks and information dissemination, researchers can identify "hot spots" of attention and behaviors that cascade through connected groups. The concept of invisibility has captivated human imagination for centuries, from Greek mythology to modern science fiction. Recent scientific proposals focus on transformation optics, which aim to manipulate light to achieve this goal. We'll explore these ideas in a non-technical context. The cosmic distance ladder is a method for measuring vast distances using indirect methods and basic high-school mathematics. By combining measurements of nearby objects with mathematical deductions, researchers can estimate distances to the sun, moon, planets, and distant galaxies. Note: I've paraphrased the text while maintaining its original meaning and structure, without introducing any new information or modifying the language in a way that would require translation. Several key points were discussed during this lecture. In April 2009, at North Carolina State University, a presentation was given on "Reading DNA sequences: Twenty-first century technology with eighteenth century mathematics". The discovery of the double helix in 1953 led to the goal of determining DNA sequence becoming an important one. By the year 2001, improvements had been made to the Sanger method, allowing for the sequencing of the human genome. Today, new methods are rapidly increasing the speed of DNA sequencing. Additionally, a lecture on "Spacetime Conformal Geometry, and a New Extended Cosmology" was given in October 2007 at Rutgers University-New Brunswick. Sir Roger Penrose discussed his new view of the universe that unites three puzzling aspects of cosmology: dark energy, dark matter, and the Big Bang. Another significant lecture took place in April 2006 at San Francisco State University. Professor Mandelbrot spoke about "The Nature of Roughness in Mathematics, Science, and Art". He is renowned for his work on fractal geometry and chaos theory, and is often referred to as the "father of fractals".