



Math Mole

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Quotes:

Obvious is the most dangerous word in mathematics. - E.T. Bell

Puzzles:

Not Enough Info?: Two mathematicians, Albert and Isaac, chat. Isaac says he has three children who all have the same birthday (but who weren't necessarily born in the same year). Albert asks their ages. Isaac replies, "The product of the ages of my children is 72." Albert points out that this is not enough information to determine their ages. Isaac responds with another clue – he tells Albert the sum of the ages of his children. But Albert again points out that there is not enough information. Finally Isaac says, "My youngest child is named Galileo." At last, Albert correctly determines the ages of Isaac's children. What are the ages?

The Impossible Problem: Two integers, n and m between 2 and 20, are chosen in secret. The sum $n + m$ is given to Mr. S and the product $n \cdot m$ is given to Mr. P. After a few minutes of silence, the following conversation then occurs:

Mr. S: I see no way for you to know the sum.

Mr. P: I know your sum.

Mr. S: I know your product.

What are the two numbers?

Mathematician of the Day



Kurt Gödel, Austria-Hungary, 1906-1978

- He was born April 28, 1906 in Brno, Austria-Hungary.
- By the end of high school, he had mastered university-level mathematics.
- Like Einstein, Gödel immigrated to the United States after the rise of the Nazi party and became a U.S. citizen. He was also a friend of Einstein's while at Princeton's Institute for Advanced Study.
- He is best known for his "Incompleteness Theorem" which basically says that for any axiomatic system there are still statements that cannot be proved or disproved. This denied the efforts of the time to systematize mathematics completely.
- Gödel was of a delicate mental disposition; he suffered a number of nervous breakdowns in his lifetime. Towards the end of his life, he became convinced that he was being poisoned, and by refusing to eat to avoid being poisoned, he essentially starved himself to death.

Info From: <http://www-history.mcs.st-andrews.ac.uk/Mathematicians/Gauss.html>

Career Spotlight: Economist

Job Description: Economists study the distribution of society's resources and goods, or the economy. This wide span of issues covered includes energy costs, inflation, interest and exchange rates, as well as business cycles and employment levels. Great emphasis is put on statistics in the form of accurate experimental design; sampling techniques and statistical inference can be an economist's best friend. Economists are employed in banking and accounting, the government, private sectors, and even the media.

Education: Although there are a few entry-level positions for those with a bachelor's degree, most positions require higher education. A master's degree or PhD is required for many private sector positions and to obtain more responsible positions. Those who wish to be economists must have good quantitative skills, as well as the ability to pay incredible attention to detail.

Work Conditions: Economists often work alone, preparing reports using such tools as statistical analysis and computer programs, but they can also be an integral part of a research team. Frequent travel is often necessary, as are overtime and dedication in general.

Salary: The average economist was paid between \$55,740 and \$103,500 in 2006. In 2007, the starting salary for those in possession of a bachelor's degree in economics was about \$35,752; for those with a PhD, the starting salary was about \$52,912. The average salary in the same year of those employed by the Federal Government was about \$94,098.

Job Outlook: The economist employment rate is expected to climb about 7% between 2006 and 2016, which is about average. The demand for those with skill in economics is expected to grow more rapidly; however, many of those people are employed in other fields that make use of their skills in economics and statistical analysis.

Source: <http://www.bls.gov/oco/ocos055.htm>