



Math Mole

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3rd Monday

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This issue

- Mathematician of the Day
- Puzzles
- Math Spotlight
- Today's Editor: Rachel
- Today's Spotlight: Nikki

Puzzles:

One: In the basement there are 3 light switches in the off position. Each switch controls 1 of 3 light bulbs on the floor above. You may move any of the switches, but you may only go up stairs one time. How can you determine which switch controls each light?

Two: Nine dots are arranged in a three by three square. Connect each of the nine dots using only four straight lines and without lifting your pen from the paper.

Three: When written forwards, this word is heavy. When written backwards, it's not. What's the word?

Mathematician of the Day



Kurt Friedrich Gödel - Austria-Hungary 1906-1978

Kurt Friedrich Gödel is one of the most notable logicians in history. He was born April 28, 1906 in Brno, Austria-Hungary. Gödel developed a method that converts formal expressions into a code of natural numbers called Gödel numbering. This method is known as Gödel's Incompleteness Theorem, which he completed just one year after earning his doctorate from the University of Vienna. Gödel developed two Incompleteness Theorems. The first states that any theory capable of expressing elementary arithmetic cannot be both consistent and complete; the second states that for any formal recursively enumerable theory, T , including basic arithmetical truths and also certain truths about formal provability, T includes a statement of its own consistency if and only if T is inconsistent. When Gödel went to his US citizenship hearing, he brought a friend, Albert Einstein, with him. The two had a legendary friendship at the Institute of Advanced Study towards the end of both of their lives.

Info From: http://en.wikipedia.org/wiki/Kurt_Gödel

Reading Assignment:

Read 4.4 and 4.5

Career Spotlight: Cryptologist

Cryptology is the study of message secrecy. In modern times, cryptography is considered to be a branch of both mathematics and computer science, and is affiliated closely with information theory, computer security, and engineering. However, it has been often been used in the aiding of espionage though out history. For example in WWII, the Navajos were employed by the government to teach their language as a form of cryptography. Although this code was not complex by cryptographic standards it was highly successful. Cryptography is also used in many applications encountered in everyday life; examples include security of ATM cards, computer passwords, and electronic commerce all depend on cryptography. Most cryptologists graduate with a bachelor in mathematics. Average yearly salary is \$41,760.