



# Math Mole

July 3, 2008

tHuRsDaY

Volume 4, No. 4

## This issue

- Mathematician of the Day
- Quotes
- Puzzles
- Today's Editors: John & Eddie
- Monday: Tim W. & Ellie

### Quote:

*If people do not believe that mathematics is simple, it is only because they do not realize how complicated life is.* – John Louis von Neumann

### Puzzles:

One: There are three doors labeled A, B, and C. One door has a million dollars behind it while the other two have nothing. After picking door A, door B is opened to show it contains nothing and you are asked if you want to switch doors. Should you switch? Why or Why not? What if there were  $n$  doors with only one containing a prize and after you picked one,  $n - 2$  other doors were opened to show they contained nothing? Would you switch?

Two: Train A sits in Station A and Train B sits in Station B. The stations are 57 miles apart. Train A leaves the station at 4:00 at a speed of 30 miles an hour for the first thirty minutes but is slowed by weather conditions to only 9 miles an hour for 45 minutes. It is then able to reach a speed of 33 miles an hour for the rest of the trip. How far did Train B have to travel to reach Station A?

## Mathematician of the Day



John Louis von Neumann

- Von Neumann was a child prodigy, dividing 8-digit numbers in his head by age 6. He was born December 28, 1903 in Budapest, Hungary, into a banking family.
- He wanted to use computers for solving specific math problems instead of more general applications like making tables. He was able to obtain reliable answers from unreliable computer components. He did the bulk of his work while at Princeton, and, in 1938, he was awarded the Bocher Prize in mathematics.
- Already diagnosed with cancer, he received the Medal of Freedom from President Eisenhower before passing away February 8, 1957.

Info From: ?

## Career Spotlight: Civil Engineers (a.k.a. Cement Freaks)

**Job Description:** Civil engineers design and supervise the construction of roads, buildings, airports, tunnels, dams, bridges, and water supply and sewage systems. They must consider many factors in the design process, from the construction costs and expected lifetime of a project to government regulations and potential environmental hazards such as earthquakes and hurricanes. Civil engineering, considered one of the oldest engineering disciplines, encompasses many specialties. The major ones are structural, water resources, construction, environmental, transportation, and geotechnical engineering. Many civil engineers hold supervisory or administrative positions, from supervisor of a construction site to city engineer. Others may work in design, construction, research, and teaching.

**Education:** A bachelors degree is required and some upper-level positions call for Masters degrees or even a PhD. All 50 states require a Civil Engineer to pass a test to earn a license and/or certification.

**Work Conditions:** Most Civil Engineers find work in large firms and work in a comfortable office environment, although they are periodically required to visit the site of what they are designing.

**Job Outlook:** Good. Grow as fast as average. Civil Engineers should see the largest increase in number of jobs, and Civil is currently the discipline of engineering with the highest number of employees in the United States. Many Civil Engineers find work for the Government.

**Salary:** \$46,420 to \$109,100. Average is \$75,230. Higher degree usually means higher pay.

Source: ?