Article from:

The Actuary

Six of these young geniuses, under the watchful eye of the Albert Einstein statue at the National Academy of Science Building, made up the U.S. team that took second place among 52 countries at the International Math Olympiad in Moscow. These eight top scorers in the USA Math Olympiad were honored in Washington, D.C. Joseph Applebaum (front row, far right) represented the SOA, one of the competition's sponsors. The students are (front row, L-R) Sergey Levin, Michail Sunitsky, Andrew Schultz, Akira Negi. (back row, L-R) Robert Kleinburg, Lenhard Ng, Wei-Hwa Huang, and Kiran Kedlaya.

Basketballs and ping pong balls

A reader seeks comments on the relative probabilities for success in what the National Basketball Association (NBA) calls the "lottery." The 11 teams who don't make the playoffs are thrown into a lottery to determine the order in which they will draft college players. The team with the worst record gets 11 ping pong balls; the next worst, 10 balls; and so on, down to one ball. The balls are identified by team and thrown into a hopper. One is randomly drawn, and that team gets first pick among available college players. The probability for any team is simple: divide the number of balls it is allotted by 66 (total).

So far, so good. But what is the probability of getting the second pick? It's important to know that any remaining balls of the first team chosen are not removed from the hopper. If one of these balls is chosen, it is discarded and the selection continues.

For example, if Minnesota (worst team this year, with 11 balls) were the first team chosen, then 65 balls remain. Each of the other 10 teams has a probability of being the second choice determined by the number of balls divided by 65. But is it? If the second ball chosen belongs to Minnesota, then it is discarded and probabilities are now the number of balls divided by 64, and so on.

What then is the probability of Team A being the second team chosen? This question can be subdivided: (1) given that no balls have been drawn yet or (2) given that A is not the first team (that is, just one ball has been drawn and it does not belong to A). Obviously, these are different questions.

The reader, who prefers to remain anonymous, says he only poses the question, but does not answer it. He leaves that up to "some enterprising readers."

Records are made to be broken

SOA Fellow Leonard F. Helfgott believes his son may be the youngest person known to have passed Exam 100. Mark Kinzer's nephew, Jim Rath, was 15 years old (see October 1991 *Actuary*), but Craig Helfgott took Exam 100 on May 12, 1992, two days before his 15th birthday. The proud father says Craig achieved a score of 10 on the exam, but envisions a career in nuclear physics, not actuarial science.

On the other hand, Jack Newman lays claim to the longest travel time from passing his first exam to becoming an ASA. He passed his first two actuarial exams in spring 1956, when he was a freshman at Cornell. He decided to major in physics and got his Ph.D. in mathematics. Years passed, he said, and while teaching,

he passed Part 2 (now Course 110). "More years passed," he said, "and I found myself unemployed. In January 1987, I was fortunate to obtain my first actuarial position and immediately began studying for my next exam. After passing three sets of exams ending in May 1988, I became an ASA, 32 years after sitting for and passing my first actuarial exam. Can anyone top this?"

Newman says he is happy with his new career and is studying for Fellowship exams.

Attention: Exam I-445 candidates

Several questions on the I-445 examination this November will be based on a long case study. Data for these questions were sent to all those registered for this examination. If you have not received the case study for Exam I-445, call the Society office at 708-706-3583.