Math Challenge Problem

for early October, 2013

Magic Memory Coin

You have a magic coin. Every day, the first time you flip the coin it will land heads up. The second time you flip the coin it will land tails up. Every time you flip the coin after that, the probability that the coin will land heads up is equal to the proportion of times the coin has landed heads up that day.

So for example, the probability of the third toss landing heads up is 1/2. If the third toss *is* heads, then the probability of the fourth toss landing heads is 2/3, otherwise the probability of landing heads is only 1/3. And so on.

The Challenge: Find the probability that the coin will land heads up exactly 42 times in the first 100 tosses (in a single day).

Submit solutions to Ross 2239G or to `oscar.levin@unco.edu` by **Friday, October 18**.

New this semester: PRIZES!
A winner will be randomly selected from all correct answers received for each challenge problem to receive a fun math prize of his or her choice.
Prizes include funky Rubik's style cubes, math puzzle books, math games, even a math coloring book. So submit your answer TODAY!