

Given a coin with probability of heads  $p$  and tails  $1-p$ , what is the probability that if you flip it an infinite number of times the number of heads will ever equal the number of tails? Please, submit the answer only to [shack@charm.net](mailto:shack@charm.net) (please, no e-mail attachments) or by mail to Michael Shackelford, 9200 Sienna Vista Dr., Las Vegas, NV 89117. No solution is required. Please

submit your answer as soon as possible to make the solvers list, especially those outside the United States.

**LAST ISSUE'S PUZZLE**

A 10-inch stick is thrown into a buzz saw and cut in two pieces at a random point. Each resulting piece is thrown into the buzz saw again, and each is again cut at a random point. What is the probability



that all four remaining pieces are one inch long or greater?

**Solution**

Let the stick be 1 unit in length and  $x$  be the point of the first cut. The probability given  $x$  that all four pieces are greater than 0.1 in length is  $(x^2-x+0.16)/(x^2-x)$ . Then integrate for  $x = 0$  to 1. Note that  $(x^2-x)^{-1} = 1/(x-1) - 1/x$ . The answer works out to  $(15-16*\ln(2))/25 \approx 0.1564$ .

**MARCH/APRIL SOLVERS:**

Richard Allen, William Carroll, Mark J. Chartier, George Crosby, Sean Donohoe, Mark Evans, Yu Feng, Jerry Francis, Robert Giambo, Brad S. Gile, William M. Glasgow, John Herder, Dan Hogan, Chris Johnson, Alan E. Lange, Matt Lynch, Lee Michelson, Brian E. Millsap, Tony Noe, Beverly J. Orth, Laszlo Pentek, Michael and Denise Pfalzer, David Promislow, Jay Rine, Bruce Schobel, Joel Sitrin, Al Spooner, David Thaller, Leslie Alan Vernon, Mike Weiler, Run Yan

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