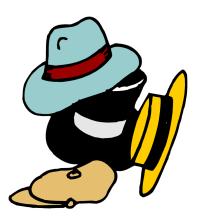# Math Challenge Problem

for April 2012

Math Mixer Mix-up

At the end of a recent fancy dress mixer for mathematicians, the 100 mathematicians left the party one-by-one, each stopping to pick up his or her fancy dress hat on the way out. Unfortunately, the first mathematician to leave was a little off his rocker and just grabbed a hat at random. Each subsequent mathematician to leave the party took their own hat, if it was available, or else took a hat at random.

The Challenge: What is the probability that the 100th mathematician to leave the party would get her own hat?