

Combinatorial Problems Raised by Statistical Mechanics
February 19–23, 2007

Turning the art of guessing into a science, and then
applying it to science (for example, to Stat. Mech.)

Doron Zeilberger
`zeilberg@math.rutgers.edu`
Department of Mathematics
Rutgers University
110 Frelinghuysen Rd
Piscataway, NJ 08854-8019
USA

Abstract

In the old days of science there were only experimental scientists, then some scientists did also theory, then things got too specialized and scientists got split into experimenters and theoreticians. Then both experiments and theory got too hard and a new breed of scientists, “computer theorists”, who did computer-modelling, came along.

In the very old days of mathematics there were only experimenters, then came Euclid and his buddies, and all “serious” mathematicians became theorists, who were obsessed with absolute truth and “understanding”. But now theory is too hard, so we must go back to becoming experimenters, and learn how to guess, and if possible prove our guesses (but that’s optional).

But if we want to become professionals, we must turn the art of guessing into a science.