Dror Bar-Natan: Academic Pensieve: Classes: 15-475-ProblemSolving:

# Tuesday Jan 20, hour 7: Quiz 2, Formulate an Equivalent Problem

January-20-15      9:16 AM

On board:
- Quiz mark appeals - with our TA Gaurav Patil, every Tuesday at 2:55PM in front of the classroom.
- HW: In prep for Thursday, read section 1.3 and think about all the problems in it.

Then Quiz.

Then quiz review.

Then

My favourite "formulate a different problem":
The game of 15.

The Sicherman dice: Can you write positive integers on the side of two blank 6-sided dice so that if thrown, the probability distribution for the sum would be the same as if it had been the ordinary pair of dice, marked (1,2,3,4,5,6) and (1,2,3,4,5,6)?

Sol'n: $x + x^2 + x^3 + x^4 + x^5 + x^6 = x(x+1)(x^2+x+1)(x^2-x+1)$

and $x(x+1)(x^2+x+1) = x + 2x^2 + 2x^3 + x^4$

$x(x+1)(x^2+x+1)(x^2-x+1) = x + x^3 + x^4 + x^5 + x^6 + x^8$