

# Nicely Done Gaming

## Gaming Math & Casino Game Design



### **PROBLEM WITH MATH PROBLEMS**

I love math puzzles.

It was a magazine article full of gambling math puzzles that initially got me interested in the gaming analysis about a decade before I could legally even place a bet. It was my first exposure to a real-world practical application of algebra and this hooked me into a lifelong passion for probability puzzles.

Within the industry, math puzzles continue to be important to me professionally. Appropriate puzzles within a careful context have proven invaluable in evaluating potential new-hires, not only in terms of technical skills but how they solve problems and, most importantly, how they work with colleagues.

The problem with math problems occurs most often during holiday parties. I've been challenged by a number of folk from outside the industry with some math puzzle they picked up somewhere. More often than not, the puzzles are not well-known ones like the Monty Hall problem, but ones I've not heard before.

While I love getting, creating and sharing math puzzles with math colleagues, I've found it a lose-lose situation with non-math folk. They expect me to solve the problem in my head in real time.

If I get the answer correct (which fortunately I've been able to so far) the response is "well, you're a mathematician – of course you'd know the answer". Considering that I have problems doing any kind of mental arithmetic, even simple things like calculating 15% tip on 92% of final bill (i.e. excluding sales tax), some of these puzzles were a challenge to me.

Woe to me if/when I ever get one of these wrong "No you're wrong, the answer (which I'm sure they didn't figure out for themselves) is X. Wow – and you get paid to do math? Really??"

So if at some social function you tell me "Oh, you're a math guy? Hey, I've got a puzzle for you," here's my automatic response. "Yeah, hey, that's great. I love

math puzzles. But there's my wife, please tell it to her – she likes springing these on me.” If the challenge seems obnoxious, I might add “It gives her a little thrill pretending as if she could actually solve it herself.”

Oh, and just for the record, my wife has a Ph.D. in cancer research and is overall much smarter than me but is sadly math-phobic. Helping her improve her math self-confidence has always been a priority with me. However, my approach is to help her see that she can already solve most of her medical statistics problems without me. I'd certainly never consider trying a math puzzle for this!

### January 2015 update!

Thought I made it through this holiday season without a surprise math challenge until the inevitable happened yet again. This time, though, the puzzle was kindly sent by email and the sender was kind enough to point out that he'd not been able to solve it himself. Unfortunately it was a rare proof-style problem – where one has to show that a given assertion about the solution was true.

I find proofs to be the most irritating thing to do in math, primarily because it's hard to know if you've it right. It is trying to explain someone else's solution. Is the explanation good enough? Err, maybe. Compare that to a “solve for a number” puzzle whose correctness is trivial to verify, especially by a non-technical third party. “Is the listed answer  $3\pi/4$ ?” “No.”

Oh, that reminds me:

**Q:** What did the employed pure mathematician say to the unemployed pure mathematician?

**A:** “You want fries with that?”

And yes, that was indeed “**Comic Sans**” font. Take that you art types who try to spring math puzzles in real time onto gaming designers!