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May 1998

Regulars

## Letters



### Goldbach Calculator

I really want to know more about Goldbach conjecture, would you mind sending me the source code of your Goldbach conjecture calculator.

Andy Leung

*Have a look at this issue's [Mathematical mysteries: Goldbach revisited](#).*

### Transmitting revised data

Via a circuitous route, I happened upon your coding theory: the first 50 years page. It is very nice, but contains an historical error. Hamming actually discovered the [7,4,3] Hamming code in 1947, which predates the publication of Shannon's work.

So, Hamming should rightly be proclaimed the father of coding theory. Shannon is often (usually!) given this honour because Hamming was an employee at Bell Labs, and they held up publication of his work until 1950 (two years after Shannon published his work). Hamming's code does appear in Shannon's paper, but it came to him via Hamming.

Richard Hamming died earlier this year, which is a great loss to the coding theory community.

Aaron Gulliver

*Author's response: "It is certainly true that Hamming did not publish anything in the literature until 1950. However, Shannon actually described the Hamming [7,4] code in in paper of 1948, and attributes it to Hamming: I believe that Hamming wrote a Bell Labs internal memorandum in 1947 with the details, and that the patent application was made in 1949. Shannon's article was the foundation of the subject as far as nearly everyone outside Bell Labs was concerned. I am, however, happy to amend the article to reflect the points raised here.*

I prefer not to argue about who might be "the father of coding theory"! R.A. Fisher's work as early as 1942 on experimental designs contains what we would now call codes, for example. It also seems clear that Leech and

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Golay developed the concepts independently, although somewhat later. I was trying to give a brief introduction, not resolve the (unfortunately somewhat acrimonious) priority disputes. In fact, Hamming's code is attributed to him in Shannon's paper.

I think we would all agree that Richard Hamming's death is indeed a great loss to the coding theory community."

The feature referred to here ("Coding theory: the first 50 years") appeared in Issue No 3, September 1997.

## That taxi problem again

In the taxi-colour problem, it is assumed that it doesn't matter what colours the remaining 15% of the taxis are. In particular, it is assumed that the chances of a non-blue taxi being reported as blue are 20%. If there are more than two colours of taxis however (say  $n$ ), this 20% will be divided (evenly or otherwise) between the  $n-1$  'wrong' colours.

**Steve Kallenborn**

*You are quite right to point out that the solution, as written, assumes that it doesn't matter what colour the remaining 15% of the taxis are. This is a mistake in the version of the article published as it was clearly intended that the problem specify the colour of the remaining 15% as green and not to assume it in the solution "without loss of generality". We have issued a correction to "The taxi problem" which takes this information into account and looked at problem again in this issue's "Yet more taxis!"*

## You win some, you lose some...

Very interesting page on coding theory --- nice use of Mars pictures and CD example. Impressed.

**Collin Carbno**

I can't stand \*!\*'ing mathes (*sic*).

**Richard Hill**

**How to contact us:** [Any comments?](#)

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