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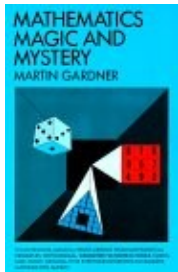
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March 2001

Reviews

## Two books for mathemagicians

reviewed by Helen Joyce



### Mathematics, Magic and Mystery

In this book, Martin Gardner, best known for his columns on recreational maths in *Scientific American* and the many books collecting this material, surveys a wide range of mathematical magic. Many of the tricks described require little or no dexterity and nothing except readily available props, such as cards or dice, and so are suitable for the beginner.

The format is simple. Under various headings, for example "String and Rope" or "Dice", a number of tricks using those props are described. For each trick Gardner first gives the effect – what the audience sees – and then the method – what the magician does to achieve the effect.

The book would be accessible to anyone reasonably numerate, and does not require any previous ability in magic. It would, therefore, be an excellent introduction to magic for those mathematically–minded people who would like to do some magic tricks, without necessarily making a commitment to acquiring "sleight–of–hand" techniques or specialist equipment. It would also be very useful to teachers, who might find some mathemagical tricks very useful for awakening their pupils' interest in maths.

#### **Book details:**

*Mathematics, Magic and Mystery*

Martin Gardner

paperback – 176 pages (1967)

Dover Publications

ISBN: 0 486 20335 2



## Magic Tricks, Card Shuffling and Dynamic Computer Memories

This book is completely different in style, aim and content to Martin Gardner's. It is quite a curiosity, combining as it does careful descriptions of rather difficult magic tricks, pretty detailed mathematical proofs of why they work, and an excursion into the mathematics of computer memory. Surely very few people would be deeply interested in all three topics – in fact, the author may be on his own in this.

On the other hand, if you are already one of the many mathemagicians around, you could use this book to learn some really unusual and spectacular tricks, all based on acquiring a single (admittedly difficult) skill – performing a perfect shuffle.

A perfect shuffle is one where the pack is split into two equal hands (or an odd number of cards is split into two hands, one hand containing one more card than the other) and then the hands are riffled together so they end up exactly interwoven, one card from one hand, then one card from the other. Not too easy to master, but once you have mastered it, you can perform some genuinely unusual tricks, which would be an addition to the repertoire even of some professional magicians.

The point of a perfect shuffle is its unusual mathematical properties – for example, eight perfect shuffles in a row will return the pack to its original state. Such properties, allied to the fact that the shuffle looks as if it randomizes the pack very well, are the basis for the tricks described here. The author has been fascinated with the perfect shuffle since his childhood, and is the only person in the world with a Ph.D. in card-shuffling! The work he did for the sheer love of it and his pleasure in the tricks it enabled him to perform, turned out to be relevant to some open mathematical problems on permutations, and also to certain methods for accessing computer memory.

The author says that he will be happy if "my magician friends complain the book is too mathematical and my mathematician friends worry there's too much performance detail". The wisdom of such a goal is dubious, and I am afraid he may have succeeded.

So would I recommend this book? Well, if you are already a fairly accomplished magician, yes – you will learn some excellent tricks and might even pick up a bit of maths as well. If you are already a fairly accomplished mathemagician, even better – this book should be right up your street. But if you are simply a mathematician with a passing interest in magic, then not really. The book is just too specialized.

### **Book details:**

*Magic Tricks, Card Shuffling and Dynamic Computer Memories*

S. Brent Morris

paperback – 148 pages (1998)

Mathematical Association of America, distributed by [Cambridge University Press](#)

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