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Reviews

## 'How to solve it'

reviewed by Helen Joyce



If "How to solve it" really contained an infallible recipe for doing so, mathematics would not be mathematics and the world would be quite different. Of course it doesn't – it can't – but it can – and does – contain a great deal of food for thought for the budding mathematician. Like many other Central Europeans, Pólya relocated to the US at the beginning of the Second World War. There he worked at Stanford University and wrote this immensely successful book (more than a million copies sold) in 1945.

Essentially, *How to solve it* is Pólya's answer to the question he asked himself many years before as a student of mathematics: "Yes, the solution seems to work, it appears to be correct; but how is it possible to invent such a solution?" His answer is to study heuristics – the science, or art, of problem-solving. He describes four steps to work through when attacking a problem – understand the problem, devise a plan, carry out your plan, and examine the solution obtained. Under each of these headings he suggests helpful questions to ask, such as "Do you know a related problem?" and "Could you restate the problem?".

If you suspect that you might like to study mathematics, you really should read this book. It will help you to understand what doing original research is all about – and it is a world away from the smooth, "packaged" stuff you learn in textbooks. Conversely, if you teach mathematics and want to give your students a more genuine understanding of maths – and to make your classes more fun into the bargain – this book is for you too. It's not a magic bullet, but it will be a guide and companion on what will hopefully be the reader's long and fruitful career as a problem-solver.

### **Book details:**

*How to solve it*

George Pólya

paperback – 304 pages (1990)



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