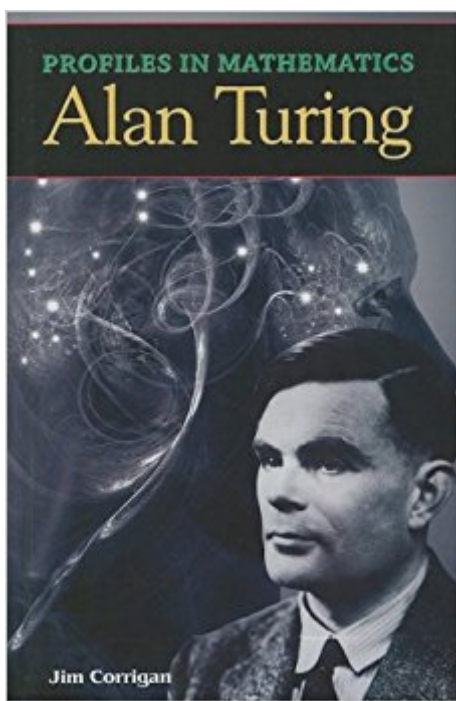


The book was found

Alan Turing (Profiles In Mathematics)



Synopsis

Book by Corrigan, Jim

Book Information

Series: Profiles in Mathematics

Library Binding: 112 pages

Publisher: Morgan Reynolds Pub (June 2008)

Language: English

ISBN-10: 1599350645

ISBN-13: 978-1599350646

Product Dimensions: 9.2 x 6.2 x 6 inches

Shipping Weight: 12 ounces

Average Customer Review: 5.0 out of 5 stars [See all reviews](#) (1 customer review)

Best Sellers Rank: #3,278,795 in Books (See Top 100 in Books) #9 in [Books > Teens >](#)

[Education & Reference > Science & Technology > Computers > Software](#) #103 in [Books >](#)

[Children's Books > Computers & Technology > Software](#) #257 in [Books > Teens > Biographies >](#)

[Science & Technology](#)

Age Range: 12 and up

Grade Level: 7 and up

Customer Reviews

Alan Turing's older brother was athletic, got good marks, and studied to become an attorney. At the time, scientific and mathematics were not admired professions - but that didn't stop Alan from pursuing them; he was also somewhat clumsy and unaware of any rules of good dress. In 1930 he received a scholarship to King's College in Cambridge - an impressive accomplishment. Their math department was among the best in England, and in 1935 he was awarded a fellowship there. Soon after he turned his attention to how a machine might simulate human thinking, then cryptography in 1937 while at Princeton. The following year he was awarded a doctoral degree and offered a position - Turing declined, wanting to return to England. There he went to work for their Code and Cypher School. Slightly more than a year later, Germany invaded Poland. German cryptographers were convince their code (Enigma) could not be broken. Both sender and receiver needed an Enigma machine and had to ensure the rotor settings of both matched. The Enigma machine had been invented in 1923 and made available for purchase around the world. Each machine contained three rotors, and each rotor had 26 different settings. Thus, the trio of rotors could be placed in any

of 17,576 different configurations. The German military made their machines even more complex by introducing two additional rotors. Only three at a time could be used, but the British analysts had no way of knowing which three were being used. They also added a plug-board with 26 jacks into which cables could be plugged - raising the combinations to over 1 trillion. Previously British analysts had learned that Enigma would never encode a letter as itself, and that German operators routinely included clues about the rotor setting they were using at the start of each message to ensure the intended recipient had correct rotor settings. The Poles also built electrical machines (bombes) to simulate each rotor setting. In 1940, Bletchley Park decrypted only 273 German Enigma, 1,344 in 1941, and 4,655 in 1942. German commanders started to suspect their system might have been compromised and ordered a series of modifications to thwart such. British analysts had to resort to trial-and-error methods to adjust. Turing wanted to quantify the probability of success of each potential solution so the likeliest solutions could be tried first - a process today known as sequential analysis. Bletchley Park built 60 bombes, but it still could take several days to find correct rotor settings for a particular message. Turing suspected a way to move faster was by exploiting Germany's blind faith in Enigma. Overuse of identical wording leaves messages vulnerable to 'probable-word attack.' Germans often ignored this basic rule - eg. methodically including "Heil Hitler!" in every message and routinely repeating long phrases such as 'The weather forecast for today . . . ' Turing designed the British bombes to look for probable words and phrases. The bombes were about the height/weight of a large refrigerator and twice as wide; each contained slots for 108 Enigma-like rotors and required skilled workers to look after them. Turing et al grew so desperate they mailed a request directly to Churchill who directed compliance. After WWII, Turing turned to efforts to build a brain and developed a chess program using decision trees and numerical values for the various outcomes.

[Download to continue reading...](#)

The Annotated Turing: A Guided Tour Through Alan Turing's Historic Paper on Computability and the Turing Machine
Alan Turing (Profiles in Mathematics)
Turing: The Tragic Life of Alan Turing
The Imitation Game: Alan Turing Decoded
The Man Who Knew Too Much: Alan Turing and the Invention of the Computer
Alan Turing: Unlocking the Enigma (Kindle Single)
Alan Turing: The Enigma
The Book That Inspired the Film "The Imitation Game"
Alan Turing: The Enigma
The Man Who Knew Too Much: Alan Turing and the Invention of the Computer (Great Discoveries series)
Profiles of American Colleges 2017 (Barron's Profiles of American Colleges)
Alan's War: The Memories of G.I. Alan Cope
Turing's Cathedral: The Origins of the Digital Universe
Turing: Pioneer of the Information Age
How to Bake Pi: An Edible Exploration of the Mathematics of Mathematics

The Birth of Mathematics: Ancient Times to 1300 (Pioneers in Mathematics) Practical Problems in Mathematics for Heating and Cooling Technicians (Practical Problems In Mathematics Series) Practical Problems in Mathematics for Heating and Cooling Technicians (Applied Mathematics) Teaching Student-Centered Mathematics: Developmentally Appropriate Instruction for Grades 3-5 (Volume II) (2nd Edition) (Teaching Student-Centered Mathematics Series) The Stanford Mathematics Problem Book: With Hints and Solutions (Dover Books on Mathematics) The Mathematics of Medical Imaging: A Beginner's Guide (Springer Undergraduate Texts in Mathematics and Technology)

[Dmca](#)