Alan Turing The Enigma Andrew Hodges

Alan Turing's 1936 paper On Computable Numbers, introducing the Turing machine, was a landmark of twentieth-century thought. It settled a deep problem in the foundations of mathematics, and provided the principle of the post-war electronic computer. It also supplied a new approach to the philosophy of the mind. Influenced by his crucial codebreaking work in the Second World War, and by practical pioneering of the first electronic computers, Turing argued that all the operations of the mind could be performed by computers. His thesis, made famous by the wit and drama of the Turing Test, is the cornerstone of modern Artificial Intelligence. Here Andrew Hodges gives a fresh and critical analysis of Turing's developing thought, relating it to his extraordinary life, and also to the more recent ideas of Roger Penrose.

Alan Turing: Enigma: The Incredible True Story of the Man Who Cracked The Code If you have ever used a computer, you owe that joy to Alan Turing. Turing is known by many as the Father of the Modern Computer for his conception of the theoretical stored-memory machine (known as the Turing Machine) and for the subsequent implementation of this idea in the creation of some of the world's first working computers, the Automatic Computing Engine, and the Manchester Mark 1. Impressive as they are, though, Turing's contributions to computer science are not necessarily his most famous or influential projects. Alan Turing was one of the most significant figures in the Allied victory of World War Two, thanks to his ingenious code breaking skills and the invention of the British Bombe at Bletchley Park. In his later life, Turing even dabbled in artificial intelligence, and biology, creating concepts that are still being investigated today. Until recently, Alan Turing had often been overlooked as an important figure in history. Thanks to in-depth biographies like Andrew Hodges' Alan Turing: The Enigma, and film depictions of Turing's life, like The Imitation Game, based on Hodges' book, Alan Turing is quickly becoming a household name, as people begin to recognize that his contributions to various fields were so influential they actually changed the course of human history.

This compassionate play is the story of Alan Turing, mathematician and father of computer science. Turing broke the code in two ways: he cracked the German Enigma code during World War II (for which he was decorated by Churchill) and also shattered the English code of sexual discretion with his homosexuality (for which he was arrested on a charge of gross indecency). Whitemore's play, shifting back and forth in time, seeks to find a connection between the two events. When first performed in the 1980s, Breaking the Code was critically acclaimed in the UK before a Broadway transfer won it a raft of awards & nominations including 3 Tony Awards, and 2 Drama Desk awards.

Essay from the year 2016 in the subject Communications - Interpersonal Communication, grade: 86, LCC International University, course: Interpersonal Communication, language: English, abstract: "The Imitation Game" (2014) is a historical drama movie directed by Morten Tyldum based on the book "Alan Turing: The Enigma" by Andrew Hodges. The film is about life of a famous British mathematician and cryptanalyst Alan Turing, who is famous by the deciphering of the German Enigma coding machine during the World War II. On the one hand, the movie tells a story of a person with a brilliant mind who changed the course of the world history, but on the other hand, this film is a personal drama that depicts complicated relationships between Alan and other people. Alan has lack of communication skills and his perception of the reality differs from others' ones. Being misunderstood and rejected by people because of the peculiarity during his college years, Turing closes himself from the world, except one friend. At the beginning of the World War II he joins the secret cryptographists' team, creates a computer-prototype machine and solves the Enigma mystery. The film brightly shows main character's communication difficulties and his inability to collaborate in a team. After years, being caught by a policeman, executed and suffered from the punishment, the only one person who could understand him, Joan Clarke, visits him and witnesses his mental and health problems – the results of the execution. I found it very interesting to analyze the development of the relationships between Turing and other people in the movie, how he confronts and deals with life and communication difficulties, and also Turing's personality. The film's thread of society's suppressing on Alan and, eventually, death from it, also shows an inability of the society to accept extraordinary individuals. That is why I chose three themes to analyze and provide examples from the film – perception, identity and relationship maintenance. The purpose of my paper is to show that Alan Turing tries to understand the society, but the society does not want to understand and to admit him.

Hundreds of movies and thousands of books have been written about the heroes of World War II. For dozens of years, however, few people knew about one of the greatest heroes of the war—a mild-mannered, eccentric mathematician from the University of Cambridge. This man, an undeniable genius whose later life was plagued by controversy and tragedy, probably played a greater role in the eventual Allied victory than anyone else. Until quite recently his contribution to the war effort was barely recognized. Everyone's heard of Churchill, Eisenhower, Montgomery, Patton and even de Gaulle, but far fewer have ever heard of Alan Turing. This is his incredible story.

Can you tell the difference between talking to a human and talking to a machine? Or, is it possible to create a machine which is able to converse like a human? In fact, what is it that even makes us human? Turing's Imitation Game, commonly known as the Turing Test, is fundamental to the science of artificial intelligence. Involving an interrogator conversing with hidden identities, both human and machine, the test strikes at the heart of any questions about the capacity of machines to behave as humans. While this subject area has shifted dramatically in the last few years, this book offers an up-to-date assessment of Turing's Imitation Game, its history, context and implications, all illustrated with practical Turing tests. The contemporary relevance of this topic and the strong emphasis on example transcripts makes this book an ideal companion for undergraduate courses in artificial intelligence, engineering or computer science.

A facsimile edition of Alan Turing's influential Princeton thesis Between inventing the concept of a universal computer in 1936 and breaking the German Enigma code during World War II, Alan Turing (1912–1954), the British founder of computer science and artificial intelligence, came to Princeton University to study mathematical logic. Some of the greatest logicians in the world—including Alonzo Church, Kurt Gödel, John von Neumann, and Stephen Kleene—were at Princeton in the 1930s, and they were working on ideas that would lay the groundwork for what would become known as computer science. This book presents a facsimile of the original typescript of Turing's fascinating and influential 1938 Princeton PhD thesis, one of the key documents in the history of mathematics and computer science. The book also features essays by Andrew Appel and Solomon Feferman that explain the still-unfolding significance of the ideas Turing developed at Princeton. A work of philosophy as well as mathematics, Turing's thesis envisions a practical goal—a logical system to formalize mathematical proofs so they can be checked

mechanically. If every step of a theorem could be verified mechanically, the burden on intuition would be limited to the axioms. Turing's point, as Appel writes, is that "mathematical reasoning can be done, and should be done, in mechanizable formal logic." Turing's vision of "constructive systems of logic for practical use" has become reality: in the twenty-first century, automated "formal methods" are now routine. Presented here in its original form, this fascinating thesis is one of the key documents in the history of mathematics and computer science.

Everyone knows the story of the codebreaker and computer science pioneer Alan Turing. Except ... When Dermot Turing is asked about his famous uncle, people want to know more than the bullet points of his life. They want to know everything – was Alan Turing actually a codebreaker? What did he make of artificial intelligence? What is the significance of Alan Turing's trial, his suicide, the Royal Pardon, the £50 note and the film The Imitation Game? In Reflections of Alan Turing, Dermot strips off the layers to uncover the real story. It's time to discover a fresh legacy of Alan Turing for the twenty-first century.

Award winning authors Jim Ottaviani and Leland Purvis present a historically accurate graphic novel biography of English mathematician and scientist Alan Turing in The Imitation Game. English mathematician and scientist Alan Turing (1912-1954) is credited with many of the foundational principles of contemporary computer science. The Imitation Game presents a historically accurate graphic novel biography of Turing's life, including his groundbreaking work on the fundamentals of cryptography and artificial intelligence. His code breaking efforts led to the cracking of the German Enigma during World War II, work that saved countless lives and accelerated the Allied defeat of the Nazis. While Turing's achievements remain relevant decades after his death, the story of his life in post-war Europe continues to fascinate audiences today. Award-winning duo Jim Ottaviani (the #1 New York Times bestselling author of Feynman and Primates) and artist Leland Purvis (an Eisner and Ignatz Award nominee and occasional reviewer for the Comics Journal) present a factually detailed account of Turing's life and groundbreaking research--as an unconventional genius who was arrested, tried, convicted, and punished for his openly gay lifestyle, and whose innovative work still fuels the computing and communication systems that define our modern world. Computer science buffs, comics fans, and history aficionados will be captivated by this riveting and tragic story of one of the 20th century's most unsung heroes.

Alan Turing was an extraordinary man who crammed into a life of only 42 years the careers of mathematician, codebreaker, computer scientist and biologist. He is widely regarded as a war hero grossly mistreated by his unappreciative country and it has become hard to disentangle the real man from the story. It is easy to cast him as a misfit, the stereotypical professor. But actually Alan Turing was never a professor, and his nickname 'Prof' was given by his codebreaking friends at Bletchley Park. Now, Alan Turing's nephew, Dermot Turing, has taken a fresh look at the influences on Alan Turing's life and creativity, and the later creation of a legend. For the first time it is possible to disclose the real character behind the cipher-text: how did Alan's childhood experiences influence the man? Who were the influential figures in Alan's formative years? How did his creative ideas evolve? Was he really a solitary, asocial genius? What was his wartime work after 1942, and why was it kept even more secret than the Enigma story? What is the truth about Alan Turing's conviction for gross indecency, and did he commit suicide? What is the significance of the Royal Pardon granted in 2013? In Dermot's own style he takes a vibrant and entertaining approach to the life and work of a true genius.

Are science and religion hopelessly at odds with one another in their view of truth? Not if you read physicist Michael Guillen's new book on truth, which shows that the two sources of truth, scientific and religious, are not opposed but in surprising agreement

Alan Turing, pioneer of computing and WWII codebreaker, is one of the most important and influential thinkers of the twentieth century. In this volume for the first time his key writings are made available to a broad, non-specialist readership. They make fascinating reading both in their own right and for their historic significance: contemporary computational theory, cognitive science, artificial intelligence, and artificial life all spring from this ground-breaking work, which is also rich in philosophical and logical insight. An introduction by leading Turing expert Jack Copeland provides the background and guides the reader through the selection. About Alan Turing Alan Turing FRS OBE, (1912-1954) studied mathematics at King's College, Cambridge. He was elected a Fellow of King's in March 1935, at the age of only 22. In the same year he invented the abstract computing machines - now known simply as Turing machines - on which all subsequent stored-program digital computers are modelled. During 1936-1938 Turing continued his studies, now at Princeton University. He completed a PhD in mathematical logic, analysing the notion of 'intuition' in mathematics and introducing the idea of oracular computation, now fundamental in mathematical recursion theory. An 'oracle' is an abstract device able to solve mathematical problems too difficult for the universal Turing machine. In the summer of 1938 Turing returned to his Fellowship at King's. When WWII started in 1939 he joined the wartime headquarters of the Government Code and Cypher School (GC&CS) at Bletchley Park, Buckinghamshire. Building on earlier work by Polish cryptanalysts, Turing contributed crucially to the design of electro-mechanical machines ('bombes') used to decipher Enigma, the code by means of which the German armed forces sought to protect their radio communications. Turing's work on the version of Enigma used by the German navy was vital to the battle for supremacy in the North Atlantic. He also contributed to the attack on the cyphers known as 'Fish'. Based on binary teleprinter code, Fish was used during the latter part of the war in preference to morse-based Enigma for the encryption of high-level signals, for example messages from Hitler and other members of the German High Command. It is estimated that the work of GC&CS shortened the war in Europe by at least two years. Turing received the Order of the British Empire for the part he played. In 1945, the war over, Turing was recruited to the National Physical Laboratory (NPL) in London, his brief to design and develop an electronic computer - a concrete form of the universal Turing machine. Turing's report setting out his design for the Automatic Computing Engine (ACE) was the first relatively complete specification of an electronic stored-program general-purpose digital computer. Delays beyond Turing's control resulted in NPL's losing the race to build the world's first working electronic stored-program digital computer - an honour that went to the Royal Society Computing Machine Laboratory at Manchester University, in June 1948. Discouraged by the delays at NPL, Turing took up the Deputy Directorship of the Royal Society Computing Machine Laboratory in that year. Turing was a founding father of modern cognitive science and a leading early exponent of the hypothesis that the human brain is in large part a digital computing machine, theorising that the cortex at birth is an 'unorganised machine' which through 'training' becomes organised 'into a universal machine or something like it'. He also pioneered Artificial Intelligence. Turing spent the rest of his short career at Manchester University, being appointed to a specially created Readership in the Theory of Computing in May 1953. He was elected a Fellow of the Royal Society of London in March 1951 (a high honour).

It is only a slight exaggeration to say that the British mathematician Alan Turing (1912-1954) saved the Allies from the Nazis, invented the computer and artificial intelligence, and anticipated gay liberation by decades--all before his suicide at age forty-one. This classic biography of the founder of computer science, reissued on the centenary of his birth with a substantial new preface by the author, is the definitive account of an extraordinary mind and life. A gripping story of mathematics, computers, cryptography, and homosexual persecution, Andrew Hodges's acclaimed book captures both the inner and outer drama of Turing's life. Hodges tells how Turing's revolutionary idea of 1936--the concept of a universal machine--laid the foundation for the modern computer and how Turing brought the idea to practical realization in 1945 with his electronic design. The book also tells how this work was directly related to Turing's leading role in breaking the German Enigma ciphers during World War II, a scientific triumph that was critical to Allied victory in the Atlantic. At the same time, this is the tragic story of a man who, despite his wartime service, was eventually arrested, stripped of his security clearance, and forced to undergo a humiliating treatment program--all for trying to live honestly in a society that defined homosexuality as a crime.

Alan Turing is regarded as one of the greatest scientists of the 20th century. But who was Turing, and what did he achieve during his tragically short life of 41 years? Best known as the genius who broke

Germany's most secret codes during the war of 1939-45, Turing was also the father of the modern computer. Today, all who 'click-to-open' are familiar with the impact of Turing's ideas. Here, B. Jack Copeland provides an account of Turing's life and work, exploring the key elements of his life-story in tandem with his leading ideas and contributions. The book highlights Turing's contributions to computing and to computer science, including Artificial Intelligence and Artificial Life, and the emphasis throughout is on the relevance of his work to modern developments. The story of his contributions to codebreaking during the Second World War is set in the context of his thinking about machines, as is the account of his work in the foundations of mathematics.

Spring 1940: The Battle of the Atlantic rages. Vulnerable merchant convoys are at the mercy of German U-boats controlled by a cunning system of coded messages created by a machine called Enigma. Only one man believes that these codes can be broken - mathematician and Bletchley Park cryptanalyst Alan Turing. Winston Churchill later described Turing's success in breaking the Enigma codes as the single biggest contribution to victory against Nazi Germany. Unheralded during his lifetime, Turing is now recognized as the father of modern computer science and as possessing one of the greatest minds of the 20th century. Drawing on original source material, interviews and photographs, this book explores Turing's groundbreaking work as well as revealing the private side of a complex and unlikely national hero.

Alan Turing has long proved a subject of fascination, but following the centenary of his birth in 2012, the code-breaker, computer pioneer, mathematician (and much more) has become even more celebrated with much media coverage, and several meetings, conferences and books raising public awareness of Turing's life and work. This volume will bring together contributions from some of the leading experts on Alan Turing to create a comprehensive guide to Turing that will serve as a useful resource for researchers in the area as well as the increasingly interested general reader. The book will cover aspects of Turing's life and the wide range of his intellectual activities, including mathematics, code-breaking, computer science, logic, artificial intelligence and mathematical biology, as well as his subsequent influence.

Mathematical Logic is a collection of the works of one of the leading figures in 20th-century science. This collection of A.M. Turing's works is intended to include all his mature scientific writing, including a substantial quantity of unpublished material. His work in pure mathematics and mathematical logic extended considerably further; the work of his last years, on morphogenesis in plants, is also of the greatest originality and of permanent importance. This book is divided into three parts. The first part focuses on computability and ordinal logics and covers Turing's work between 1937 and 1938. The second part covers type theory; it provides a general introduction to Turing's work on type theory and covers his published and unpublished works between 1941 and 1948. Finally, the third part focuses on enigmas, mysteries, and loose ends. This concluding section of the book discusses Turing's Treatise on the Enigma, with excerpts from the Enigma Paper. It also delves into Turing's papers on programming and on minimum cost sequential analysis, featuring an excerpt from the unpublished manuscript. This book will be of interest to mathematicians, logicians, and computer scientists.

The story of Alan Turing, World War II's secret hero, whose brilliant mathematical work resulted in the "Enigma" machine which broke the German military code and gave the Allied forces advance knowledge of German military movements

Discover the story Ernest Shackleton's legendary Antarctic expedition through the words of the world's greatest living explorer, Sir Ranulph Fiennes - one of the only men to understand his experience first-hand . . . 'THE definitive book on my hero Shackleton and no one could have done it better. "The Boss" would have heartily approved of such an authentic account by one of the few men who truly knows what it's like to challenge Antarctica' LORRAINE KELLY To write about Hell, it helps if you have been there. _____ In 1915, Sir Ernest Shackleton's attempt to traverse the Antarctic was cut short when his ship, Endurance, became trapped in ice. What followed became legend. Throughout the long, dark Antarctic winter, Shackleton fights for his life and the lives of his men - enduring freezing temperatures, a perilous lifeboat journey through the ice-strewn sea, and a punishing march across the South Georgia glaciers to seek the one slim chance they have of rescue. Their survival would become history's most enthralling adventure. No previous biographer has experienced even a tiny taste of the polar hell on earth endured by Shackleton and his men. That cannot be said of Sir Ranulph Fiennes, who has been described as 'our greatest living explorer'. From Shackleton's pursuit of adventure as a young merchant seaman, through his rivalry with Captain Scott, to the two remarkable expeditions to Antarctica that revealed his unrivalled leadership and courage, Fiennes brings the story vividly to life in a book that is part celebration, part vindication and all adventure. _____ 'Fiennes makes a fine guide on voyage into Shackleton's world . . . What makes this book so engaging is the author's own storytelling skills' Irish Independent Praise for Sir Ranulph Fiennes: 'The World's Greatest Living Explorer' Guinness Book of Records 'Full of awe-inspiring details of hardship, resolve and weather that defies belief, told by someone of unique authority. No one is more tailor-made to tell [this] story than Sir Ranulph Fiennes' Newsday 'Fiennes' own experiences certainly allow him to write vividly and with empathy of the hell that the men went through' Sunday Times

The first book to present a readable explanation of Godel's theorem to both scholars and non-specialists, this is a gripping combination of science and accessibility, offering those with a taste for logic and philosophy the chance to satisfy their intellectual curiosity.

Margaret Thatcher was one of the most controversial figures of modern times. Her governments inspired hatred and veneration in equal measure and her legacy remains fiercely contested. Yet assessments of the Thatcher era are often divorced from any larger historical perspective. This book draws together leading historians to locate Thatcher and Thatcherism within the political, social, cultural and economic history of modern Britain. It explores the social and economic crises of the 1970s; Britain's relationships with Europe, the Commonwealth and the United States; and the different experiences of Thatcherism in Scotland, Wales and Northern Ireland. The book assesses the impact of the Thatcher era on class and gender and situates Thatcherism within the Cold War, the end of Empire and the rise of an Anglo-American 'New Right'. Drawing on the latest available sources, it opens a wide-ranging debate about the Thatcher era and its place in modern British history.

Alan Turing was an inspirational figure who is now recognised as a genius of modern mathematics. In addition to leading the Allied forces' code-breaking effort at Bletchley Park in World War II, he proposed the theoretical foundations of modern computing and anticipated developments in areas from information theory to computer chess. His ideas have been extraordinarily influential in modern mathematics and this book traces such developments by bringing together essays by leading experts in logic, artificial intelligence, computability theory and related areas. Together, they give insight into this fascinating man, the development of modern logic, and the history of ideas. The articles within cover a diverse selection of topics, such as the development of formal proof, differing views on the Church–Turing thesis, the

development of combinatorial group theory, and Turing's work on randomness which foresaw the ideas of algorithmic randomness that would emerge many years later.
Documents the innovations of a group of eccentric geniuses who developed computer code in the mid-20th century as part of mathematician Alan Turin's theoretical universal machine idea, exploring how their ideas led to such developments as digital television, modern genetics and the hydrogen bomb.
Based on the award winning 2014 film, _The Imitation Game_ tells the true story of cryptanalyst Alan Turing and his brilliant team of code-breakers as they crack the famous Enigma Code during World War II. Full colour stills from the award winning film bring story to life and a two-page Fact File section provides supplementary material on the story background.
What is a beautiful garden to southern Ethiopian farmers? Anchored in the author’s perceptual approach to the people, plants, land, and food, The Edible Gardens of Ethiopia opens a window into the simple beauty and ecological vitality of an ensete garden. The ensete plant is only one among the many “unloved” crops that are marginalized and pushed close to disappearance by the advance of farming modernization and monocultural thinking. And yet its human companions, caught in a symbiotic and sensuous dialogue with the plant, still relate to each exemplar as having individual appearance, sensibility, charisma, and taste, as an epiphany of beauty and prosperity, and even believe that the plant can feel pain. Here a different story is recounted of these human-plant communities, one of reciprocal love at times practiced in an act of secrecy. The plot unfolds from the subversive and tasteful dimensions of gardening for subsistence and cooking in the garden of ensete through reflections on the cultural and edible dimensions of biodiversity to embrace hunger and beauty as absorbing aesthetic experiences in small-scale agriculture. Through this story, the reader will enter the material and spiritual world of ensete and contemplate it as a modest yet inspiring example of hope in rapidly deteriorating landscapes. Based on prolonged engagement with this “virtuous” plant of southwestern Ethiopia, this book provides a nuanced reading of the ensete ventricosum (avant-)garden and explores how the life in tiny, diverse, and womanly plots offers alternative visions of nature, food policy, and conservation efforts.
The breathtakingly rapid pace of change in computing makes it easy to overlook the pioneers who began it all. Written by Martin Davis, respected logician and researcher in the theory of computation, The Universal Computer: The Road from Leibniz to Turing explores the fascinating lives, ideas, and discoveries of seven remarkable mathematicians. It tells the stories of the unsung heroes of the computer age – the logicians. The story begins with Leibniz in the 17th century and then focuses on Boole, Frege, Cantor, Hilbert, and Gödel, before turning to Turing. Turing’s analysis of algorithmic processes led to a single, all-purpose machine that could be programmed to carry out such processes—the computer. Davis describes how this incredible group, with lives as extraordinary as their accomplishments, grappled with logical reasoning and its mechanization. By investigating their achievements and failures, he shows how these pioneers paved the way for modern computing. Bringing the material up to date, in this revised edition Davis discusses the success of the IBM Watson on Jeopardy, reorganizes the information on incompleteness, and adds information on Konrad Zuse. A distinguished prize-winning logician, Martin Davis has had a career of more than six decades devoted to the important interface between logic and computer science. His expertise, combined with his genuine love of the subject and excellent storytelling, make him the perfect person to tell this story.
Containing never-before-published material, this fascinating account sheds new light on one of the greatest figures of the twentieth century.
A TV tie-in edition of The Code Book filmed as a prime-time five-part Channel 4 series on the history of codes and code-breaking and presented by the author. This book, which accompanies the major Channel 4 series, brings to life the hidden history of codes and code breaking. Since the birth of writing, there has also been the need for secrecy. The story of codes is the story of the brilliant men and women who used mathematics, linguistics, machines, computers, gut instinct, logic and detective work to encrypt and break these secrect messages and the effect their work has had on history.
The biography of a mathematical genius. Paul Erdos was the most prolific pure mathematician in history and, arguably, the strangest too. 'A mathematical genius of the first order, Paul Erdos was totally obsessed with his subject -- he thought and wrote mathematics for nineteen hours a day until he died. He travelled constantly, living out of a plastic bag and had no interest in food, sex, companionship, art -- all that is usually indispensible to a human life. Paul Hoffman, in this marvellous biography, gives us a vivid and strangely moving portrait of this singular creature, one that brings out not only Erdos's genius and his oddness, but his warmth and sense of fun, the joyfulness of his strange life.' Oliver Sacks For six decades Erdos had no job, no hobbies, no wife, no home; he never learnt to cook, do laundry, drive a car and died a virgin. Instead he travelled the world with his mother in tow, arriving at the doorstep of esteemed mathematicians declaring 'My brain is open'. He travelled until his death at 83, racing across four continents to prove as many theorems as possible, fuelled by a diet of espresso and amphetamines. With more than 1,500 papers written or co-written,
Alan Turing Alan Turing had a radical and ingenious mind. He is considered one of the fathers of artificial intelligence, and his theories on this matter range from purely mechanical to almost spiritual. During World War II, his decryption of the Nazis' Enigma codes proved vital for the Allied victory over the Axis powers. Turing's fingerprints are everywhere, and yet his own country for quite some time failed to acknowledge it. It wasn't until 2009 that the then prime minister of the United Kingdom, Gordon Brown, issued an official, posthumous apology to Alan Turing for "the appalling way he was treated." To many, this was an admission that was far too long in coming. Inside you will read about... ? The Death of His First Love ? Turing Machines ? Breaking the Nazis' Enigma Codes ? Conviction and Chemical Castration ? The Poison Apple And much more! As the chronicling of this book demonstrates, Alan Turing's life was by no means easy; there were hardships, trials, and tribulations that would shake him to his core. But despite the tragic way his life ended by way of a poison apple, the spark ignited by Alan Turing's short life is still something exceedingly brilliant to behold. Series Information: World War 2 Biographies Book 7
A NEW YORK TIMES BESTSELLER The official book behind the Academy Award-winning film The Imitation Game, starring Benedict Cumberbatch and Keira Knightley It is only a slight exaggeration to say that the British mathematician Alan Turing (1912-1954) saved the Allies from the Nazis, invented the computer and artificial intelligence, and anticipated gay liberation by decades--all before his suicide at age forty-one. This New York Times–bestselling biography of the founder of computer science, with a new preface by the author that addresses Turing's royal pardon in 2013, is the definitive account of an extraordinary mind and life. Capturing both the inner and outer drama of Turing’s life, Andrew Hodges tells how Turing’s revolutionary idea of 1936--the concept of a universal machine--laid the foundation for the modern computer and how Turing brought the idea to practical realization in 1945 with his electronic design. The book also tells how this work was directly related to Turing’s leading role in breaking the German Enigma ciphers during World War II, a scientific triumph that was critical to Allied victory in the Atlantic. At the same time, this is the tragic account of a man who, despite his wartime service, was eventually arrested, stripped of his security clearance, and forced to undergo a humiliating treatment program--all for trying to live honestly in a society that defined homosexuality as a crime. The inspiration for a major motion picture starring Benedict Cumberbatch and Keira Knightley, Alan Turing: The Enigma is a gripping story of mathematics, computers, cryptography, and homosexual persecution.
In 1936, when he was just twenty-four years old, Alan Turing wrote a remarkable paper in which he outlined the theory of computation, laying out the ideas that underlie all modern computers. This groundbreaking and powerful theory now forms the basis of computer science. In Turing's Vision, Chris Bernhardt explains the theory, Turing's most important contribution, for the general reader. Bernhardt argues that the strength of Turing's theory is its simplicity, and that, explained in a straightforward manner, it is eminently understandable by the nonspecialist. As Marvin Minsky writes, "The sheer simplicity of the theory's foundation and extraordinary short path from this foundation to its logical and surprising conclusions give the theory a mathematical beauty that alone guarantees it a permanent place in computer theory." Bernhardt begins with the foundation and systematically builds to the surprising conclusions. He also views Turing's theory in the context of mathematical history, other views of computation (including

those of Alonzo Church), Turing's later work, and the birth of the modern computer. In the paper, "On Computable Numbers, with an Application to the Entscheidungsproblem," Turing thinks carefully about how humans perform computation, breaking it down into a sequence of steps, and then constructs theoretical machines capable of performing each step. Turing wanted to show that there were problems that were beyond any computer's ability to solve; in particular, he wanted to find a decision problem that he could prove was undecidable. To explain Turing's ideas, Bernhardt examines three well-known decision problems to explore the concept of undecidability; investigates theoretical computing machines, including Turing machines; explains universal machines; and proves that certain problems are undecidable, including Turing's problem concerning computable numbers.

Outlines the Bletchley Park mathematician's efforts to launch artificial intelligence innovations, describing his thwarted attempts to gain support for a programmable calculating machine, his contributions to cracking the Nazi Enigma code during World War II, and how the revelation of his homosexuality led to his tragic imprisonment and suicide. Reprint.

Bletchley Park was where one of the war’s most famous – and crucial – achievements was made: the cracking of Germany’s “Enigma” code in which its most important military communications were couched. This country house in the Buckinghamshire countryside was home to Britain’s most brilliant mathematical brains, like Alan Turing, and the scene of immense advances in technology – indeed, the birth of modern computing. The military codes deciphered there were instrumental in turning both the Battle of the Atlantic and the war in North Africa. But, though plenty has been written about the boffins, and the codebreaking, fictional and non-fiction – from Robert Harris and Ian McEwan to Andrew Hodges’ biography of Turing – what of the thousands of men and women who lived and worked there during the war? What was life like for them – an odd, secret territory between the civilian and the military? Sinclair McKay’s book is the first history for the general reader of life at Bletchley Park, and an amazing compendium of memories from people now in their eighties – of skating on the frozen lake in the grounds (a depressed Angus Wilson, the novelist, once threw himself in) – of a youthful Roy Jenkins, useless at codebreaking, of the high jinks at nearby accommodation hostels – and of the implacable secrecy that meant girlfriend and boyfriend working in adjacent huts knew nothing about each other’s work.