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PISA Take the Test Sample Questions from OECD's PISA Assessments Sample Questions from OECD's PISA Assessments OECD Publishing This book presents all the publicly available questions from the PISA surveys. Some of these questions were used in the PISA 2000, 2003 and 2006 surveys and others were used in developing and trying out the assessment. **Middle School Math with Pizzazz!: E. Ratio and proportion; Percent; Statistics and graphs; Probability; Integers; Coordinate graphing; Equations Summer Bridge Activities®, Grades 5 - 6 Canadian Edition** Rainbow Bridge Publishing Summer Bridge Activities(R) for bridging grades 5–6 is designed specifically for preparing Canadian fifth-grade students for the new year ahead. Reviewed by Canadian teachers and students, this workbook features daily activities in reading, writing, math, and language arts plus a bonus section focusing on character development and healthy lifestyles. The exercises are easy to understand and are presented in a way that allows your child to review familiar skills and then be progressively challenged on more difficult subjects. Give your children the head start they deserve with this fun, easy-to-use, award-winning series, and make learning a yearlong adventure! 160 full-colour perforated pages and an answer key. **Basic Category Theory** Cambridge University Press A short introduction ideal for students learning category theory for the first time. **Strengthening Forensic Science in the United States A Path Forward** National Academies Press Scores of talented and dedicated people serve the forensic science community, performing vitally important work. However, they are often constrained by lack of adequate resources, sound policies, and national support. It is clear that change and advancements, both systematic and scientific, are needed in a number of forensic science disciplines to ensure the reliability of work, establish enforceable standards, and promote best practices with consistent application. Strengthening Forensic Science in the United States: A Path Forward provides a detailed plan for addressing these needs and suggests the creation of a new government entity, the National Institute of Forensic Science, to establish and enforce standards within the forensic science community. The benefits of improving and regulating the forensic science disciplines are clear: assisting law enforcement officials, enhancing homeland security, and reducing the risk of wrongful conviction and exoneration. Strengthening Forensic Science in the United States gives a full account of what is needed to advance the forensic science disciplines, including upgrading of systems and organizational structures, better training, widespread adoption of uniform and enforceable best practices, and mandatory certification and accreditation programs. While this book provides an essential call-to-action for congress and policy makers, it also serves as a vital tool for law enforcement agencies, criminal prosecutors and attorneys, and forensic science educators. **Backpacker** Backpacker brings the outdoors straight to the reader's doorstep, inspiring and enabling them to go more places and enjoy nature more often. The authority on active adventure, Backpacker is the world's first GPS-enabled magazine, and the only magazine whose editors personally test the hiking trails, camping gear, and survival tips they publish. Backpacker's Editors' Choice Awards, an industry honor recognizing design, feature and product innovation, has become the gold standard against which all other outdoor-industry awards are measured. **Mathematics for Computer Science** This book covers elementary discrete mathematics for computer science and engineering. It emphasizes mathematical definitions and proofs as well as applicable methods. Topics include formal logic notation, proof methods; induction, well-ordering; sets, relations; elementary graph theory; integer congruences; asymptotic notation and growth of functions; permutations and combinations, counting principles; discrete probability. Further selected topics may also be covered, such as recursive definition and structural induction; state machines and invariants; recurrences; generating functions. **An Invitation to Applied Category Theory Seven Sketches in Compositionality** Cambridge University Press Category theory reveals commonalities between structures of all sorts. This book shows its potential in science, engineering, and beyond. **Invitation to Nonlinear Algebra** American Mathematical Soc. Nonlinear algebra provides modern mathematical tools to address challenges arising in the sciences and engineering. It is useful everywhere, where polynomials appear: in particular, data and computational sciences, statistics, physics, optimization. The book offers an invitation to this broad and fast-developing area. It is not an extensive encyclopedia of known results, but rather a first introduction to the subject, allowing the reader to enter into more advanced topics. It was designed as the next step after linear algebra and well before abstract algebraic geometry. The book presents both classical topics—like the Nullstellensatz and primary decomposition—and more modern ones—like tropical geometry and semidefinite programming. The focus lies on interactions and applications. Each of the thirteen chapters introduces fundamental concepts. The book may be used for a one-semester course, and the over 200 exercises will help the readers to deepen their understanding of the subject. **How Learning Works Seven Research-Based Principles for Smart Teaching** John Wiley & Sons Praise for How Learning Works "How Learning Works is the perfect title for this excellent book. Drawing upon new research in psychology, education, and cognitive science, the authors have demystified a complex topic into clear explanations of seven powerful learning principles. Full of great ideas and practical suggestions, all based on solid research evidence, this book is essential reading for instructors at all levels who wish to improve their students' learning." —Barbara Gross Davis, assistant vice chancellor for educational development, University of California, Berkeley, and author, Tools for Teaching "This book is a must-read for every instructor, new or experienced. Although I have been teaching for almost thirty years, as I read this book I found myself resonating with many of its ideas, and I discovered new ways of thinking about teaching." —Eugenia T. Paulus, professor of chemistry, North Hennepin Community College, and 2008 U.S. Community Colleges Professor of the Year from The Carnegie Foundation for the Advancement of Teaching and the Council for Advancement and Support of Education "Thank you Carnegie Mellon for making accessible what has previously been inaccessible to those of us who are not learning scientists. Your focus on the essence of learning combined with concrete examples of the daily challenges of teaching and clear tactical strategies for faculty to consider is a welcome work. I will recommend this book to all my colleagues." —Catherine M. Casserly, senior partner, The Carnegie Foundation for the Advancement of Teaching "As you read about each of the seven basic learning principles in this book, you will find advice that is grounded in learning theory, based on research evidence, relevant to college teaching, and easy to understand. The authors have extensive knowledge and experience in applying the science of learning to college teaching, and they graciously share it with you in this organized and readable book." —From the Foreword by Richard E. Mayer, professor of psychology, University of California, Santa Barbara; coauthor, e-Learning and the Science of Instruction; and author, Multimedia Learning **Popular Mechanics** Popular Mechanics inspires, instructs and influences readers to help them master the modern world. Whether it's practical DIY home-improvement tips, gadgets and digital technology, information on the newest cars or the latest breakthroughs in science -- PM is the ultimate guide to our high-tech lifestyle. **Mathematics and Computation A Theory Revolutionizing Technology and Science** Princeton University Press An introduction to computational complexity theory, its connections and interactions with mathematics, and its central role in the natural and social sciences, technology, and philosophy Mathematics and Computation provides a broad, conceptual overview of computational complexity theory—the mathematical study of efficient computation. With important practical applications to computer science and industry, computational complexity theory has evolved into a highly interdisciplinary field, with strong links to most mathematical areas and to a growing number of scientific endeavors. Avi Wigderson takes a sweeping survey of complexity theory, emphasizing the field's insights and challenges. He explains the ideas and motivations leading to key models, notions, and results. In particular, he looks at algorithms and complexity, computations and proofs, randomness and interaction, quantum and arithmetic computation, and cryptography and learning, all as parts of a cohesive whole with numerous cross-influences. Wigderson illustrates the immense breadth of the field, its beauty and richness, and its diverse and growing interactions with other areas of mathematics. He ends with a comprehensive look at the theory of computation, its methodology and aspirations, and the unique and fundamental ways in which it has shaped and will further shape science, technology, and society. For further reading, an extensive bibliography is provided for all topics covered. Mathematics and Computation is useful for undergraduate and graduate students in mathematics, computer science, and related fields, as well as researchers and teachers in these fields. Many parts require little background, and serve as an invitation to newcomers seeking an introduction to the theory of computation. Comprehensive coverage of computational complexity theory, and beyond High-level, intuitive exposition, which brings conceptual clarity to this central and dynamic scientific discipline Historical accounts of the evolution and motivations of central concepts and models A broad view of the theory of computation's influence on science, technology, and society Extensive bibliography **Why Don't Students Like School? A Cognitive Scientist Answers Questions About How the Mind Works and What It Means for the Classroom** John Wiley & Sons Easy-to-apply, scientifically-based approaches for engaging students in the classroom Cognitive scientist Dan Willingham focuses his acclaimed research on the biological and cognitive basis of learning. His book will help teachers improve their practice by explaining how they and their students think and learn. It reveals-the importance of story, emotion, memory, context, and routine in building knowledge and creating lasting learning experiences. Nine, easy-to-understand principles with clear applications for the classroom Includes surprising findings, such as that intelligence is malleable, and that you cannot develop "thinking skills" without facts How an understanding of the brain's workings can help teachers hone their teaching skills "Mr. Willingham's answers apply just as well outside the classroom. Corporate trainers, marketers and, not least, parents -anyone who cares about how we learn-should find his book valuable reading." —Wall Street Journal **Pre-algebra with Pizzazz! Series Bulletin of the Atomic Scientists** The Bulletin of the Atomic Scientists is the premier public resource on scientific and technological developments that impact global security. Founded by Manhattan Project Scientists, the Bulletin's iconic "Doomsday Clock" stimulates solutions for a safer world. **Math in Society** Math in Society is a survey of contemporary mathematical topics, appropriate for a college-level topics course for liberal arts major, or as a general quantitative reasoning course.This book is an open textbook; it can be read free online at http://www.opentextbookstore.com/mathinsociety/. Editable versions of the chapters are available as well. **Global Trends 2030 Alternative Worlds** Createspace Independent Publishing Platform This publication covers global megatrends for the next 20 years and how they will affect the United States. This is the fifth installment in the National Intelligence Council's series aimed at providing a framework for thinking about possible futures and their implications. The report is intended to stimulate strategic thinking about the rapid and vast geopolitical changes characterizing the world today and possible global trajectories during the next 15-20 years by identifying critical trends and potential discontinuities. The authors distinguish between megatrends, those factors that will likely occur under any scenario, and game-changers, critical variables whose trajectories are far less certain. NIC 2012-001. Several innovations are included in Global Trends 2030, including: a review of the four previous Global Trends reports, input from academic and other experts around the world, coverage of disruptive technologies, and a chapter on the potential trajectories for the US role in the international system and the possible the impact on future international relations. Table of Contents: Introduction 1 Megatrends 6 Individual Empowerment 8 Poverty Reduction 8 An Expanding Global Middle Class 8 Education and the Gender Gap 10 Role of Communications Technologies 11 Improving Health 11 A MORE CONFLICTED IDEOLOGICAL LANDSCAPE 12 Diffusion of Power 15 THE RISE AND FALL OF COUNTRIES: NOT THE SAME OLD STORY 17 THE LIMITS OF HARD POWER IN THE WORLD OF 2030 18 Demographic Patterns 20 Widespread Aging 20 Shrinking Number of Youthful Countries 22 A New Age of Migration 23 The World as Urban 26 Growing Food, Water, and Energy Nexus 30 Food, Water, and Climate 30 A Brighter Energy Outlook 34 Game-Changers 38 The Crisis-Prone Global Economy 40 The Plight of the West 40 Crunch Time Too for the Emerging Powers 43 A Multipolar Global Economy: Inherently More Fragile? 46 The Governance Gap 48 Governance Starts at Home: Risks and Opportunities 48 INCREASED FOCUS ON EQUALITY AND OPENNESS 53 NEW GOVERNMENTAL FORMS 54 A New Regional Order? 55 Global Multilateral Cooperation 55 The Potential for Increased Conflict 59 INTRASTATE CONFLICT: CONTINUED DECLINE 59 Interstate Conflict: Chances Rising 61 Wider Scope of Regional Instability 70 The Middle East: At a Tipping Point 70 South Asia: Shocks on the Horizon 75 East Asia: Multiple Strategic Futures 76 Europe: Transforming Itself 78 Sub-Saharan Africa: Turning a Corner by 2030? 79 Latin America: More Prosperous but Inherently Fragile 81 The Impact of New Technologies 83 Information Technologies 83 AUTOMATION AND MANUFACTURING TECHNOLOGIES 87 Resource Technologies 90 Health Technologies 95 The Role of the United States 98 Steady US Role 98 Multiple Potential Scenarios for the United States' Global Role 101 Alternative Worlds 107 Stalled Engines 110 FUSION 116 Gini-out-of-the-Bottle 122 Nonstate World 128 Acknowledgements 134 GT2030 Blog References 137 Audience: Appropriate for anyone, from businesses to banks, government agencies to start-ups, the technology sector to the teaching sector, and more. This publication helps anticipate where the world will be: socially, politically, technologically, and culturally over the next few decades. Keywords: Global Trends 2030 Alternative Worlds, global trends 2030, Global Trends series, National Intelligence Council, global trajectories, global megatrends, geopolitics, geopolitical changes **School, Family, and Community Partnerships Your Handbook for Action** Corwin Press Strengthen family and community engagement to promote equity and increase student success! When schools, families, and communities collaborate and share responsibility for students' education, more students succeed in school. Based on 30 years of research and fieldwork, this fourth edition of a bestseller provides tools and guidelines to use to develop more effective and equitable programs of family and

community engagement. Written by a team of well-known experts, this foundational text demonstrates a proven approach to implement and sustain inclusive, goal-oriented programs. Readers will find: Many examples and vignettes Rubrics and checklists for implementation of plans CD-ROM complete with slides and notes for workshop presentations **A Taxonomy for Learning, Teaching, and Assessing A Revision of Bloom's Taxonomy of Educational Objectives** Pearson This revision of Bloom's taxonomy is designed to help teachers understand and implement standards-based curriculums. Cognitive psychologists, curriculum specialists, teacher educators, and researchers have developed a two-dimensional framework, focusing on knowledge and cognitive processes. In combination, these two define what students are expected to learn in school. It explores curriculums from three unique perspectives-cognitive psychologists (learning emphasis), curriculum specialists and teacher educators (C & I emphasis), and measurement and assessment experts (assessment emphasis). This revisited framework allows you to connect learning in all areas of curriculum. Educators, or others interested in educational psychology or educational methods for grades K-12. **The Perks of Being a Wallflower** Simon and Schuster Charlie struggles to cope with complex world of high school as he deals with the confusions of sex and love, the temptations of drugs, and the pain of losing a close friend and a favorite aunt. **Global Innovation Index 2020 Who Will Finance Innovation?** WIPO The Global Innovation Index 2020 provides detailed metrics about the innovation performance of 131 countries and economies around the world. Its 80 indicators explore a broad vision of innovation, including political environment, education, infrastructure and business sophistication. The 2020 edition sheds light on the state of innovation financing by investigating the evolution of financing mechanisms for entrepreneurs and other innovators, and by pointing to progress and remaining challenges – including in the context of the economic slowdown induced by the coronavirus disease (COVID-19) crisis. **pt. 1. Notes Cooperative Learning and Algebra** Kagan Cooperative Learning In this book, master teacher, trainer, and celebrated math author Becky Bride will show you step-by-step, activity-by-activity, and lesson-by-lesson how she used cooperative learning structures to help her students succeed with algebra year after year. When the power of student-to-student interaction is unleashed in algebra, students enjoy learning more and the abstract algebraic concepts become more concrete and understandable. **Alcoholics Anonymous The Story of how Many Thousands of Men and Women Have Recovered from Alcoholism** The basic text for Alcoholics Anonymous. **Nineteen Eighty-Four** epubli "Nineteen Eighty-Four: A Novel", often published as "1984", is a dystopian social science fiction novel by English novelist George Orwell. It was published on 8 June 1949 by Secker & Warburg as Orwell's ninth and final book completed in his lifetime. Thematically, "Nineteen Eighty-Four" centres on the consequences of totalitarianism, mass surveillance, and repressive regimentation of persons and behaviours within society. Orwell, himself a democratic socialist, modelled the authoritarian government in the novel after Stalinist Russia. More broadly, the novel examines the role of truth and facts within politics and the ways in which they are manipulated. The story takes place in an imagined future, the year 1984, when much of the world has fallen victim to perpetual war, omnipresent government surveillance, historical negationism, and propaganda. Great Britain, known as Airstrip One, has become a province of a totalitarian superstate named Oceania that is ruled by the Party who employ the Thought Police to persecute individuality and independent thinking. Big Brother, the leader of the Party, enjoys an intense cult of personality despite the fact that he may not even exist. The protagonist, Winston Smith, is a diligent and skillful rank-and-file worker and Outer Party member who secretly hates the Party and dreams of rebellion. He enters into a forbidden relationship with a colleague, Julia, and starts to remember what life was like before the Party came to power. **Democracy and Education** Read Books Ltd This antiquarian volume contains a comprehensive treatise on democracy and education, being an introduction to the 'philosophy of education'. Written in clear, concise language and full of interesting expositions and thought-provoking assertions, this volume will appeal to those with an interest in the role of education in society, and it would make for a great addition to collections of allied literature. The chapters of this book include: 'Education as a Necessity of Life'; 'Education as a Social Function'; 'Education as Direction'; 'Education as Growth'; 'Preparation, Unfolding, and Formal Discipline'; 'Education as Conservative and Progressive'; 'The Democratic Conception in Education'; 'Aims in Education', etcetera. We are republishing this vintage book now complete with a new prefatory biography of the author. **Edexcel GCSE (9-1) Business, Second Edition** Hachette UK Exam Board: Edexcel Level: GCSE Subject: Business First Teaching: September 2017 First Exam: June 2019 Endorsed for Edexcel Let Ian Marcouse successfully steer you through the new specification with his proven and popular approach to Business; clear content coverage is enhanced by numerous real-life examples to create a course that engages, motivates and develops every student. - Breaks down the content of the 2017 specification into clear, accessible explanations of important concepts and theories - Helps students apply their knowledge to a range of real business examples, issues and contexts, supported by 'Talking Points' that encourage critical and commercial thinking - Improves quantitative, investigative, analytical and evaluation skills through end-of-chapter exercises - Builds students' confidence approaching their exams as they practise calculation, short answer and extended-writing questions with stimulus materials - Boosts students' vocabulary and supports revision with definitions of key terminology for each topic **Anandamath: Dawn Over India** Library of Alexandria It was hot at Padachina even for a summer day. In this village were many houses, but not a soul could be seen anywhere. The bazaar was full of shops and the lanes were lined with houses built either of brick or of mud. Every house was quiet. The shops were closed, and no one knew where the shopkeepers had gone. Even the street beggars were absent. The weavers wove no more. The merchants had no business. Philanthropic persons had nothing to give. Teachers closed their schools. Things had come to such a pass that children were even afraid to cry. The streets were empty. There were no bathers in the river. There were no human beings about the houses, no birds in the trees, no cattle in the pastures. Jackals and dogs morosely prowled in the graveyards and in the cremation grounds. One great house stood in this village. Its colossal pillars could be seen from a distance. But its doors were closed so tight that it was almost impossible for even a breath of air to enter. Within the house a man and his wife sat deeply absorbed in thought. Mahendra Singh and his wife were face to face with famine. The year before the harvests had been below normal. So rice was expensive this year and people began to suffer. Then during the rainy season it rained plentifully. The villagers at first looked upon this as a special mercy of God. Cowherds sang in joy, and the wives of the peasants began to pester their husbands for silver ornaments. All of a sudden, God frowned again. Not a drop of rain fell during the remaining months of the season. The rice fields dried into heaps of straw. Here and there a few fields yielded poor crops, but government agents bought these up for the army. So people began to starve again. At first they lived on one meal a day. Soon, even that became scarce, and they began to go without any food at all. The crop was too scanty, but the government revenue collector sought to advance his personal prestige by increasing the land revenue by ten per cent. And in dire misery Bengal shed bitter tears. Beggars increased in such numbers that charity soon became the most difficult thing to practise. Then disease began to spread. Farmers sold their cattle and their ploughs and ate up the seed grain. Then they sold their homes and farms. For lack of food they soon took to eating leaves of trees, then grass and when the grass was gone they ate weeds. People of certain castes began to eat cats, dogs and rats. **Global Trends 2030 Alternative Worlds : a Publication of the National Intelligence Council** U.S. Government Printing Office This report is intended to stimulate thinking about the rapid and vast geopolitical changes characterizing the world today and possible global trajectories over the next 15 years. As with the NIC's previous Global Trends reports, we do not seek to predict the future, which would be an impossible feat, but instead provide a framework for thinking about possible futures and their implications. In-depth research, detailed modeling and a variety of analytical tools drawn from public, private and academic sources were employed in the production of Global Trends 2030. NIC leadership engaged with experts in nearly 20 countries, from think tanks, banks, government offices and business groups, to solicit reviews of the report. **Sophie's World** Hachette UK The international bestseller about life, the universe and everything. When 14-year-old Sophie encounters a mysterious mentor who introduces her to philosophy, mysteries deepen in her own life. Why does she keep getting postcards addressed to another girl? Who is the other girl? And who, for that matter, is Sophie herself? To solve the riddle, she uses her new knowledge of philosophy, but the truth is far stranger than she could have imagined. A phenomenal worldwide bestseller, SOPHIE'S WORLD sets out to draw teenagers into the world of Socrates, Descartes, Spinoza, Hegel and all the great philosophers. A brilliantly original and fascinating story with many twists and turns, it raises profound questions about the meaning of life and the origin of the universe. **Concrete Mathematics: A Foundation for Computer Science** Pearson Education India **Investing in Cultural Diversity and Intercultural Dialogue** UNESCO This report analyses all aspects of cultural diversity, which has emerged as a key concern of the international community in recent decades, and maps out new approaches to monitoring and shaping the changes that are taking place. It highlights, in particular, the interrelated challenges of cultural diversity and intercultural dialogue and the way in which strong homogenizing forces are matched by persistent diversifying trends. The report proposes a series of ten policy-oriented recommendations, to the attention of States, intergovernmental and non-governmental organizations, international and regional bodies, national institutions and the private sector to invest in cultural diversity. Emphasizing the importance of cultural diversity in different areas (languages, education, communication and new media development, and creativity and the marketplace) based on data and examples collected from around the world, the report is also intended for the general public. It proposes a coherent vision of cultural diversity and clarifies how, far from being a threat, it can become beneficial to the action of the international community. **A Relativist's Toolkit The Mathematics of Black-Hole Mechanics** Cambridge University Press This 2004 textbook fills a gap in the literature on general relativity by providing the advanced student with practical tools for the computation of many physically interesting quantities. The context is provided by the mathematical theory of black holes, one of the most elegant, successful, and relevant applications of general relativity. Among the topics discussed are congruencies of timelike and null geodesics, the embedding of spacelike, timelike and null hypersurfaces in spacetime, and the Lagrangian and Hamiltonian formulations of general relativity. Although the book is self-contained, it is not meant to serve as an introduction to general relativity. Instead, it is meant to help the reader acquire advanced skills and become a competent researcher in relativity and gravitational physics. The primary readership consists of graduate students in gravitational physics. It will also be a useful reference for more seasoned researchers working in this field. **Project Management Case Studies** John Wiley & Sons A new edition of the most popular book of project management case studies, expanded to include more than 100 cases plus a "super case" on the Iridium Project Case studies are an important part of project management education and training. This Fourth Edition of Harold Kerzner's Project Management Case Studies features a number of new cases covering value measurement in project management. Also included is the well-received "super case," which covers all aspects of project management and may be used as a capstone for a course. This new edition: Contains 100-plus case studies drawn from real companies to illustrate both successful and poor implementation of project management Represents a wide range of industries, including medical and pharmaceutical, aerospace, manufacturing, automotive, finance and banking, and telecommunications Covers cutting-edge areas of construction and international project management plus a "super case" on the Iridium Project, covering all aspects of project management Follows and supports preparation for the Project Management Professional (PMP®) Certification Exam Project Management Case Studies, Fourth Edition is a valuable resource for students, as well as practicing engineers and managers, and can be used on its own or with the new Eleventh Edition of Harold Kerzner's landmark reference, Project Management: A Systems Approach to Planning, Scheduling, and Controlling. (PMP and Project Management Professional are registered marks of the Project Management Institute, Inc.) **Proof and Disproof in Formal Logic An Introduction for programmers** OUP Oxford Proof and Disproof in Formal Logic is a lively and entertaining introduction to formal logic providing an excellent insight into how a simple logic works. Formal logic allows you to check a logical claim without considering what the claim means. This highly abstracted idea is an essential and practical part of computer science. The idea of a formal system—a collection of rules and axioms which define a universe of logical proofs—is what gives us programming languages and modern-day programming. This book concentrates on using logic as a tool: making and using formal proofs and disproofs of particular logical claims. The logic it uses—natural deduction—is very small and very simple; working with it helps you see how large mathematical universes can be built on small foundations. The book is divided into four parts: · Part I "Basics" gives an introduction to formal logic with a short history of logic and explanations of some technical words. · Part II "Formal syntactic proof" show you how to do calculations in a formal system where you are guided by shapes and never need to think about meaning. Your experiments are aided by Jape, which can operate as both inquisitor and oracle. · Part III "Formal semantic disproof" shows you how to construct mathematical counterexamples to show that proof is impossible. Jape can check the counterexamples you build. · Part IV "Program specification and proof" describes how to apply your logical understanding to a real computer science problem, the accurate description and verification of programs. Jape helps, as far as arithmetic allows. Aimed at undergraduates and graduates in computer science, logic, mathematics, and philosophy, the text includes reference to and exercises based on the computer software package Jape, an interactive teaching and research tool designed and hosted by the author that is freely available on the web. **Historical Painting Techniques, Materials, and Studio Practice Preprints of a Symposium, University of Leiden, the Netherlands, 26–29 June 1995** Getty Publications Bridging the fields of conservation, art history, and museum curating, this volume contains the principal papers from an international symposium titled "Historical Painting Techniques, Materials, and Studio Practice" at the University of Leiden in Amsterdam, Netherlands, from June 26 to 29, 1995. The symposium—designed for art historians, conservators, conservation scientists, and museum curators worldwide—was organized by the Department of Art History at the University of Leiden and the Art History Department of the Central Research Laboratory for Objects of Art and Science in Amsterdam. Twenty-five contributors representing museums and conservation institutions throughout the world provide recent research on historical painting techniques, including wall painting and polychrome sculpture. Topics cover the latest art historical research and scientific analyses of original techniques and materials, as well as historical sources, such as medieval treatises and descriptions of painting techniques in historical literature. Chapters include the painting methods of Rembrandt and Vermeer, Dutch 17th-century landscape painting, wall paintings in English churches, Chinese paintings on paper and canvas, and Tibetan thangkas. Color plates and black-and-white photographs illustrate works from the Middle Ages to the 20th century. **Math from Three to Seven The Story of a Mathematical Circle for Preschoolers** American Mathematical Soc. This book is a captivating account of a professional mathematician's experiences conducting a math circle for preschoolers in his apartment in Moscow in the 1980s. As anyone who has taught or raised young children knows, mathematical education for little kids is a real mystery. What are they capable of? What

should they learn first? How hard should they work? Should they even "work" at all? Should we push them, or just let them be? There are no correct answers to these questions, and the author deals with them in classic math-circle style: he doesn't ask and then answer a question, but shows us a problem--be it mathematical or pedagogical--and describes to us what happened. His book is a narrative about what he did, what he tried, what worked, what failed, but most important, what the kids experienced. This book does not purport to show you how to create precocious high achievers. It is just one person's story about things he tried with a half-dozen young children. Mathematicians, psychologists, educators, parents, and everybody interested in the intellectual development in young children will find this book to be an invaluable, inspiring resource. In the interest of fostering a greater awareness and appreciation of mathematics and its connections to other disciplines and everyday life, MSRI and the AMS are publishing books in the Mathematical Circles Library series as a service to young people, their parents and teachers, and the mathematics profession. Titles in this series are co-published with the Mathematical Sciences Research Institute (MSRI). **Information—Consciousness—Reality How a New Understanding of the Universe Can Help Answer Age-Old Questions of Existence** Springer This open access book chronicles the rise of a new scientific paradigm offering novel insights into the age-old enigmas of existence. Over 300 years ago, the human mind discovered the machine code of reality: mathematics. By utilizing abstract thought systems, humans began to decode the workings of the cosmos. From this understanding, the current scientific paradigm emerged, ultimately discovering the gift of technology. Today, however, our island of knowledge is surrounded by ever longer shores of ignorance. Science appears to have hit a dead end when confronted with the nature of reality and consciousness. In this fascinating and accessible volume, James Glattfelder explores a radical paradigm shift uncovering the ontology of reality. It is found to be information-theoretic and participatory, yielding a computational and programmable universe. **How I Became a Quant Insights from 25 of Wall Street's Elite** John Wiley & Sons Praise for How I Became a Quant "Led by two top-notch quants, Richard R. Lindsey and Barry Schachter, How I Became a Quant details the quirky world of quantitative analysis through stories told by some of today's most successful quants. For anyone who might have thought otherwise, there are engaging personalities behind all that number crunching!" --Ira Kawaller, Kawaller & Co. and the Kawaller Fund "A fun and fascinating read. This book tells the story of how academics, physicists, mathematicians, and other scientists became professional investors managing billions." --David A. Krell, President and CEO, International Securities Exchange "How I Became a Quant should be must reading for all students with a quantitative aptitude. It provides fascinating examples of the dynamic career opportunities potentially open to anyone with the skills and passion for quantitative analysis." --Roy D. Henriksson, Chief Investment Officer, Advanced Portfolio Management "Quants"--those who design and implement mathematical models for the pricing of derivatives, assessment of risk, or prediction of market movements--are the backbone of today's investment industry. As the greater volatility of current financial markets has driven investors to seek shelter from increasing uncertainty, the quant revolution has given people the opportunity to avoid unwanted financial risk by literally trading it away, or more specifically, paying someone else to take on the unwanted risk. How I Became a Quant reveals the faces behind the quant revolution, offering you?the?chance to learn firsthand what it's like to be a?quant today. In this fascinating collection of Wall Street war stories, more than two dozen quants detail their roots, roles, and contributions, explaining what they do and how they do it, as well as outlining the sometimes unexpected paths they have followed from the halls of academia to the front lines of an investment revolution. **The Quest for Artificial Intelligence** Cambridge University Press Artificial intelligence (AI) is a field within computer science that is attempting to build enhanced intelligence into computer systems. This book traces the history of the subject, from the early dreams of eighteenth-century (and earlier) pioneers to the more successful work of today's AI engineers. AI is becoming more and more a part of everyone's life. The technology is already embedded in face-recognizing cameras, speech-recognition software, Internet search engines, and health-care robots, among other applications. The book's many diagrams and easy-to-understand descriptions of AI programs will help the casual reader gain an understanding of how these and other AI systems actually work. Its thorough (but unobtrusive) end-of-chapter notes containing citations to important source materials will be of great use to AI scholars and researchers. This book promises to be the definitive history of a field that has captivated the imaginations of scientists, philosophers, and writers for centuries.