

PO LEUNG KUK MATH COMPETITION

Eventually, you will categorically discover a further experience and realization by spending more cash. yet when? accomplish you say yes that you require to acquire those all needs in the same way as having significantly cash? Why dont you try to acquire something basic in the beginning? Thats something that will guide you to comprehend even more approximately the globe, experience, some places, once history, amusement, and a lot more?

It is your unquestionably own period to feat reviewing habit. in the midst of guides you could enjoy now is **PO LEUNG KUK MATH COMPETITION** below.

Creativity and Democracy in Education Jeff Adams 2015-07-16 The struggle to establish more democratic education pedagogies has a long history in the politics of mainstream education. This book argues for the significance of the creative arts in the establishment of social justice in education, using examples drawn from a selection of contemporary case studies including Japanese applied drama, Palestinian teacher education and Room 13 children's contemporary art. Jeff Adams and Allan Owens use their research in practice to explore creativity conceptually, historically and metaphorically within a variety of UK and international contexts, which are analysed using political and social theories of democratic and relational education. Each chapter discusses the relationship between models of democratic creativity and the cultural conditions in which they are practised, with a focus on new critical pedagogies that have developed in response to neoliberalism and marketization in education. The book is structured throughout by the theories, practices and the ideals that were once considered to be foundational for education: democratic citizenship and a just society. Creativity and Democracy in Education will be of key interest to postgraduate students, researchers, and academics in the field of education, especially those interested in the arts and creativity, democratic learning, teacher education, cultural and organisational studies, and political theories of education.

CARA BERPIKIR SUPRARASIONAL Raden Ridwan Hasan Saputra 2017-06-20 Berharap bisa sepi dari masalah, pasti hanya mimpi.

Namun, kita bisa dengan mudah menemukan solusi saat masalah datang menghampiri. Berkeinginan memiliki kekayaan yang melimpah, tentu tidaklah mudah. Namun, bila setiap kebutuhan kita terpenuhi dan tercukupi dari jalan yang tak terduga bukankah itu anugerah terindah? Keduanya bisa kita wujudkan, asal kita mau mengubah cara berpikir kita. Didasarkan pada pengalaman penulis mengembangkan lembaga pendidikan dengan Sistem Metode Seikhlasnya (SMS) yang sukses mengantarkan siswanya berprestasi di tingkat dunia, buku ini mengajak kita untuk menghadapi kehidupan ini dengan cara berpikir suprarasional. Jika kita berpikir rasional, tentu Sistem Metode Seikhlasnya akan menyebabkan lembaga pendidikan yang menerapkannya akan bangkrut. Ternyata tidak, justru berkembang. Bahkan telah membuka cabang. Inilah cara kerja berpikir suprarasional. Jalannya tak terduga. Buku persembahan Republika Penerbit [Republika, bukurepublika, Penerbit Republika] *Super Genius Olimpiade Matematika SD* Essential Concepts of Set Theory Robert S. Y. Wong 2016-07-01 For thousands of years, it is generally believed that mathematics begins with the natural numbers and counting. But there is something more fundamental than counting. It is the grouping of things. If a child is shown a picture of a farm with sheep and cows here and there and asked to count the number of sheep, the child would first put the sheep in a group mentally and then count the number of sheep in the group. Without grouping, counting cannot happen. Therefore, mathematics begins with the grouping of objects, which is the object of study of set theory. In this book, we explore the

fundamental concepts of sets and related topics: propositional logic, methods of proof, relations and functions. Unlike the technical approach adopted in most books, we use many everyday examples to show that these concepts can be found everywhere in our daily life. The book also has plenty of exercises and solutions to all exercises are provided.

Advances in Computer Systems Architecture

Thambipillai Srikanthan 2005-10-19 On behalf of the Program Committee, we are pleased to present the proceedings of the 2005 Asia-Pacific Computer Systems Architecture Conference (ACSAC 2005) held in the beautiful and dynamic country of Singapore. This conference was the tenth in its series, one of the leading forums for sharing the emerging research findings in this field. In consultation with the ACSAC Steering Committee, we selected a 19-member Program Committee. This Program Committee represented a broad spectrum of research expertise to ensure a good balance of research areas, institutions and experience while maintaining the high quality of this conference series. This year's committee was of the same size as last year but had 19 new faces. We received a total of 173 submissions which is 14% more than last year. Each paper was assigned to at least three and in some cases four Program Committee members for review. Wherever necessary, the committee members called upon the expertise of their colleagues to ensure the highest possible quality in the reviewing process. As a result, we received 415 reviews from the Program Committee members and their 105 co-reviewers whose names are acknowledged in the

proceedings. The conference committee adopted a systematic blind review process to provide a fair assessment of all submissions. In the end, we accepted 65 papers on a broad range of topics giving an acceptance rate of 37.5%. We are grateful to all the Program Committee members and the co-reviewers for their efforts in completing the reviews within a tight schedule.

Rehabilitasi Kotagede Setelah Gempa Yogyakarta Pusat Data Dan Analisa Tempo Rehabilitasi Kotagede Setelah Gempa Yogyakarta

The Contest Problem Book VII: American Mathematics Competitions, 1995-2000 Contests

Harold B. Reiter 2019-01-24 This is the seventh book of problems and solutions from the Mathematics Competitions. Contest Problem Book VII chronicles 275 problems from the American Mathematics Contests (AMC 12 and AMC 10 for the years 1995 through 2000, including the 50th Anniversary AHSME issued in 1999). Twenty-three additional problems with solutions are included. A Problem Index classifies the 275 problems in to the following subject areas: Algebra, Complex Numbers, Discrete Mathematics (including Counting Problems), Logic, and Discrete Probability, Geometry (including Three Dimensional Geometry), Number Theory (including Divisibility, Representation, and Modular Arithmetic), Statistics, and Trigonometry. For over 50 years many excellent exams have been prepared by individuals throughout our mathematical community in the hope that all secondary school students will have an opportunity to participate in these problem solving and enriching mathematics experiences. The American Mathematics Contests are intended for everyone from the average student at a typical school who enjoys mathematics to the very best student at the most special school.

Abstracts of Papers Presented to the American Mathematical Society American Mathematical Society 2003

Competitions for Young Mathematicians

Alexander Soifer 2017-06-15 This book gathers the best presentations from the Topic Study Group 30: Mathematics Competitions at ICME-13 in Hamburg, and some from related groups, focusing on the field of working with gifted students. Each of the chapters includes not only original ideas, but also original mathematical problems and their solutions. The book is a valuable resource for researchers in mathematics education, secondary and college mathematics teachers around the globe as well as their gifted students.

Kumpulan Soal Unik Matematika 1

People of Today 2001

Tempo 2008

Allelopathy Manuel J. Reigosa 2006-02-28 There are many good books in the market dealing with the subject of allelopathy. When we designed the outline of this new book, we thought that it should include as many different points of view

as possible, although in an integrated general scheme. Allelopathy can be viewed from different of perspectives, ranging from the molecular to the ecosystem level, and including molecular biology, plant biochemistry, plant physiology, plant ecophysiology and ecology, with information coming also from the organic chemistry, soil sciences, microbiology and many other scientific disciplines. This book was designed to include a complete perspective of allelopathic process. The book is divided into seven major sections. The first chapter explores the international development of allelopathy as a science and next section deals with methodological aspects and it explores potential limitations of actual research. Third section is devoted to physiological aspects of allelopathy. Different specialists wrote about photosynthesis, cell cycle, detoxification processes, abiotic and biotic stress, plant secondary metabolites and respiration related to allelopathy. Chapters 13 through 16 are collectively devoted to various aspects of plant ecophysiology on a variety of levels: microorganisms, soil system and weed germination. Fundamental ecology approaches using both experimental observations and theoretical analysis of allelopathy are described in chapters 16 and 17. Those chapters deal with the possible evolutionary forces that have shaped particular strategies. In the section named "allelopathy in different environments", authors primarily center on marine, aquatic, forest and agro ecosystems. Last section includes chapters addressing application of the knowledge of allelopathy.

Anion Sensing Eric V. Anslyn 2005-05-06 with contributions by numerous experts
Advanced Nutrition and Dietetics in Diabetes
Louise Goff 2015-10-20 Published on behalf of The British Dietetic Association, Advanced Nutrition and Dietetics in Diabetes is an exploration of the evidence and practice of nutrition in diabetes, offering a global view of the lifestyle interventions for the prevention and management of diabetes, including management of complications and special population groups. With internationally recognised authors, this book applies the rigour of evidence-based medicine to important enduring topics in diabetes, such as: public health efforts at diabetes prevention formulating nutritional

guidelines for diabetes carbohydrates and the glycaemic index the management of diabetes in older people The authors draw on their research and practical experience to offer sound guidance on best practice, ensuring that interventions are both scientifically secure and effective. ABOUT THE SERIES Dietary recommendations need to be based on solid evidence, but where can you find this information? The British Dietetic Association and the publishers of the Manual of Dietetic Practice present an essential and authoritative reference series on the evidence base relating to advanced aspects of nutrition and diet in selected clinical specialties. Each book provides a comprehensive and critical review of key literature in its subject. Each covers established areas of understanding, current controversies and areas of future development and investigation, and is oriented around six key themes: Disease processes, including metabolism, physiology, and genetics Disease consequences, including morbidity, mortality, nutritional epidemiology and patient perspectives Nutritional consequences of diseases Nutritional assessment, drawing on anthropometric, biochemical, clinical, dietary, economic and social approaches Clinical investigation and management Nutritional and dietary management Trustworthy, international in scope, and accessible, Advanced Nutrition and Dietetics is a vital resource for a range of practitioners, researchers and educators in nutrition and dietetics, including dietitians, nutritionists, doctors and specialist nurses. Please note Due to recent developments in this area, Chapter 4.3 on Nutritional management of glycaemia in type 2 diabetes has been withdrawn from the publication, and all future reprints will be replaced by a new chapter. All ebook versions are already updated. The contributor retains copyright to this chapter whilst their name still appears associated to the chapter.

Hogart the Hedgehog Turns Nink Blair Reeve 2015-12-01

The Other Hundred Educators Global Institute
Global Institute For Tomorrow 2017-03 The world of education is far more diverse and a great deal more interesting than the mainstream media would have us believe. The notion that our most valuable educators might have more to

offer than entry to elite schools forever striving for the top of dubious rankings is all-too-rarely acknowledged in today's society. Questioning our conventional understanding, *The Other Hundred Educators* introduces the people who have pioneered unique ways of teaching that have changed the lives of many. In many cases they have made more profound and life-altering contributions to the expansion of human knowledge than any formal institution -- and yet you will never see their names at the top of so-called official rankings and league tables. From the Madrasah teachers of Tul Banat, Pakistan, who teach girls history, Arabic and the Qur'an to Alice Waters of the Edible Schoolyard project in America, who has been teaching health and nutrition by converting gardens and kitchens into classrooms, this is a celebration of 100 educators whose names you should know.

The Dragon and the Crown Stanley S.K. Kwan 2008-11-01 In his autobiography Stanley S.K. Kwan discusses his roots, Hong Kong after the War, Hang Seng Bank, the new China and home and country.

Who's Who in Science and Engineering 2008-2009 Marquis Who's Who, Inc. 2007-12
Algebras and Combinatorics K. P. Shum 1999 This volume contains the refereed and edited versions of papers presented at the First International Congress in Algebra & Combinatorics, held in July 1997 in Hong Kong. Research work in algebra and combinatorics, which has never been published before, is introduced, along with expository papers in semigroups, groups, rings, general algebras, ordered algebras, graphs and combinatorics. The work is a useful reference book for researchers and graduate students working in these fields of mathematics.

The Peak in the Middle Mark E. Saul 2010 Good teaching is responsive to individual differences, tailoring instruction to meet the needs of individual learners. In gifted education, students need a curriculum that is differentiated (by level, complexity, breadth, and depth), developmentally appropriate, and conducted at a more rapid rate. This collection of essays from experts in the field addresses the particular needs educational institutions have in serving their gifted students. Topics include policy and philosophy; specific program models;

supplemental materials and programs; knowledge and skills that teachers need in their work; international opportunities and possibilities; and equity. Many of the points raised are as valid for general education students as for gifted students. Many relate equally well to high school or elementary school. And many apply across the curriculum--not just to mathematics. This book contains nine chapters: (1) Philosophy and Policies to Guide Middle School Mathematics Instruction: Issues of Identification, Acceleration, and Grouping (Tamra Stambaugh and Camilla P. Benbow); (2) Program Models: Matching the Program to the Abilities, Needs, and Interests of Mathematically Talented Students (Ann Lupkowski-Shoplik); (3) Using Curriculum to Develop Mathematical Promise in the Middle Grades (M. Katherine Gavin and Linda Jensen Sheffield); (4) Preparing Teachers for Mathematically Talented Middle School Students (Carole Greenes, Dawn Teuscher, and Troy P. Regis); (5) Extracurricular Opportunities for Mathematically Gifted Middle School Students (Richard Rusczyk); (6) Articulation (Janet Lynne Tassell, Rebecca Ruth Stobaugh, Beth Duvall Fleming, and Chloe R. Harper); (7) Middle School Geometry: a Case Study (John Benson); (8) Equity (Max Warshauer, Terry McCabe, M. Alejandra Sorto, Sharon Strickland, Hiroko Warshauer, and Alex White); and (9) Inspiring and Developing Student Interest: Several Examples from Foreign Schools (Alexander Karp). A preface and afterword are also included.

Kumpulan Soal Unik Matematika 2

Siap Mhdp UN 09 Bhs Ind SMA/MA
Penilaian Otentik Dalam Pembelajaran Bahasa Burhan Nurgiantoro 2018-07-11 Kurikulum Berbasis Kompetensi, yang kini bernama Kurikulum Tingkat Satuan Pendidikan (KTSP), menekankan capaian kompetensi untuk melakukan sesuatu sesuai dengan karakteristik tiap mata pelajaran. Hal itu antara lain ditandai dengan pelaksanaan pembelajaran yang mempergunakan pendekatan pembelajaran kontekstual (CTL, Contextual Teaching and Learning). Pendekatan pembelajaran kontekstual, pada giliran selanjutnya, menghendaki penilaian hasil pembelajaran dengan mempergunakan model penilaian otentik (Authentic Assessment). Penilaian otentik dalam

pembelajaran memrasyarkan dua hal yang mesti ada, yaitu kinerja dan bermakna. Dalam mata pelajaran Bahasa (Indonesia), hal itu berarti bahwa pengukuran hasil pembelajaran harus berupa kinerja berbahasa aktif produktif yang mencerminkan kebutuhan kehidupan nyata tersebut. Berbagai kinerja berbahasa yang diujikan di kelas haruslah mencerminkan kebutuhan kinerja berbahasa yang sesungguhnya atau yang dibutuhkan di dunia kerja. Penilaian otentik tidak dimaksudkan untuk menggantikan penilaian tradisional, khususnya bentuk tes objektif pilihan ganda yang lebih bersifat merespons jawaban yang lazim dipergunakan dalam ujian-ujian akhir seperti ujian nasional (UN) dan ulangan umum (UU). Ia hadir untuk saling melengkapi dan menutup kekurangan penilaian objektif. Skor hasil pengukuran penilaian otentik mencerminkan kompetensi berbagai bentuk kinerja berbahasa peserta didik sepanjang kegiatan pembelajaran, sedang skor hasil pengukuran tes objektif pada akhir pembelajaran menunjukkan capaian kompetensi selama satuan waktu tertentu. Berbagai hal terkait dengan penilaian otentik dikemukakan dalam buku ini, termasuk pengolahan skor-skor hasil pengukuran, dan tidak menutup kemungkinan untuk dipakai dalam mata pelajaran bahasa-bahasa yang lain. Selain itu, model penilaian otentik yang dikembangkan dalam buku ini juga dapat dipergunakan untuk sekolah-sekolah jenjang yang lain, misalnya SMA dan SMK, dengan sedikit penyesuaian jika diperlukan. [UGM Press, UGM, Gadjah Mada University Press] *The Art of Problem Solving, Volume 1* Sandor Lehoczky 2006-08-01 "...offer[s] a challenging exploration of problem solving mathematics and preparation for programs such as MATHCOUNTS and the American Mathematics Competition."--Back cover *Epidemiology Unmasked* Stephanie Wang 2020-06-29 This introductory epidemiology book provides an easy approach to understanding infectious disease outbreaks. This book is perfect for anyone with an ambition to learn about health-related concepts and take on an intellectual challenge, including those with little to no background in public health. The book aims to spread awareness about epidemiology so that people can understand the impact of their

actions and act responsibly in the future, as well as make the general population more prepared for the next public health crisis. It provides a friendly introduction to topics such as infectious diseases, epidemiological study designs, and a step-by-step breakdown of the COVID-19 pandemic. Editorial Reviews: "Stephanie, great job on this book. I enjoyed reading it and I see you did lots of research into it and you were right to the point. It reads very nicely and clearly. You are set to become a successful epidemiologist!!" - Dr. Roy Chemaly, MD, Director of Infection Control, MD Anderson Cancer Center; Professor of Epidemiology, University of Texas School of Public Health "Brilliant, easy-to-read, and an amazing resource for every ambitious epidemiology student. *Epidemiology Unmasked* provides a gentle introduction to the hallmark of public health—epidemiology. I read the book from beginning to end, and every moment was full of enjoyment and packed with information. The book serves a variety of purposes: a fun read for anyone, a textbook for gifted students, a scholarly guide for science competitions, among several others." - Dr. Zhaoming He, Professor of Bioengineering, Texas Tech University □□□ 1984

(Free version) Abacus & Mental Arithmetic Course Book Mathewmatician All examples and exercises are provided with detailed and smooth versions of video teaching It is suitable to - Children with strong self-learning ability - Parents who train their children on their own - Kindergarten or Primary school teacher - Students majoring in early childhood education or elementary education in universities and colleges - Those who are interested in becoming an abacus and mental arithmetic teacher or are interested in running an abacus and mental arithmetic class

Business Ethics in Theory and Practice Patricia Werhane 2013-04-17 This book originated in a symposium on business ethics that took place in the Faculty of Commerce at the University of Canterbury in September of 1997. Professor Werhane, who was a visiting Erskine Fellow, provided the keynote address, and many of the papers in this collection were originally presented at this symposium. We are grateful to Kluwer Publishers for the opportunity to publish

these essays in their series on International Business Ethics. We want to thank the Olsson Center for Applied Ethics at the Darden School, University of Virginia, and the Erskine Trust and the Department of Management at the University of Canterbury for their support of Professor Werhane's fellowship, research for this text, and funding for its production. We especially want to thank Lisa Spiro, who copy-edited and prepared the manuscript for publication.

INTRODUCTION AND OVERVIEW
 This book originated in a symposium on business ethics that took place in the faculty of commerce, at the University of Canterbury, in September 1997. Professor Werhane, who was a visiting Erskine Fellow, provided the keynote address. Contributions to the proceedings were inter-disciplinary, spanning theory and practice. Subsequent contributions were obtained from within New Zealand and from Asia. The book starts off on rather a pessimistic note: the new managerialism (the kind of thing Scott Adams jokes about in the world-famous Dilbert cartoons) is economically suspect and psychologically damaging.

Introduction to Wave Scattering, Localization and Mesoscopic Phenomena Ping Sheng
 2006-08-25 Waves represent an important topic of study in physics, mathematics, and engineering. This volume is a resource book for those interested in understanding the physics underlying nanotechnology and mesoscopic phenomena. It aims to bridge the gap between the textbooks and research frontiers in wave related topics.

Teaching Computational Thinking in Primary Education Ozcinar, Huseyin 2017-10-31
 Computational technologies have been impacting human life for years. Teaching methods must adapt accordingly to provide the next generation with the necessary knowledge to further advance these human-assistive technologies. *Teaching Computational Thinking in Primary Education* is a crucial resource that examines the impact that instructing with a computational focus can have on future learners. Highlighting relevant topics that include multifaceted skillsets, coding, programming methods, and digital games, this scholarly publication is ideal for educators, academicians, students, and researchers who are interested in

discovering how the future of education is being shaped.

Inclusions in Prokaryotes Jessup M. Shively
 2006-05-04 The new series "Microbiology Monographs" begins with two volumes on intracellular components in prokaryotes. In this first volume, "Inclusions in Prokaryotes", the components, labeled inclusions, are defined as discrete bodies resulting from synthesis of a metabolic product. Research on the biosynthesis and reutilization of the accumulated materials is still in progress, and interest in the inclusions is growing. This comprehensive volume provides historical background and comprehensive reviews of eight well-known prokaryotic inclusions.

□□□□□□□□□□□□□□□□ 2008

Colonial Hong Kong and Modern China Pui-tak Lee 2005-09-01 Essays examine the relationship between Hong Kong and China.
Cooperative Stochastic Differential Games David W.K. Yeung 2006-05-11 Numerical Optimization presents a comprehensive and up-to-date description of the most effective methods in continuous optimization. It responds to the growing interest in optimization in engineering, science, and business by focusing on the methods that are best suited to practical problems. For this new edition the book has been thoroughly updated throughout. There are new chapters on nonlinear interior methods and derivative-free methods for optimization, both of which are used widely in practice and the focus of much current research. Because of the emphasis on practical methods, as well as the extensive illustrations and exercises, the book is accessible to a wide audience. It can be used as a graduate text in engineering, operations research, mathematics, computer science, and business. It also serves as a handbook for researchers and practitioners in the field. The authors have strived to produce a text that is pleasant to read, informative, and rigorous - one that reveals both the beautiful nature of the discipline and its practical side.

Integrating Engineering Education and Humanities for Global Intercultural Perspectives Zhanna Anikina 2020-05-06 This book presents papers from the International Conference on Integrating Engineering Education and Humanities for Global

Intercultural Perspectives (IEEHGIP 2020), held on 25–27 March 2020. The conference brought together researchers and practitioners from various disciplines within engineering and humanities to offer a range of perspectives. Focusing on, but not limited to, Content and Language Integrated Learning (CLIL) in Russian education the book will appeal to a wide academic audience seeking ways to initiate positive changes in education.

MATEMATIKA NALARIA REALISTIK 11

Raden Ridwan Hasan Saputra 2015-12-15
Matematika Nalaria Realistik 11 merupakan buku kumpulan soal kompetisi matematika yang diperuntukkan bagi siswa Sekolah Dasar (SD). Soal-soal ini dibuat dengan mengadaptasi soal-soal dari berbagai kompetisi nasional dan internasional. Juga telah diuji-cobakan dalam berbagai kompetisi tingkat daerah dan nasional di Indonesia. Latihan-latihan dan solusi dalam buku ini akan membiasakan siswa mampu memahami dan menyelesaikan soal-soal matematika dengan keterampilan bernalar. Siswa akan diajarkan menganalisis masalah, lalu menarik kesimpulan, dan pada akhirnya menyelesaikan masalah dengan logika. *
Matematika Nalaria Realistik 11 ditulis dan disusun oleh Ir. R. Ridwan Hasan Saputra, M. Si, Presiden Direktur Klinik Pendidikan MIPA yang telah sukses mengantarkan siswa-siswa mengikuti berbagai kompetisi dan olimpiade matematika di dalam maupun luar negeri. Ia juga mendirikan Kampung Matematika, dan kini tengah mengagas ide Permainan Matematika untuk militer, kepolisian, dan Bela Negara. Berkat jasanya di bidang matematika dan sains, penulis memperoleh berbagai penghargaan, di antaranya penghargaan Satya Lencana Wira

Karya pada tahun 2007, Tokoh Perubahan Republika 2013, dan Nominator Liputan 6 Award 2016. Buku persembahkan Republika Penerbit [Republika, bukurepublika, Penerbit Republika, soal matematika]

The History of Korea H. B. Hulbert 2014-01-21
With a modern introduction by Clarence Weems, originally published in Seoul in 1905 to wide acclaim as the only authentic history of Korea from prehistory to the Twentieth Century, this two volume work remains required reading for students of Western historiography of Korea.
El billar no es de vago Carlos Bosch 2012-10-17
Desde tiempos del cardenal Richelieu, cuando entre las habilidades de un mosquetero se incluía el saber jugar billar, hasta las películas como *The Hustler* y *The Colour of Money*, el billar siempre ha fascinado por su combinación de juego y ciencia. Carlos Bosch demuestra con abundancia de ejemplos y mediante la resolución de problemas geométricos y algebraicos que el billar merece utilizarse como una lúdica herramienta de razonamiento. El autor toma como punto de partida el regalo de un taco de billar para esbozar la historia de este juego y explicar sus nociones básicas y los detalles de su evolución.

Abacus & Mental Arithmetic Course Book
Mathewmatician All examples and exercises are provided with detailed and smooth versions of video teaching It is suitable to - Children with strong self-learning ability - Parents who train their children on their own - Kindergarten or Primary school teacher - Students majoring in early childhood education or elementary education in universities and colleges - Those who are interested in becoming an abacus and mental arithmetic teacher or are interested in running an abacus and mental arithmetic class