

**Mathematics**

*Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.*

**Time: 3 hrs.**

**Full Marks: 100**

**Pass Marks: 35** (For partial students only)

**Attempt all questions.**

**Group 'A'**

**5 × 3 × 2 = 30**

1. a. Find the truth value of the biconditional statement of  $p$  and  $q$  where  $p$  represents '2 is an even number' and  $q$  represents '4 is an even number'.  
b. If  $f: \mathbb{R} \rightarrow \mathbb{R}$  be defined by  $f(x) = 2x - 3$ , find  $f^{-1}$   
c. Test the even or odd nature and symmetricity of the function  $y = 8x^2$
2. a. Express  $\tan^{-1}x$  in terms of inverse of sin function.  
b. Prove by mathematical induction:  $1 + 3 + 5 + \dots + (2n - 1) = n^2$   
c. Find the adjoint of the matrix  $\begin{pmatrix} 2 & 5 \\ 3 & -7 \end{pmatrix}$
3. a. Using Cramer's rule, solve:  $3x + 2y + 9 = 0$ ,  $2x - 3y + 6 = 0$   
b. Express  $\sqrt{3} + i$  in polar form.  
c. If one root of the equation  $ax^2 + bx + c = 0$  be twice the other, show that  $2b^2 = 9ac$
4. a. Find the equation of the straight line that has  $y$ -intercept '2' and is parallel to  $4x - 8y + 3 = 0$   
b. Find the equation of the circle which passes through origin and makes equal intercepts on both axes.  
c. Evaluate:  $\lim_{x \rightarrow 0} \frac{1 - \cos nx}{1 - \cos mx}$

**Contd...**

# June 2013 Grade 11 Maths Paper

**Linda Pound, Trisha Lee**



## **June 2013 Grade 11 Maths Paper:**

Singapore Math and Science Education Innovation Oon Seng Tan, Ee Ling Low, Eng Guan Tay, Yaw Kai Yan, 2021-08-04

This edited volume explores key areas of interests in Singapore math and science education including issues on teacher education pedagogy curriculum assessment teaching practices applied learning ecology of learning talent grooming culture of science and math vocational education and STEM It presents to policymakers and educators a clear picture of the education scene in Singapore and insights into the role of math and science education in helping the country excel beyond international studies such as PISA the pedagogical and curricula advancements in math and science learning and the research and practices that give Singaporean students the competitive edge in facing the uncertain and challenging landscape of the future

*Research for Educational Change* Jill Adler, Anna Sfard, 2016-06-17 Research for Educational Change presents ways in which educational research can fulfil its commitments to educational practice Focussing its discussion within the context of mathematics education it argues that while research generated insights can have beneficial effects on learning and teaching the question of how these effects are to be generated and sustained is far from evident The question of how to turn research into educational improvement is discussed here in the context of learning and teaching hindered by poverty and social injustice In the first part of the book four teams of researchers use different methodologies while analysing the same corpus of data collected in a South African mathematics classroom In the second part each of these teams makes a specific proposal about what can be done and how so that its research generated insights have a tangible beneficial impact on what is happening in mathematical classrooms Combining two discourses that of researchers speaking to one another and that of researchers communicating their insights to those responsible for educational practice the book deals with the perennial question of communication between those who study educational processes and those who are directly responsible for teacher education educational research and classroom practices This book will be key reading for postgraduates researchers and academics in education and particularly in the areas of mathematics education education research teacher education and classroom practice It will also appeal to teacher educators practitioners and undergraduate students interested in educational research

**Maths Handbook & Study Guide Grade 12: Teacher's Guide and Answer Book** Kevin Smith, 2014-01-01 Guidelines for teachers and worked through solutions to all the exercises in the Grade 12 Textbook Guidelines for teachers and worked through solutions to all the exercises in the Grade 12 Textbook

**Teaching Mathematics Creatively** Linda Pound, Trisha Lee, 2021-09-30 This revised and updated third edition offers a range of strategies activities and ideas to bring mathematics to life in the primary classroom Taking an innovative and playful approach to maths teaching this book promotes creativity as a key element of practice and offers ideas to help your students develop knowledge understanding and enjoyment of the subject In the creative classroom mathematics becomes a tool to build confidence develop problem solving skills and motivate children The fresh approaches explored in this book include a

range of activities such as storytelling music and construction elevating maths learning beyond subject knowledge itself to enable students to see mathematics in a new way Key chapters of this book explore Learning maths outdoors make more noise make more mess or work on a larger scale Everyday maths making sense of the numbers patterns shapes and measures children see around them Music and maths the role of rhythm in learning and music and pattern in maths Stimulating accessible and underpinned by the latest research and theory this is essential reading for trainee and practising teachers who wish to embed creative approaches to maths teaching in their classroom

**Human Resource Management, 11th Edition** Raymond J. Stone, Anne Cox, Mihajla Gavin, Joseph Carpini, 2024-06-04 The new edition of Raymond Stone's Human Resource Management is an AHRI endorsed title that has evolved into a modern relevant and practical resource for first year HRM students This concise 15 chapter textbook gives your students the best chance of transitioning successfully into their future profession by giving them relatable professional insights and encouragement to exercise their skills in authentic workplace scenarios

**Psychology and Mathematics Education** Gila Hanna, Laura Macchi, Karin Binder, Laura Martignon, Katharina Loibl, 2023-09-05 Modern Mathematics is constructed rigorously through proofs based on truths which are either axioms or previously proven theorems Thus it is par excellence a model of rational inquiry Links between Cognitive Psychology and Mathematics Education have been particularly strong during the last decades Indeed the Enlightenment view of the rational human mind that reasons makes decisions and solves problems based on logic and probabilities was shaken during the second half of the twentieth century Cognitive psychologists discovered that humans thoughts and actions often deviate from rules imposed by strict normative theories of inference Yet these deviations should not be called errors as Cognitive Psychologists have demonstrated these deviations may be either valid heuristics that succeed in the environments in which humans have evolved or biases that are caused by a lack of adaptation to abstract information formats Humans as the cognitive psychologist and economist Herbert Simon claimed do not usually optimize but rather satisfice even when solving problem This Research Topic aims at demonstrating that these insights have had a decisive impact on Mathematics Education We want to stress that we are concerned with the view of bounded rationality that is different from the one espoused by the heuristics and biases program In Simon's bounded rationality and its direct descendant ecological rationality rationality is understood in terms of cognitive success in the world correspondence rather than in terms of conformity to content free norms of coherence e.g. transitivity

**The Armed Forces Covenant in action?** Great Britain: Parliament: House of Commons: Defence Committee, 2013-07-18 A series of Ofsted inspections on Army Apprenticeships conducted in 2013 rated the overall effectiveness as good This was an improvement over the last inspection in 2009 rated as satisfactory now called requires improvement Some 28 per cent of Army recruits were less than 18 years of age Further information is needed on why the Army is so dependent on recruiting personnel under the age of 18 years compared to the other two Services and whether steps are being taken to reduce this dependency Of those recruited in 2012 3.5 per cent of the Army

were rated at entry level 2 for literacy that of a 7 to 8 year old and 39 per cent had a literacy level of an eleven year old If as the MoD states it has to recruit personnel at whatever level of attainment is available then it should boost remedial action when recruitment entry standards are particularly low In light of changes brought about by Future Force 2020 it may be that recruiting personnel with higher levels of attainment would better meet the future needs of the Armed Forces Whilst the Committee recognises that some recruits may not be eager to take further academic exams the MoD should encourage more recruits to undertake English and Maths GCSEs which would stand them in good stead for future employment The MoD has carried out some useful pilot projects with paramedic training and should identify more potential projects to ensure that vital skills paid for by the MoD are not lost to the country 2012 GCSE English results Great Britain: Parliament: House of Commons: Education Committee,2013-06-11 The 2012 GCSE English results prompted significant controversy which ultimately resulted in an application for judicial review This report sets out the background to these events and identifies lessons to be learned The problems with GCSE English can be traced back to the 2007 09 development phase of the qualification in particular the turbulence which resulted from the shift away from a mostly linear to a modular system combined with a high proportion of controlled assessment and generous marking tolerances Exam board experts raised concerns at the time but these were not acted upon by the regulator the then interim Ofqual Further difficulties arose because of pressures from the school accountability system The problems experienced with GCSE English in 2012 highlighted serious weaknesses in the moderation of speaking and listening with consequences for grade awarding The current status of Ofqual as an independent regulator accountable to Parliament is the right one However the Coalition Government is bringing in wholesale changes to GCSEs and A levels to a tight timetable and at the same time Ofqual must have systems in place The Committee is also concerned that there is a rush towards separate exam systems for England Wales and Northern Ireland without careful reflection on what might be lost or consensus that this is the right thing to do

**The Times Index** ,2013-06 Indexes the Times Sunday times and magazine Times literary supplement Times educational supplement Time educational supplement Scotland and the Times higher education supplement **The Shifting Global World of Youth and Education** Mabel Ann Brown,2017-08-15 The Shifting Global World of Youth and Education explores how increasing migration and population changes are having an unprecedented impact on global education Given that the number of children of migrant background is growing internationally there is a need for increasing awareness of the educational attainment and cultural integration of this population group This book presents international perspectives on migration and youth and analyses what kinds of effects such demographic changes are having on educational systems around the world The chapters in this volume provide a fascinating insight into how countries around the world are dealing with loss or growth in their young population as well as changes to their education systems Written by specialist academics from the relevant country the book covers Cuba Lithuania the United Kingdom the United States Finland Greece Germany Austria

Hungary Latvia China Australia India Italy and Poland Taking into consideration the countries social and political context the chapters discuss educational issues surrounding curriculum assessment and the opportunities available for the support of young people Conclusions are drawn about what could be done in the future for the benefit of both the migrant and the existing populations The Shifting Global World of Youth and Education will be of great interest to academics researchers and postgraduate students in the disciplines of education sociology political sciences and social work The book will also give secondary teachers teaching assistants social workers and youth workers the opportunity to reflect on their role within a national and international context

**Developing Professional Practice 14-19** Andrew Armitage, Gina Donovan, Karen Flanagan, Sabrina Poma, 2013-11-04 The Developing Professional Practice series provides a thoroughly comprehensive and cutting edge guide to developing the necessary knowledge skills and understanding for teaching within the 0 7 7 14 or 14 19 age ranges Each of the three titles offers a genuinely accessible and engaging introduction to a wide range of professional practice supporting the education of babies to young adults Discussion of current developments in theory policy and research is combined with guidance on the practicalities of working with each age group Numerous examples of real practice are included throughout along with a range of additional features to help promote understanding

*Common Core Mathematics Standards and Implementing Digital Technologies* Polly, Drew, 2013-05-31 Standards in the American education system are traditionally handled on a state by state basis which can differ significantly from one region of the country to the next Recently initiatives proposed at the federal level have attempted to bridge this gap Common Core Mathematics Standards and Implementing Digital Technologies provides a critical discussion of educational standards in mathematics and how communication technologies can support the implementation of common practices across state lines Leaders in the fields of mathematics education and educational technology will find an examination of the Common Core State Standards in Mathematics through concrete examples current research and best practices for teaching all students regardless of grade level or regional location This book is part of the Advances in Educational Technologies and Instructional Design series collection

**Diagnosis of Breast Cancer Using Support Vector Machine** DR. SYED HAUIDER ABBAS, DR. KRISHNA PRASAD K, 2024-05-28 First and foremost we express our deepest gratitude to God Throughout the process of compiling this book we have come to appreciate the profound impact of the gift of writing which has empowered us to pursue our dreams and believe in our passions Without divine trust and guidance this accomplishment would not have been possible We extend our sincere thanks to all those involved in this project especially the authors and reviewers whose contributions were instrumental in bringing this book to fruition Their support has been invaluable and we are grateful for their dedication and expertise We also thank God for granting us the opportunity to delve into this highly relevant subject matter at this time and we acknowledge the collective efforts of each author for their invaluable contributions Special appreciation goes to all the chapter authors who generously shared their time and expertise Additionally we acknowledge the valuable feedback provided

by the peer reviewers whose suggestions greatly enhanced the quality coherence and content of the chapters We are especially grateful to those authors who served as referees dedicating their time and effort to ensure the integrity of this work DR SYED HAUIDER ABBAS DR KRISHNA PRASAD K **Commonwealth Universities Yearbook** T. Craig, Hugh W. Springer, 1979 *The Welfare State We're In* James Bartholomew, 2013-12-16 The welfare state is one of Britain's crowning achievements Or is it In this seminal book now studied in universities in Britain and elsewhere James Bartholomew advances the sacrilegious argument that however well meaning its founders the welfare state has done more harm than good He argues that far from being the socialist utopia the post war generation dreamed of the welfare state has led to avoidable deaths in the NHS falling standards in schools permanent mass unemployment and many other unintended consequences At a deeper level he contends that the welfare state has caused millions to live deprived and even depraved lives undermining the very decency and kindness which first inspired it This landmark book changed the way many people think about the welfare state It played a major role in the political debate that led to recent reforms Now with a new introduction by the author assessing the value of these reforms this classic text still shocks with the power of its arguments and the weight of its supporting evidence *Who's who in American Education*, 1992 **Mathematics**, 2006 **Mathematics A**. Krusekopf, 2017 *Mathematics*, 2014 Mathematics Ontario. Minister of Education, 1964\*

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