

**GRADE 11 MATHEMATICS
NOVEMBER EXAMINATION PAPER 2**

QUESTION 1

1.1 Calculate the following with the use of a calculator:

1.1.1 $\sin 43^\circ + \cos 47^\circ$ (1)

1.1.2 $\tan^2 50^\circ$ (1)

1.1.3 $\cot 33^\circ + \operatorname{cosec} 15^\circ$ (1)

1.2 If $A = 34,3^\circ$ and $B = 22,2^\circ$, calculate the following to two decimal places:

1.2.1 $\sin (A + B)$ (2)

1.2.2 $\sec \left(\frac{A}{2} \right)$ (2)

1.3 Calculate the following without the use of a calculator:

1.3.1 $\sin 30^\circ + \cos 60^\circ$ (1)

1.3.2 $\tan 45^\circ + \cos 45^\circ$ (1)

1.3.3 $\cos 90^\circ + \sin 90^\circ$ (1)

[12]

QUESTION 2

Without the use of a calculator, answer the following questions:

2.1 Given $\cos \theta = -\frac{1}{2}$ and $0^\circ \leq \theta \leq 180^\circ$
Use a diagram to determine the values of:

2.1.1 $\tan (180^\circ + \theta)$ (1)

2.1.2 $3\sin (\theta - 90^\circ)$ (2)

2.2 Simplify the following expression: $\frac{\sin(-230^\circ)}{\cos(260^\circ)} + \frac{\cos(90^\circ)}{\sin(260^\circ + 40^\circ)}$ (5)

2.3 Prove that: $\tan \theta \sqrt{\frac{1}{\sin^2 \theta} - 1} = 1$ (4)

2.4 Determine the general solution for: $3\sin^2 \theta = 1 + \sin \theta$ (6)

[28]

QUESTION 3

3.1 Sketch on the same set of axes the graphs for:

$f(x) = -2\cos x$ and $g(x) = \sin 2x$, for the interval $-90^\circ \leq x \leq 180^\circ$.

Show the coordinates of the turning points and all axis intercepts. (5)

3.2 Study the following sketch and determine the value of $\cos \theta - \cos \phi$, without the use of a calculator.



(5)
[10]

QUESTION 4

In the diagram below, the angle between line AB and the x-axis is β . The angle between line CD and the x-axis is θ . A and D are the x-axis intercept points for lines AB and CD respectively. The coordinates of point B are $(\sqrt{3}, 2)$.

The intercept point E, of lines AB and CD lies on the y-axis. $\angle EDC = 63,69^\circ$

The equation of the line CD is given as: $3x + 2y = 6$



4.1 Determine the coordinates of E. (2)

4.2 Calculate the numerical value of α . (2)

4.3 Calculate the numerical value of β . (2)

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Princeton Review

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Grade Maths Common Paper 2013 Memorandum:

The Complete Book of Colleges, 2013 Edition Princeton Review, 2012-08-07 Profiles every four year college in the United States providing detailed information on academic programs admissions requirements financial aid services housing athletics contact names and campus life Third Symposium Proceedings. New Ways of Teaching and Learning Janina

Morska, Alan Rogerson, This volume contains the papers presented at the Third International Symposium on New Ways of Teaching Learning held from August 6 10 2024 at the Aemilia Hotel Bologna Italy The Conference was organized by The Mathematics Education for the Future Project an international educational project founded in 1986 and dedicated to innovation in mathematics statistics science and computer education world wide **Assessing Contexts of Learning**

Susanne Kuger, Eckhard Klieme, Nina Jude, David Kaplan, 2016-12-05 This volume brings together educational effectiveness research and international large scale assessments demonstrating how the two fields can be applied to inspire and improve each other and providing readers direct links to instruments that cover a broad range of topics and have been shown to work in more than 70 countries The book s initial chapters introduce and summarize recent discussions and developments in the conceptualization implementation and evaluation of international large scale context assessments and provide an outlook on possible future developments Subsequently three thematic sections Student Background Outcomes of Education Beyond Achievement and Learning in Schools each present a series of chapters that provide the conceptual background for a wide range of important topics in education research policy and practice Each chapter defines a conceptual framework that relates recent findings in the educational effectiveness research literature to current issues in education policy and practice These frameworks were used to develop interesting and relevant indicators that may be used for meaningful reporting from international assessments other cross cultural research or national studies Using the example of one particular survey the Programme for International Student Assessment PISA 2015 this volume links all theoretical considerations to fully developed questionnaire material that was field trailed and evaluated in questionnaires for students and their parents as well as teachers and principals in their schools The primary purposes of this book are to inform readers about how education effectiveness research and international large scale assessments are already interacting to inform research and policymaking to identify areas where a closer collaboration of both fields or input from other areas could further improve this work to provide sound theoretical frameworks for future work in both fields and finally to relate these theoretical debates to currently available and evaluated material for future context assessments **The Complete Book of Colleges, 2017**

Edition Princeton Review, 2016-07 The MEGA GUIDE to 1 355 COLLEGES AND UNIVERSITIES No one knows colleges better than The Princeton Review Inside The Complete Book of Colleges 2017 Edition you ll find meticulously researched information that will help you narrow the search for the best college for you Each of the 1 355 user friendly profiles answers your questions including How much are tuition and other student fees and costs What types of financial aid are available and

when are the applications due What do admissions officers most look for in test scores and recommendations Which majors are the most popular and have the highest enrollment What is the housing like and how accessible is technology on campus What are the key campus organizations athletics and student activities How selective is the school Plus Indexes based on cost selectivity and size that will help you narrow your search Get a leg up on your college search with this easy to use comprehensive and savvy guidebook from the experts at The Princeton Review The SAGE Handbook of Curriculum, Pedagogy and Assessment Dominic Wyse, Louise Hayward, Jessica Pandya, 2015-12-03 The research and debates surrounding curriculum pedagogy and assessment are ever growing and are of constant importance around the globe With two volumes containing chapters from highly respected researchers whose work has been critical to understanding and building expertise in the field The SAGE Handbook of Curriculum Pedagogy and Assessment focuses on examining how curriculum is treated and developed and its impact on pedagogy and assessment worldwide The Handbook is organised into five thematic sections considering The epistemology and methodology of curriculum Curriculum and pedagogy Curriculum subjects Areas of the curriculum Assessment and the curriculum The curriculum and educational policy The SAGE Handbook of Curriculum Pedagogy and Assessment's breadth and rigour will make it essential reading for researchers and postgraduate students around the world *The Complete Book of Colleges, 2018 Edition* Princeton Review, 2017-07 Includes information on admissions cost financial aid required and recommended admissions criteria cost breakdowns and types of financial aid for 1 355 colleges and universities **Automatic Item Generation** Mark J. Gierl, Thomas M. Haladyna, 2013 Automatic item generation AIG represents a relatively new and unique research area where specific cognitive and psychometric theories are applied to test construction practices for the purpose of producing test items using technology The purpose of this book is to bring researchers and practitioners up to date on the growing body of research on AIG by organizing in one volume what is currently known about this research area Part I begins with an overview of the concepts and topics necessary for understanding AIG by focusing on both its history and current applications Part II presents two theoretical frameworks and practical applications of these frameworks in the production of item generation Part III summarizes the psychological and substantive characteristics of generated items Part IV concludes with a discussion of the statistical models that can be used to estimate the item characteristics of generated items features one future application of AIG describes the current technologies used for AIG and also highlights the unresolved issues that must be addressed as AIG continues to mature as a research area Comprehensive The book provides a comprehensive analysis of both the theoretical concepts that define automatic item generation and the practical considerations required to implement these concepts Varied Applications Readers are provided with novel applications in diverse content areas e.g. science and reading comprehension that range across all educational levels elementary through university **From GCSEs to EBCs** Great Britain. Parliament. House of Commons. Education Committee, 2013 The Government's plans for replacing GCSEs with new English Baccalaureate

Certificates in some subjects is trying to do too much too fast Introducing several fundamental changes at the same time and to a tight timetable will jeopardise the quality of the reforms and may threaten the stability of the wider exam system GCSEs need significant improvements in order to restore public confidence in the exam system but the Government still needs to make the case that the GCSE brand is so discredited that it is beyond repair MPs are also concerned about the impact of the changes on subjects outside the English Baccalaureate where students will be taking GCSEs for some time to come according to the Government's plans The report also questions how well the Government's proposals will serve lower attaining pupils who are often the most disadvantaged There is no evidence that the proposed changes will help to tackle under achievement or narrow the attainment gap between the richest and poorest students any more effectively than GCSEs The Government is also called upon to re think its plans for a Statement of Achievement specifically for lower attaining pupils MPs agree that changes are needed to the way in which exams are run but they raise serious concerns about franchising subjects to exam boards The report is critical of the Government's decision to abolish some GCSEs before publishing the outcomes of the National Curriculum Review and its proposed changes to the school accountability system MPs also note the wide ranging stakeholder opposition to many of the Government's proposals

Mathematical Reasoning Lyn D. English, 2013-04-03

How we reason with mathematical ideas continues to be a fascinating and challenging topic of research particularly with the rapid and diverse developments in the field of cognitive science that have taken place in recent years Because it draws on multiple disciplines including psychology philosophy computer science linguistics and anthropology cognitive science provides rich scope for addressing issues that are at the core of mathematical learning Drawing upon the interdisciplinary nature of cognitive science this book presents a broadened perspective on mathematics and mathematical reasoning It represents a move away from the traditional notion of reasoning as abstract and disembodied to the contemporary view that it is embodied and imaginative From this perspective mathematical reasoning involves reasoning with structures that emerge from our bodily experiences as we interact with the environment these structures extend beyond finitary propositional representations Mathematical reasoning is imaginative in the sense that it utilizes a number of powerful illuminating devices that structure these concrete experiences and transform them into models for abstract thought These thinking tools analogy metaphor metonymy and imagery play an important role in mathematical reasoning as the chapters in this book demonstrate yet their potential for enhancing learning in the domain has received little recognition This book is an attempt to fill this void Drawing upon backgrounds in mathematics education educational psychology philosophy linguistics and cognitive science the chapter authors provide a rich and comprehensive analysis of mathematical reasoning New and exciting perspectives are presented on the nature of mathematics e g mind based mathematics on the array of powerful cognitive tools for reasoning e g analogy and metaphor and on the different ways these tools can facilitate mathematical reasoning Examples are drawn from the reasoning of the preschool child to that of the adult learner

Congressional Record ,1881

The RTI Approach

to Evaluating Learning Disabilities Joseph F. Kovalski, Joseph Kovalski, Amanda M. VanDerHeyden, Edward S. Shapiro, 2013-08-15 This book presents clear cut procedures for using response to intervention RTI to determine a K 12 student's eligibility for special education under the designation of specific learning disabilities SLD Comprehensive guidelines are provided for gathering student data in the course of interventions and ruling out causes other than SLD for academic problems Special features include case examples tips for creating individualized education plans based on RTI data and frequently asked questions With a convenient large size format and lay flat binding the book features useful reproducible tools Purchasers also get access to a Web page where they can download and print the reproducible materials This book is in The Guilford Practical Intervention in the Schools Series *I'm Not Here to Inspire You* Rob J. Quinn, 2013-07-29 In this collection of essays Rob J Quinn offers insights on his own experiences as a man living with cerebral palsy and challenges the perceptions of people with disabilities offered by the able bodied world Many of the pieces are meant to give teens and young adults living with physical disabilities a new perspective on some of the issues they are dealing with in their daily lives Quinn tackles topics such as going to school physical therapy dealing with the isolation that people with disabilities can experience and pushing the limits of the physical abilities people possess despite a disability *Im Not Here to Inspire You* is intended as a positive yet honest look at aspects of living with a physical disability After reading several essays from Quinn Philadelphia Inquirer columnist Daniel Rubin wrote that the writer chronicles his life unflinchingly **Congressional Record** United States. Congress, 1881 The Congressional Record is the official record of the proceedings and debates of the United States Congress It is published daily when Congress is in session The Congressional Record began publication in 1873 Debates for sessions prior to 1873 are recorded in The Debates and Proceedings in the Congress of the United States 1789 1824 the Register of Debates in Congress 1824 1837 and the Congressional Globe 1833 1873 **Rethinking the SAT** Rebecca Zwick, 2013-04-15 Rethinking the SAT is a unique presentation of the latest thoughts and research findings of key individuals in the world of college admissions including the president of the largest public university system in the U S as well as the presidents of the two companies that sponsor college admissions tests in the U S The contributors address not only the pros and cons of the SAT itself but the broader question of who should go to college in the twenty first century **Engineering**, 1941-07 South African national bibliography, 1988 Includes publications received in terms of Copyright Act no 9 of 1916

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