		Orcher marriers
ritre Number Candi	Sate Number	
earson Edexcel L	evel 1/Leve	el 2 GCSE (9-1)
lime 1 hour 30 minutes	Paper reference	1MA1/2F
Mathematics		
PAPER 2 (Calculator)		
Foundation Tier		

Instructions

- · Use black ink or ball-point pen.
- Fill in the boxes at the top of this page with your name, centre number and candidate number.
- Answer all questions.
- Answer the guestions in the spaces provided
 - there may be more space than you need.
- You must show all your working.
- Diagrams are NOT accurately drawn, unless otherwise indicated.
- Calculators may be used.
- If your calculator does not have a x button, take the value of x to be 3.142 unless the question instructs otherwise.

Information

- The total mark for this paper is 80
- The marks for each question are shown in brackets
 - use this as a guide as to how much time to spend on each question.

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.



Tiurn ower 🖭

Pixl Edexcel 2015 March Maths Paper 2

L Darling-Hammond

Pixl Edexcel 2015 March Maths Paper 2:

Whispering the Strategies of Language: An Mental Quest through Pixl Edexcel 2015 March Maths Paper 2

In a digitally-driven world where screens reign great and immediate connection drowns out the subtleties of language, the profound strategies and psychological nuances hidden within phrases usually go unheard. Yet, set within the pages of **Pixl Edexcel 2015 March Maths Paper 2** a fascinating fictional value blinking with organic thoughts, lies an exceptional journey waiting to be undertaken. Written by a talented wordsmith, this wonderful opus invites viewers on an introspective trip, gently unraveling the veiled truths and profound affect resonating within the material of every word. Within the mental depths of the emotional review, we can embark upon a sincere exploration of the book is primary themes, dissect their fascinating writing style, and succumb to the strong resonance it evokes strong within the recesses of readers hearts.

 $\underline{https://crm.avenza.com/results/Resources/HomePages/responsible \%20 or ca \%20 soundings \%20 english \%20 edition.pdf}$

Table of Contents Pixl Edexcel 2015 March Maths Paper 2

- 1. Understanding the eBook Pixl Edexcel 2015 March Maths Paper 2
 - The Rise of Digital Reading Pixl Edexcel 2015 March Maths Paper 2
 - Advantages of eBooks Over Traditional Books
- 2. Identifying Pixl Edexcel 2015 March Maths Paper 2
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
- 3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - o Features to Look for in an Pixl Edexcel 2015 March Maths Paper 2
 - User-Friendly Interface
- 4. Exploring eBook Recommendations from Pixl Edexcel 2015 March Maths Paper 2
 - Personalized Recommendations
 - o Pixl Edexcel 2015 March Maths Paper 2 User Reviews and Ratings

- Pixl Edexcel 2015 March Maths Paper 2 and Bestseller Lists
- 5. Accessing Pixl Edexcel 2015 March Maths Paper 2 Free and Paid eBooks
 - Pixl Edexcel 2015 March Maths Paper 2 Public Domain eBooks
 - Pixl Edexcel 2015 March Maths Paper 2 eBook Subscription Services
 - Pixl Edexcel 2015 March Maths Paper 2 Budget-Friendly Options
- 6. Navigating Pixl Edexcel 2015 March Maths Paper 2 eBook Formats
 - o ePub, PDF, MOBI, and More
 - Pixl Edexcel 2015 March Maths Paper 2 Compatibility with Devices
 - Pixl Edexcel 2015 March Maths Paper 2 Enhanced eBook Features
- 7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Pixl Edexcel 2015 March Maths Paper 2
 - Highlighting and Note-Taking Pixl Edexcel 2015 March Maths Paper 2
 - Interactive Elements Pixl Edexcel 2015 March Maths Paper 2
- 8. Staying Engaged with Pixl Edexcel 2015 March Maths Paper 2
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Pixl Edexcel 2015 March Maths Paper 2
- 9. Balancing eBooks and Physical Books Pixl Edexcel 2015 March Maths Paper 2
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Pixl Edexcel 2015 March Maths Paper 2
- 10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
- 11. Cultivating a Reading Routine Pixl Edexcel 2015 March Maths Paper 2
 - Setting Reading Goals Pixl Edexcel 2015 March Maths Paper 2
 - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Pixl Edexcel 2015 March Maths Paper 2
 - Fact-Checking eBook Content of Pixl Edexcel 2015 March Maths Paper 2
 - Distinguishing Credible Sources

- 13. Promoting Lifelong Learning
 - Utilizing eBooks for Skill Development
 - Exploring Educational eBooks
- 14. Embracing eBook Trends
 - Integration of Multimedia Elements
 - Interactive and Gamified eBooks

Pixl Edexcel 2015 March Maths Paper 2 Introduction

Pixl Edexcel 2015 March Maths Paper 2 Offers over 60,000 free eBooks, including many classics that are in the public domain. Open Library: Provides access to over 1 million free eBooks, including classic literature and contemporary works. Pixl Edexcel 2015 March Maths Paper 2 Offers a vast collection of books, some of which are available for free as PDF downloads, particularly older books in the public domain. Pixl Edexcel 2015 March Maths Paper 2: This website hosts a vast collection of scientific articles, books, and textbooks. While it operates in a legal gray area due to copyright issues, its a popular resource for finding various publications. Internet Archive for Pixl Edexcel 2015 March Maths Paper 2: Has an extensive collection of digital content, including books, articles, videos, and more. It has a massive library of free downloadable books. Free-eBooks Pixl Edexcel 2015 March Maths Paper 2 Offers a diverse range of free eBooks across various genres. Pixl Edexcel 2015 March Maths Paper 2 Focuses mainly on educational books, textbooks, and business books. It offers free PDF downloads for educational purposes. Pixl Edexcel 2015 March Maths Paper 2 Provides a large selection of free eBooks in different genres, which are available for download in various formats, including PDF. Finding specific Pixl Edexcel 2015 March Maths Paper 2, especially related to Pixl Edexcel 2015 March Maths Paper 2, might be challenging as theyre often artistic creations rather than practical blueprints. However, you can explore the following steps to search for or create your own Online Searches: Look for websites, forums, or blogs dedicated to Pixl Edexcel 2015 March Maths Paper 2, Sometimes enthusiasts share their designs or concepts in PDF format. Books and Magazines Some Pixl Edexcel 2015 March Maths Paper 2 books or magazines might include. Look for these in online stores or libraries. Remember that while Pixl Edexcel 2015 March Maths Paper 2, sharing copyrighted material without permission is not legal. Always ensure youre either creating your own or obtaining them from legitimate sources that allow sharing and downloading. Library Check if your local library offers eBook lending services. Many libraries have digital catalogs where you can borrow Pixl Edexcel 2015 March Maths Paper 2 eBooks for free, including popular titles. Online Retailers: Websites like Amazon, Google Books, or Apple Books often sell eBooks. Sometimes, authors or publishers offer promotions or free periods for certain books. Authors Website Occasionally, authors provide excerpts or short stories for free on their websites. While this might not be the Pixl

Edexcel 2015 March Maths Paper 2 full book, it can give you a taste of the authors writing style. Subscription Services Platforms like Kindle Unlimited or Scribd offer subscription-based access to a wide range of Pixl Edexcel 2015 March Maths Paper 2 eBooks, including some popular titles.

FAQs About Pixl Edexcel 2015 March Maths Paper 2 Books

What is a Pixl Edexcel 2015 March Maths Paper 2 PDF? A PDF (Portable Document Format) is a file format developed by Adobe that preserves the layout and formatting of a document, regardless of the software, hardware, or operating system used to view or print it. How do I create a Pixl Edexcel 2015 March Maths Paper 2 PDF? There are several ways to create a PDF: Use software like Adobe Acrobat, Microsoft Word, or Google Docs, which often have built-in PDF creation tools. Print to PDF: Many applications and operating systems have a "Print to PDF" option that allows you to save a document as a PDF file instead of printing it on paper. Online converters: There are various online tools that can convert different file types to PDF. How do I edit a Pixl Edexcel 2015 March Maths Paper 2 PDF? Editing a PDF can be done with software like Adobe Acrobat, which allows direct editing of text, images, and other elements within the PDF. Some free tools, like PDFescape or Smallpdf, also offer basic editing capabilities. How do I convert a Pixl Edexcel 2015 March Maths Paper **2 PDF to another file format?** There are multiple ways to convert a PDF to another format: Use online converters like Smallpdf, Zamzar, or Adobe Acrobats export feature to convert PDFs to formats like Word, Excel, JPEG, etc. Software like Adobe Acrobat, Microsoft Word, or other PDF editors may have options to export or save PDFs in different formats. How do I password-protect a Pixl Edexcel 2015 March Maths Paper 2 PDF? Most PDF editing software allows you to add password protection. In Adobe Acrobat, for instance, you can go to "File" -> "Properties" -> "Security" to set a password to restrict access or editing capabilities. Are there any free alternatives to Adobe Acrobat for working with PDFs? Yes, there are many free alternatives for working with PDFs, such as: LibreOffice: Offers PDF editing features. PDFsam: Allows splitting, merging, and editing PDFs. Foxit Reader: Provides basic PDF viewing and editing capabilities. How do I compress a PDF file? You can use online tools like Smallpdf, ILovePDF, or desktop software like Adobe Acrobat to compress PDF files without significant quality loss. Compression reduces the file size, making it easier to share and download. Can I fill out forms in a PDF file? Yes, most PDF viewers/editors like Adobe Acrobat, Preview (on Mac), or various online tools allow you to fill out forms in PDF files by selecting text fields and entering information. Are there any restrictions when working with PDFs? Some PDFs might have restrictions set by their creator, such as password protection, editing restrictions, or print restrictions. Breaking these restrictions might require specific software or tools, which may or may not be legal depending on the circumstances and local laws.

Find Pixl Edexcel 2015 March Maths Paper 2:

responsible orca soundings english edition

review maplesoft 14 manual

respiratory therapy policy and procedure manual

review sheet 7 special senses answers

reteach multiplying and dividing rational expressions key

return to the response english edition

return of a soldier soldier series book english edition

restaurant guide ogden ut

 $resources\ for\ blind\ before\ guide\ dogs$

revenue cycle operations manual

responsabiliteacutes et violences envers les femmes

resourcing and talent management

restaurant line check template

reteach trigonometric ratios lesson 8 2 holt geometry key

respond for thuthuka bursary for 2015

Pixl Edexcel 2015 March Maths Paper 2:

practical food microbiology and technology cab direct - Jan 17 2022

practical food microbiology and technology google books - Apr 19 2022

web practical food microbiology and technology author s mountney g j gould w a book practical food microbiology and technology 1988 no ed 3 pp xi 351pp

practical food microbiology hardcover 7 nov 2002 - Dec 28 2022

web this book is designed to give students an understanding of the role of microorganisms in food processing and preservation the relation of microorganisms to food spoilage

practical food microbiology wiley online books - Oct 06 2023

web jan 1 2003 the third edition of practical food microbiology includes a rapid reference guide to key microbiological tests for specific foods relates microbiological assessment to current legislation and sampling plans includes the role of new

approaches such as

practical food microbiology 3rd edition amazon com - Nov 26 2022

web the microbiological methods relating to dairy products eggs and shellfish are dealt with separately in sections 7 8 and 9 respectively legislation for dairy products lays down

practical food microbiology rutgers njaes office of - Mar 19 2022

web food microbiology publishes original research articles short research communications and review papers dealing with all aspects of the microbiology of foods the editors

food microbiology principles into practice wiley online books - Jan 29 2023

web discussions include factors influencing microbiological activity food preservation methods the microbiology of specific foodgroups food spoilage characteristics microorganisms

practical food microbiology and technology google books - Oct 26 2022

web jun 30 1995 this practical publication presents in an accessible format the main approaches to the laboratory investigation of the microbial quality of foodstuffs as one of

enumeration of microorganisms practical food microbiology - Feb 27 2023

web apr 22 2016 food microbiology principles into practice editor s osman erkmen t faruk bozoglu first published 22 april 2016 print isbn 9781119237761 online isbn

fundamental food microbiology food safety and inspection - Jun 21 2022

web practical food microbiology a great introduction or refresher on food microbiology you will leave this 3 day course with a better understanding of food pathogens and how to

practical food microbiology 3rd edition infectious disease - Jun 02 2023

web dec 13 2002 the third edition of practical food microbiology includes a rapid reference guide to key microbiological tests for specific foodsrelates microbiological

practical food microbiology 3rd edition pdf 1ol24lfggsi0 - Aug 24 2022

web mar 5 2022 assessment of a practical test in the food microbiology course was designed to ensure that students are competent in performing basic food

<u>download book practical food microbiology pdf noor library</u> - Feb 15 2022

web the new edition of the highly regarded laboratory manual for courses in food microbiology analytical food microbiology a laboratory manual develops the practical skills and

practical food microbiology wiley online library - Jul 03 2023

web practical food microbiology 3rd edition infectious disease infectious disease microbiology medicine nursing dentistry

subjects wiley americas europe

analytical food microbiology a laboratory manual 2nd edition - Nov 14 2021

food microbiology laboratory for the food science student a - Sep 24 2022

web food microbiology is specifically concerned with the desirable and undesirable effects microbes can have on the quality and safety of food products in this section we will

practical food microbiology methods for the examination of food - Jul 23 2022

web harry howard weiser george j mountney wilbur a gould avi publishing company 1971 food 388 pages food and man composition of foods enzymes morphology of

practical food microbiology diane roberts melody greenwood - May 01 2023

web jun 30 1995 the new edition has been thoroughly revised and updated to take account of the latest legislation and technological advances in food microbiology and offers a step

practical food microbiology 3rd edition wiley - Sep 05 2023

web the third edition of practical food microbiology includes a rapid reference guide to key microbiological tests for specific foods relates microbiological assessment to

practical competency assessment in food microbiology - May 21 2022

web applied food microbiology hand book of practical cookery for ladies and professional cooks containing the whole science and art of preparing human food the

food microbiology journal sciencedirect com by elsevier - Dec 16 2021

pdf practical food microbiology mohammad - Aug 04 2023

web practical food microbiology edited by diane roberts bsc phd cbiol fibiol fifst former deputy director food safety microbiology laboratory public health laboratory

practical food microbiology methods for the examination of food - Mar 31 2023

web jan 1 2003 enumeration of microorganisms book editor s diane roberts bsc phd cbiol fibiol fifst melody greenwood bsc mphil cbiol fibiol fifst mrcshc

details for international banking text and cases jose rizal - Oct 06 2022

web international banking text and cases jane e hughes and scott b macdonald by hughes jane e contributor s macdonald scott b publisher ma addison wesley 2002 description xvii 484p illustrations 23cm content type text media type unmediated carrier type volume isbn 0 201 63535 6 subject s banks and banking international

international banking text and cases library management cloud - Jan 09 2023

web catalogue international banking text and cases international banking text and cases hughes jane e jane elizabeth macdonald scott b book english published boston ma london addison wesley c2002 rated 1 5 2 5 3 5 4 5 5 5 from 2 users available at university library

international banking text and cases used book by jane e - Jun 02 2022

web jul 2 2001 buy a used copy of international banking text and cases book by jane e hughes the heist of the century ten years before the recent brussels diamond theft daring diamond thieves made off with gems worth almost twice as much bank management text and cases worldcat org - Sep 05 2022

web part one measurement analysis and theory of value creation 1 chapter 1 the changing nature of banking in the u s 3 chapter 2 understanding a bank s financial statements 35 chapter 3 evaluating a bank s returns risks and overall performance 58 chapter 4 foundations of value in banking 103 chapter 5 asset and liability management and the

latest banking news headlines top stories today the straits times - Apr 12 2023

web stanchart q3 profit slumps after near 1 37b hit from china real estate banking exposure oct 26 2023 2 32 pm citigroup s board to meet in singapore for the first time since 2011

international banking by jane hughes open library - Nov 07 2022

web jul 2 2001 international banking text and cases textbooks in electrical and electronic engineering by jane hughes and scott macdonald 0 ratings 0 want to read 1 currently reading 0 have read

international banking cases materials and problems goodreads - Jul 03 2022

web read reviews from the world's largest community for readers this book focuses primarily on the regulation of international banking at the federal level b

international banking standard chartered singapore - Aug 04 2022

web deposit insurance scheme singapore dollar deposits of non bank depositors are insured by the singapore deposit insurance corporation for up to s 75 000 in aggregate per depositor per scheme member by law foreign currency deposits dual currency investments structured deposits and other investment products are not insured

international banking text and cases google books - Oct 18 2023

web this book was written to provide a straightforward approach to understanding international

international banking text and cases thriftbooks - May 13 2023

web international banking text and cases by scott b macdonald and jane e hughes see customer reviews select format paperback 5 89 7 09 select condition like new 7 09 very good unavailable good 6 19 acceptable 5 89 new unavailable see 1 edition from 5 89 recommended format paperback condition like new 7 09 save 112 90 list

0201635356 international banking text and cases by hughes - Feb 10 2023

web international banking text and cases by hughes jane e macdonald scott b and a great selection of related books art and collectibles available now at abebooks com

international banking text and cases amazon com - Sep 17 2023

web jan 1 2001 this guide provides an accessible approach to understanding international banking it covers traditional course topics such as credit analysis electronic banking the eurobond market debt crisis and international supervision while also providing a grounding in the history of banking and its influences on modern practices

international banking text and cases semantic scholar - Jun 14 2023

web jul 12 2001 1 introduction 2 a brief history of international banking 3 banking systems around the world 4 international commercial banking 5 international investment banking 6 international retail and private banking 7 offshore financial centers 8 banking on the foreign exchange market ii risk management 9

what are international banks global banking finance review - Mar 31 2022

web an international bank is a financial institution that is based in a foreign location and provides services to clients from around the world in many ways international banks provide services and support that is familiar to anyone who has maintained any type of bank account what is different is the additional services that are often included

buy international banking text and cases book by jane hughes - Feb 27 2022

web jul 12 2001 isbn 0201635356 ean13 9780201635355 language english release date jul 12 2001 pages 512 dimensions 1 $3 \text{ h} \times 9 \text{ 1} \text{ l} \times 6 \text{ 3}$ w weight 1 45 lbs format paperback publisher pearson favorite add to wishlist international banking text and cases 5 ratings arrow drop down 4 7 out of 5

international banking text and cases amazon co uk - Dec 08 2022

web jul 2 2001 this book was written to provide a straightforward approach to understanding international banking it covers all the traditional course topics credit analysis electronic banking the eurobond market debt crisis and international supervision while also providing a solid grounding in the history of banking and its influences on

local banks vs international banks in singapore pros cons - May 01 2022

web jun 8 2022 pros of local banks cons of local banks more bank branches and atms longer queues at branches and atms more credit card options for consumers lower customer service standards compared to foreign banks like citibank american express more deals and offers e g favepay deals paylah deals relatively higher loan interest

international banking text and cases softcover abebooks - Mar 11 2023

web this guide provides an accessible approach to understanding international banking it covers traditional course topics such as credit analysis electronic banking the eurobond market debt crisis and international supervision while also providing

a grounding in the history of banking and its influences on modern practices

international banking text and cases by jane e hughes goodreads - Jul 15 2023

web jul 2 2001 3 ratings0 reviews this guide provides an accessible approach to understanding international banking it covers traditional course topics such as credit analysis electronic banking the eurobond market debt crisis and international supervision while also providing a grounding in the history of banking and its influences

international banking text and cases hughes jane e jane - Aug 16 2023

web international banking text and cases by hughes jane e jane elizabeth publication date 2002 topics banks and banking international publisher boston ma addison wesley

general certificate of secondary education unit a501 02 - Oct 03 2022

web a $501\ 02$ mark scheme november $2013\ 2$ subject specific marking instructions 1 m marks are for using a correct method and are not lost for purely numerical errors a

gcse maths 9 1 j560 ocr - Aug 13 2023

web mark scheme unit a502 02 mathematics b higher tier june a502 02 pdf 351kb mark scheme unit a503 01 mathematics c foundation tier june a503 01 pdf

ocr gcse maths past papers revision maths - Oct 15 2023

web you can download the ocr gcse maths past papers and marking schemes by clicking on the links below ocr maths gcse 9 1 june 2022 mathematics j560 ocr maths

mark scheme for march 2013 ocr - Jul 12 2023

web mark scheme for gose mathematics b linear general certificate of secondary education componentj567 03 mathematics paper 3 higher march 2013 ocr

general certificate of secondary education unit a502 02 ocr - Mar 08 2023

web unit a502 02 mathematics b higher tier mark scheme for november 2013 oxford cambridge and rsa examinations ocr oxford cambridge and rsa is a leading uk

general certificate of secondary education unit a501 02 ocr - May 10 2023

web unit a501 02 mathematics a higher tier mark scheme for january 2013 oxford cambridge and rsa examinations ocr oxford cambridge and rsa is a leading uk

general certificate of secondary education component j567 02 - Feb 07 2023

web this mark scheme is published as an aid to teachers and students to indicate the requirements of the examination it shows the basis on which marks were awarded by

download solutions ocr maths february 2013 higher mark scheme - Apr 28 2022

web handbook of high frequency trading jul 03 2021 this comprehensive examination of high frequency trading looks beyond mathematical models which are the subject of

ocr maths february 2013 higher mark scheme - Apr 09 2023

web ocr maths february 2013 higher mark scheme if you want to hilarious novels lots of stories legend comedy and more fictions collections are also commenced from best

mark scheme for march 2013 pmt - Jan 26 2022

web j567 02 mark scheme march 2013 4 subject specific marking instructions 1 m marks are for using a correct method and are not lost for purely numerical errors a marks are

ocr maths february 2013 higher mark scheme pdf kelliemay - Mar 28 2022

web dec 18 2022 ocr maths february 2013 higher mark scheme 2 11 downloaded from kelliemay com on december 18 2022 by guest content of the 2017 specification into

ocr maths february 2013 higher mark scheme pdf - Feb 24 2022

web enter the realm of ocr maths february 2013 higher mark scheme a mesmerizing literary masterpiece penned with a distinguished author guiding readers on a profound

ocr maths february 2013 higher mark scheme pdf - Nov 04 2022

web gcse mathematics for ocr foundation student book 2012 gcse english results reforming juvenile justice the civil rights road to deeper learning ocr maths

mark scheme for november 2013 ocr - Jun 30 2022

web ocr 2013 annotations subject specific marking instructions m marks are for using a correct method and are not lost for purely numerical errors marks are for an accurate

mark scheme for november 2013 revision maths - Aug 01 2022

web mark scheme for gcse mathematics b linear general certificate of secondary education componentj567 04 mathematics paper 4 higher november 2013 ocr

general certificate of secondary education unit a502 02 - Sep 02 2022

web unit a502 02 mathematics b higher tier june 2013 ocr oxford cambridge and rsa is a leading uk awarding body providing a wide range of qualifications to meet the

mark scheme for march 2013 physics maths tutor - Nov 23 2021

web j567 04 mark scheme march 2013 2 subject specific marking instructions 1 m marks are for using a correct method and are not lost for purely numerical errors a marks are

general certificate of secondary education unit a503 02 - Dec 05 2022

web a503 02 mark scheme january 2013 2 subject specific marking instructions 1 m marks are for using a correct method and are not lost for purely numerical errors a marks are

ocr maths february 2013 higher mark scheme pdf salters - May 30 2022

web may 14 2023 ocr maths february 2013 higher mark scheme pdf is easy to use in our digital library an online right of entry to it is set as public therefore you can download it

general certificate of secondary education unit a502 02 - Dec 25 2021

web a502 02 mark scheme january 2013 2 subject specific marking instructions 1 m marks are for using a correct method and are not lost for purely numerical errors a marks are

past papers materials finder ocr - Sep 14 2023

web find past papers and mark schemes find past papers mark schemes examiner reports and practice materials to help you prepare for exams choose a subject to get started

mark scheme for march 2013 ocr - Jun 11 2023

web j567 04 mark scheme march 2013 2 subject specific marking instructions 1 m marks are for using a correct method and are not lost for purely numerical errors a marks are for

general certificate of secondary education unit a503 02 - Jan 06 2023

web a503 02 mark scheme november 2013 2 subject specific marking instructions 1 m marks are for using a correct method and are not lost for purely numerical errors a