Page 1 of 4 (2010 GCE O Level Additional Math Paper 1 & 2 Solutions. For reference only. This exam paper is collected from the public domains. If your copyrights has been violated inadvertently, please write us at mathqa.sg@gmail.com. We will remove this exam paper immediately. We are dedicated to helping students improve their school results. We are not responsible for any legal liability incurred.)

Solutions for GCE O Level Additional Math Paper 1 & 2 – 2010

Paper 1:

1. The function f is defined by $f(x) = x^4 - x^3 + kx - 4$ where k is a constant.
   (i) Given that $x - 2$ is a factor of $f(x)$, find the value of k. [2]
   (ii) Using the value of k found in part (i), find the remainder when $f(x)$ is divided by $x + 2$ [2]

Solution:

(i) **Method 1**: Rewrite
$$f(x) = x^4 - x^3 + kx - 4 =$$
$$= x^4 - 2x^3 + x^3 - 2x^2 + 2x^2 - 4x + (k+4)x$$
$$- 2(k+4) + 2(k+4) - 4$$
$$= (x-2)(x^3 + x^2 + 2x + k + 4) + 2k + 4$$
Since $x - 2$ is a factor of $f(x) \Rightarrow 2k + 4 = 0 \Leftrightarrow k = -2$
Method 2:
$\because x - 2$ is a factor of $f(x) \Rightarrow f(2) = 0 \Leftrightarrow 16 - 8 + 2k - 4 = 0$
$\therefore k = -2$

(ii) **Method 1**: Substitute $k = -2$ and rewrite
$$f(x) = x^4 - x^3 - 2x - 4 =$$
$$= x^4 + 2x^3 - (3x^3 + 6x^2) + (6x^2 + 12x)$$
$$- (14x + 28) + 24$$
$$= (x+2)(x^3 - 3x^2 + 6x - 14) + 24$$
Hence, the remainder $= 24$
Method 2: The remainder $= f(-2) = 24$

2.
   (i) Show that
   $(\sin x + \cos x)^2 = 1 + \sin 2x$ [2]
   (ii) Hence find, in terms of π, the value of
   $\int_0^{\frac{\pi}{2}} (\sin x + \cos x)^2 dx$ [4]

Solution:

(i) $(\sin x + \cos x)^2 = \sin^2 x + \cos^2 x + 2 \sin x \cos x = 1 + \sin 2x$

(ii) Use result from part (i):
$$\int_0^{\frac{\pi}{2}} (\sin x + \cos x)^2 dx = \int_0^{\frac{\pi}{2}} (1 + \sin 2x) dx = \left[x - \frac{\cos 2x}{2} \right]_0^{\frac{\pi}{2}}$$
$$= \left(\frac{\pi}{2} - \frac{\cos \pi}{2} \right) - \left(0 - \frac{\cos 0}{2} \right) = \frac{\pi}{2} + \frac{1}{2} - \left(-\frac{1}{2} \right)$$
$$= \frac{\pi}{2} + 1$$

3. Using a separate diagram for each part, represent on the number line the solution set of
   (i) $3(2 - x) < x + 18$ [2]
   (ii) $3(x^2 - 5) > x - 1$ [3]

   State the set of values of x which satisfy both of these inequalities. [1]

   Solution: (draw the graph yourself)

Mathematics Paper1 November 2010

N Noddings

Mathematics Paper1 November 2010:

The Top Books of the Year Mathematics Paper1 November 2010 The year 2023 has witnessed a noteworthy surge in literary brilliance, with numerous engrossing novels captivating the hearts of readers worldwide. Lets delve into the realm of popular books, exploring the engaging narratives that have enthralled audiences this year. The Must-Read : Colleen Hoovers "It Ends with Us" This touching tale of love, loss, and resilience has captivated readers with its raw and emotional exploration of domestic abuse. Hoover masterfully weaves a story of hope and healing, reminding us that even in the darkest of times, the human spirit can succeed. Mathematics Paper1 November 2010 : Taylor Jenkins Reids "The Seven Husbands of Evelyn Hugo" This intriguing historical fiction novel unravels the life of Evelyn Hugo, a Hollywood icon who defies expectations and societal norms to pursue her dreams. Reids captivating storytelling and compelling characters transport readers to a bygone era, immersing them in a world of glamour, ambition, and self-discovery. Mathematics Paper1 November 2010 : Delia Owens "Where the Crawdads Sing" This mesmerizing coming-of-age story follows Kya Clark, a young woman who grows up alone in the marshes of North Carolina. Owens crafts a tale of resilience, survival, and the transformative power of nature, captivating readers with its evocative prose and mesmerizing setting. These bestselling novels represent just a fraction of the literary treasures that have emerged in 2023. Whether you seek tales of romance, adventure, or personal growth, the world of literature offers an abundance of engaging stories waiting to be discovered. The novel begins with Richard Papen, a bright but troubled young man, arriving at Hampden College. Richard is immediately drawn to the group of students who call themselves the Classics Club. The club is led by Henry Winter, a brilliant and charismatic young man. Henry is obsessed with Greek mythology and philosophy, and he quickly draws Richard into his world. The other members of the Classics Club are equally as fascinating. Bunny Corcoran is a wealthy and spoiled young man who is always looking for a good time. Charles Tavis is a quiet and reserved young man who is deeply in love with Henry. Camilla Macaulay is a beautiful and intelligent young woman who is drawn to the power and danger of the Classics Club. The students are all deeply in love with Morrow, and they are willing to do anything to please him. Morrow is a complex and mysterious figure, and he seems to be manipulating the students for his own purposes. As the students become more involved with Morrow, they begin to commit increasingly dangerous acts. The Secret History is a brilliant and gripping novel that will keep you speculating until the very end. The novel is a warning tale about the dangers of obsession and the power of evil.

Table of Contents Mathematics Paper1 November 2010

Mathematics Paper1 November 2010 Introduction

Mathematics Paper1 November 2010 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. Mathematics Paper1 November 2010 Offers a vast collection of books, some of which are available for free as PDF downloads, particularly older books in the public domain. Mathematics Paper1 November 2010 : 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 Mathematics Paper1 November 2010 : Has an

extensive collection of digital content, including books, articles, videos, and more. It has a massive library of free downloadable books. Free-eBooks Mathematics Paper1 November 2010 Offers a diverse range of free eBooks across various genres. Mathematics Paper1 November 2010 Focuses mainly on educational books, textbooks, and business books. It offers free PDF downloads for educational purposes. Mathematics Paper1 November 2010 Provides a large selection of free eBooks in different genres, which are available for download in various formats, including PDF. Finding specific Mathematics Paper1 November 2010, especially related to Mathematics Paper1 November 2010, 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 Mathematics Paper1 November 2010, Sometimes enthusiasts share their designs or concepts in PDF format. Books and Magazines Some Mathematics Paper1 November 2010 books or magazines might include. Look for these in online stores or libraries. Remember that while Mathematics Paper1 November 2010, 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 Mathematics Paper1 November 2010 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 Mathematics Paper1 November 2010 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 Mathematics Paper1 November 2010 eBooks, including some popular titles.

FAQs About Mathematics Paper1 November 2010 Books

How do I know which eBook platform is the best for me? Finding the best eBook platform depends on your reading preferences and device compatibility. Research different platforms, read user reviews, and explore their features before making a choice. Are free eBooks of good quality? Yes, many reputable platforms offer high-quality free eBooks, including classics and public domain works. However, make sure to verify the source to ensure the eBook credibility. Can I read eBooks without an eReader? Absolutely! Most eBook platforms offer webbased readers or mobile apps that allow you to read eBooks on your computer, tablet, or smartphone. How do I avoid digital eye strain while reading eBooks? To prevent digital eye strain, take regular breaks, adjust the font size and background color, and ensure proper lighting while reading eBooks. What the advantage of interactive eBooks? Interactive eBooks incorporate multimedia elements, quizzes, and activities,

enhancing the reader engagement and providing a more immersive learning experience. Mathematics Paper1 November 2010 is one of the best book in our library for free trial. We provide copy of Mathematics Paper1 November 2010 in digital format, so the resources that you find are reliable. There are also many Ebooks of related with Mathematics Paper1 November 2010. Where to download Mathematics Paper1 November 2010 online for free? Are you looking for Mathematics Paper1 November 2010 PDF? This is definitely going to save you time and cash in something you should think about. If you trying to find then search around for online. Without a doubt there are numerous these available and many of them have the freedom. However without doubt you receive whatever you purchase. An alternate way to get ideas is always to check another Mathematics Paper1 November 2010. This method for see exactly what may be included and adopt these ideas to your book. This site will almost certainly help you save time and effort, money and stress. If you are looking for free books then you really should consider finding to assist you try this. Several of Mathematics Paper1 November 2010 are for sale to free while some are payable. If you arent sure if the books you would like to download works with for usage along with your computer, it is possible to download free trials. The free guides make it easy for someone to free access online library for download books to your device. You can get free download on free trial for lots of books categories. Our library is the biggest of these that have literally hundreds of thousands of different products categories represented. You will also see that there are specific sites catered to different product types or categories, brands or niches related with Mathematics Paper1 November 2010. So depending on what exactly you are searching, you will be able to choose e books to suit your own need. Need to access completely for Campbell Biology Seventh Edition book? Access Ebook without any digging. And by having access to our ebook online or by storing it on your computer, you have convenient answers with Mathematics Paper1 November 2010 To get started finding Mathematics Paper1 November 2010, you are right to find our website which has a comprehensive collection of books online. Our library is the biggest of these that have literally hundreds of thousands of different products represented. You will also see that there are specific sites catered to different categories or niches related with Mathematics Paper1 November 2010 So depending on what exactly you are searching, you will be able tochoose ebook to suit your own need. Thank you for reading Mathematics Paper1 November 2010. Maybe you have knowledge that, people have search numerous times for their favorite readings like this Mathematics Paper1 November 2010, but end up in harmful downloads. Rather than reading a good book with a cup of coffee in the afternoon, instead they juggled with some harmful bugs inside their laptop. Mathematics Paper1 November 2010 is available in our book collection an online access to it is set as public so you can download it instantly. Our digital library spans in multiple locations, allowing you to get the most less latency time to download any of our books like this one. Merely said, Mathematics Paper1 November 2010 is universally compatible with any devices to read.

Find Mathematics Paper1 November 2010 :

issues in marxist philosophy vol. 2 materialism

isfahan is half the world memories of a persian boyhood

isotope seperation proc international sy

ishis journey from the center to the edge of the world

isaac asimovs space of her own

islands of the argosaronic gulf

island of blue dolphin pen rdr l3 n/e

islam observed religious development in morocco and indonesia

~~istoriia sanktpeterburga v predaniiakh i legendakh~~

~~isle of skye a walkers gd~~

isotopic tracers nuclear radiations wi

isla del tesoro cd

it automation

isabella mine

it didnt happen

Mathematics Paper1 November 2010 :

THE NEW CANNABIS BREEDING: Complete ... THE NEW CANNABIS BREEDING: Complete Guide To Breeding and Growing Cannabis The Easiest Way [DAVID, DR ... English. Publication date. May 5, 2020. Dimensions. 5.5 ... Amazon.com: THE NEW CANNABIS BREEDING ... Cannabis Breeding isn't just a technical manual, it's a fresh, energetic take on the genetic history and future of cannabis; not just the plant's origins and ... Complete Guide To Breeding and Growing Cannabis The ... May 5, 2020 — The New Cannabis Breeding: Complete Guide To Breeding and Growing Cannabis The Easiest Way (Paperback). By Elizabeth David. $10.99. Not in stock ... Cannabis Breeding for Starters: Complete Guide ... Jun 23, 2020 — Cannabis Breeding for Starters: Complete Guide To Marijuana Genetics, Cannabis ... Publication Date: June 23rd, 2020. Pages: 42. Language: English. The Complete Guide to Cultivation of Marijuana ... Jan 24, 2021 — Cannabis Breeding: The Complete Guide to Cultivation of Marijuana for Medical and Recreational Use (Paperback). Complete Guide To Breeding and Growing Cannabis Th... The New Cannabis Breeding: Complete Guide To Breeding and Growing Cannabis The Easiest Way by David, Elizabeth, ISBN 9798643447283, ISBN-13 9798643447283, ... Cannabis Breeding - Boswell Book Company

Cannabis Breeding: The Definitive Guide to Growingand Breeding Marijuana for Recreational and Medicinal Use (Paperback) ; ISBN: 9781711539379 ; ISBN-10: ... Your book guide to breeding the best cannabis strain ... May 2, 2020 — Readers of this complete guide to expert breeding techniques will learn about the new age cultivars, trendy cannabis hybrids, and how to develop ... CANNABIS BREEDING 100% GUIDE: The ... May 6, 2021 — CANNABIS BREEDING 100% GUIDE: The Definitive Guide to Marijuana Genetics, Cannabis Botany and Growing Cannabis The Easiest Way & Cultivating ... Your book guide to breeding the best cannabis strain ... May 2, 2020 — Readers of this complete guide to expert breeding techniques will learn about the new age cultivars, trendy cannabis hybrids, and how to develop ... BUS 499 - Strayer University, Washington Access study documents, get answers to your study questions, and connect with real tutors for BUS 499 : Business Admin. Capstone at Strayer University, ... Business Administration Capstone (BUS 499) - Strayer Studying BUS 499 Business Administration Capstone at Strayer University? On Studocu you will find 60 assignments, coursework, lecture notes, essays, ... BUS 499 - Strayer University, Virginia Beach Access study documents, get answers to your study questions, and connect with real tutors for BUS 499 : Business Administration Capstone at Strayer ... Charter Oak BUS 499: Business Administration Capstone ... I'm going over the syllabus (BUS 499 syllabus) and it says that the course it 8 weeks. Does it actually take that long to complete the course or can I do it ... BUS499 business admin capstone Get BUS499 business admin capstone help — Post your BUS499 business admin capstone homework questions and get answers from qualified tutors. ... exam-prep-img. BUS 499 Syllabus Course Description. This course is a senior capstone seminar for business majors. The goal of the course is to apply and synthesize all previous course ... BUS499 Business Administration Capstone Get BUS499 Business Administration Capstone help — Post your BUS499 Business Administration Capstone homework questions and get answers from qualified tutors. BUS 499: Business Administration Capstone Exam Comprehensive Exam ... Depending upon your specific exam, it may take you 60-90 minutes to complete. Be sure to allow yourself enough time before proceeding with ... Bus 499 Business Administration Capstone Exam Answers Jul 11, 2017 — Mat 126 Week 4 Discussion 2 hcs 438 week 3 quiz answers She said she was glad she made the trip because "it was one of my dreams to come here." ... BUS4993xCourseGuide | BUS 499 SchoolStrayer University - Washington, DC; Course TitleBUS 499 - Business Administration Capstone; Uploaded Bytavarus08; Pages30. Kinetic and Potential Energy Worksheet KEY g=9.8 Calculate it. 21. Determine the kinetic energy of a 1000-kg roller coaster car that is moving with a speed of 20.0 m/s. 22. KINETIC AND POTENTIAL ENERGY WORKSHEET Answer the following: a. What is the kinetic energy of a 1-kilogram ball is thrown into the air with an initial velocity of 30 m/sec? KE= ½ m v2 ½ (1 kg) ... Kinetic Energy (KE) = ½ mass times velocity squared Potential and Kinetic Energy Worksheet. Kinetic Energy (KE) = ½ mass times velocity squared. KE = ½ mv². Potential Energy (PE) = mass times the acceleration ... Kinetic and potential energy worksheet answer keyk o myaiu kinetic and potential energy worksheet classify the following as type of potential energy or kinetic energy (use the letters or bicyclist

pedaling up ... Kinetic and Potential Energy Worksheet Walkthrough - YouTube kinetic and potential energy worksheet Flashcards A. How much kinetic energy does the ball have? B. How much potential energy does the ball have when it reaches the top of the ascent? KINETIC AND POTENTIAL ENERGY WORKSHEET Answer the following: a. What is the kinetic energy of a 1-kilogram ball is thrown into the air with an initial velocity of 30 m/sec? Kinetic vs Potential Energy Practice KEY Page 1. Scanned by CamScanner. Page 2. Scanned by CamScanner. Potential and kinetic energy worksheet and answer key This easy to read, one page passage about potential energy :explains potential energy as stored energygives examples such as a car ...