



basic education

Department
Basic Education
REPUBLIC OF SOUTH AFRICA

FULL MEMORANDUM GRADE 12 PHYSICS 2022 FINAL

This question paper consists of 18 pages and 3 data sheets.

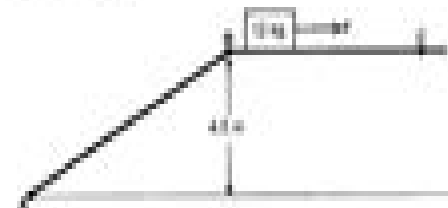
(QUESTION 5 (Start on a new page.)

A 12 kg block is initially at rest at point A at the bottom of a ROUGH inclined plane. The block is pulled up the incline by a constant force F acting parallel to the incline. The block reaches point B, which is at a vertical height of 4.0 m above the horizontal, with a speed of 2.0 m/s. See the diagram below.



- 5.1 Define the term non-conservative force.
- 5.2 Draw a labelled free-body diagram for the block when it is pulled up the incline.
- 5.3 Calculate the total work done on the block by the NON-CONSERVATIVE forces when the block moves from point A to point B. (4)

The same constant force F now moves the block at a CONSTANT VELOCITY across a rough horizontal surface from point B to point C, as shown below. Force F acts parallel to the horizontal surface.



The magnitude of the constant frictional force acting on the block while moving from point B to point C is 40 N, 40% greater than the magnitude of the constant frictional force acting on the block when it moves from point A to point B.

- 5.4 Calculate the distance from point A to point B. (5)

(14)

Physical Science Paper1 June 2013 Memorandum

AW Chickering



Physical Science Paper1 June 2013 Memorandum:

Weighted Bergman Spaces Induced by Rapidly Increasing Weights Jose Angel Pelaez, Jouni Rattya, 2014-01-08 This monograph is devoted to the study of the weighted Bergman space $A_{p,\omega}$ of the unit disc $\mathbb{D}$ that is induced by a radial continuous weight ω satisfying $\lim_{r \rightarrow 1} \frac{1}{r} \int_r^1 \omega(s) ds = 0$. Every such $A_{p,\omega}$ lies between the Hardy space H_p and every classical weighted Bergman space $A_{p,\alpha}$. Even if it is well known that H_p is the limit of $A_{p,\alpha}$ as $\alpha \rightarrow 1$ in many respects it is shown that $A_{p,\omega}$ lies closer to H_p than any $A_{p,\alpha}$ and that several finer function theoretic properties of $A_{p,\alpha}$ do not carry over to $A_{p,\omega}$. **The Case for Pandora** James Essig, Steve McCarter, 2016-12-19 This book is about building craft for space travel a space travel that is not in the distant future but in the immediate future. There is no question that we have the technology to build and power large craft capable of traversing the galaxy and for now this book will focus on achieving the goal of intragalactic travel. We will describe various methods of power generation and propulsion delineate the materials and technology for construction discuss the building of the spacecraft from the outside in and show what is required to sustain life on the craft for extended periods of time. While we will go into some detail on each of these pointing out advantages and disadvantages to components and methods this is not nor is it intended to be a highly technical book to be used by specialists. Rather it is intended to inform the general readership about what is possible and perhaps what is not in building and operating spacecraft for long distance and long duration travel with current and available means. **Title Announcement Bulletin**, 1956 **Energy Research Abstracts**, 1978 **Physical Science Paper 1 & 2 (June Papers)**, 1975 **Physical Science**, 1981

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Table of Contents Physical Science Paper1 June 2013 Memorandum

1. Understanding the eBook Physical Science Paper1 June 2013 Memorandum
 - The Rise of Digital Reading Physical Science Paper1 June 2013 Memorandum
 - Advantages of eBooks Over Traditional Books
2. Identifying Physical Science Paper1 June 2013 Memorandum
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an Physical Science Paper1 June 2013 Memorandum
 - User-Friendly Interface
4. Exploring eBook Recommendations from Physical Science Paper1 June 2013 Memorandum
 - Personalized Recommendations
 - Physical Science Paper1 June 2013 Memorandum User Reviews and Ratings

- Physical Science Paper1 June 2013 Memorandum and Bestseller Lists
- 5. Accessing Physical Science Paper1 June 2013 Memorandum Free and Paid eBooks
 - Physical Science Paper1 June 2013 Memorandum Public Domain eBooks
 - Physical Science Paper1 June 2013 Memorandum eBook Subscription Services
 - Physical Science Paper1 June 2013 Memorandum Budget-Friendly Options
- 6. Navigating Physical Science Paper1 June 2013 Memorandum eBook Formats
 - ePub, PDF, MOBI, and More
 - Physical Science Paper1 June 2013 Memorandum Compatibility with Devices
 - Physical Science Paper1 June 2013 Memorandum Enhanced eBook Features
- 7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Physical Science Paper1 June 2013 Memorandum
 - Highlighting and Note-Taking Physical Science Paper1 June 2013 Memorandum
 - Interactive Elements Physical Science Paper1 June 2013 Memorandum
- 8. Staying Engaged with Physical Science Paper1 June 2013 Memorandum
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Physical Science Paper1 June 2013 Memorandum
- 9. Balancing eBooks and Physical Books Physical Science Paper1 June 2013 Memorandum
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Physical Science Paper1 June 2013 Memorandum
- 10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
- 11. Cultivating a Reading Routine Physical Science Paper1 June 2013 Memorandum
 - Setting Reading Goals Physical Science Paper1 June 2013 Memorandum
 - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Physical Science Paper1 June 2013 Memorandum
 - Fact-Checking eBook Content of Physical Science Paper1 June 2013 Memorandum
 - 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

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