



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 2.00 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 plane.
- 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 Memorandum Grade11 September 2013

**John Bradley, Maria Lycoudi**



## **Physical Science Memorandum Grade 11 September 2013:**

**Captive Audience** Catherine Gidney, 2019-04-02 White Spot a popular BC restaurant chain solicits hamburger concepts from third and fourth grade students and one of the student's ideas becomes a feature on the kids menu Home Depot donates playground equipment to an elementary school and the ribbon cutting ceremony culminates in a community swathed in corporate swag temporary tattoos and a new Home Depot song written by a teacher and sung by the children Kindergarten students return home with a school district prescribed dental hygiene flyer featuring a maze leading to a tube of Crest toothpaste Schools receive five cents for each flyer handed to a student While commercialism has existed in our schools for over a century the corporate invasion of our schools reached unprecedented heights in the 1990s and 2000s after two decades of federal funding cuts and an increasing tendency to apply business models to the education system Constant cutbacks have left school trustees administrators teachers and parents with difficult decisions about how to finance programs and support students Meanwhile studies on the impact of advertising and consumer culture on children make clear that the effects are harmful both to the individual child and the broader culture Captive Audience explores this compelling history of branding the classroom in Canada Everything Science, *Study and Master Physical Science Grade 11 and 12* E. J. Van Zyl, V. Craul, A. Meyer, C. Muller, L. P. Spies, 1999-01 **Focus on Physical Science**, *Study And Master Physical Science Grade 11 Learner's Book* Karin H. Kelder, 2006-10-01 Study Master Physical Sciences Grade 11 takes a fresh and innovative look at the world around us and links science to our everyday lives All case studies and information on specialised fields companies and institutions were personally researched by the author and verified by experts in those fields companies and institutions Physical Sciences Santie Du Plessis, 2015 **Physical Science**, 2009 **Physical Science for Gr 11 : Physical Science for Grade 11 Theory, Exercises & Practical Investigations (CAPS)** J. M. Lucas, 2012 *Physical Sciences Explained* Ron Jones, Neil Berens, 2006 Physical Sciences S. Grussendorff, 2017 *Physical Sciences for All*, 2006 *Spot on Physical Sciences* M. Elfrink, 2008 **Physical Sciences Explained** Ron Jones, Neil Berens, 2006 **Doc Scientia Physical Sciences. Physics** Ronel Bernardo, Hendry Du Plessis, Santie Du Plessis, Doc Scientia Centre, 2013 *Physical Sciences*, 2015 **Physical Sciences for the Classroom** John Bradley, Maria Lycoudi, 2003 *Shutters Physical Sciences*, *Physichem 11 CAPS* Faan Jordaan, Retha Jordaan, Marike De Beer, 2011 **Physical Sciences. Physics** Ronel Bernardo, 2020 **Study and Master Physical Science Grade 11 Learner's Book Afrikaans Translation** Karin H. Kelder, 2006-10-01 Study Master Physical Sciences Grade 11 takes a fresh and innovative look at the world around us and links science to our everyday lives All case studies and information on specialised fields companies and institutions were personally researched by the author and verified by experts in those fields companies and institutions

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