2 Worksheet: Work, energy and power

QUESTION 1

- 1.1 A girl with mass 60 kg slides 3 m down an inclined plane as shown in the picture.
 - a. Calculate the work done on the girl by gravity.
 - b. Calculate the work done on the girl by the normal force.



- 1.2 A block (5 kg) is pulled by a force of 60 N at an angle of 30° to the ground. The block moves 3.25 m.
 - Calculate the work done on the block by gravity.
 - Calculate the work done on the block by the applied force.



- A 1200 kg car is pulled 3 m up an incline (30° with the ground) by a rope exerting a force of 8000 N on the car. The car experiences a 20 N frictional force.
 - a. Draw a labelled free body diagram of all the forces acting on the car.
 - b. Calculate the net work done on the car.



1.4



A block (5 kg) is pulled by a 50 N at an angle of 30° to the ground. The block experiences a 4,2 N frictional force and moves 2,60 m. The block starts from rest. Use the work-energy principle to calculate the speed of the block after the 2,60 m.

- 1.5 A film star in a car (together 720 kg) drives 4,8 m down an inclined plane as indicated in the picture. She starts from rest. The car experiences a frictional force of 23 N, and the engine exerts a force of 200 N.
 - Calculate the work done on the car by the engine.
 - Calculate the velocity of the car after moving 4,8 m.



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United States Naval Academy

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Making Sense of Secondary Science Rosalind Driver, Ann Squires, Peter Rushworth, Valerie Wood-Robinson, 2014-09-19 What ideas do children hold about the natural world How do these ideas affect their learning of science Young learners bring to the classroom knowledge and ideas about many aspects of the natural world constructed from their experiences of education and from outside school These ideas contribute to subsequent learning and research has shown that teaching of science is unlikely to be effective unless it takes learners perspectives into account Making Sense of Secondary Science provides a concise accessible summary of international research into learners ideas about science presenting evidence based insight into the conceptions that learners hold before and even despite teaching With expert summaries from across the science domains it covers research findings from life and living processes materials and their properties and physical processes This classic text is essential reading for all trainee secondary elementary and primary school science teachers as well as those researching the science curriculum and science methods who want to deepen their understanding of how learners think and to use these insights to inform teaching strategies It also provides a baseline for researchers wishing to investigate contemporary influences on children's ideas and to study the persistence of these conceptions Both components of Making Sense of Secondary Science this book and the accompanying teacher's resource file Making Sense of Secondary Science Support materials for teachers were developed as a result of a collaborative project between Leeds City Council Department of Education and the Children's Learning in Science Research Group at the University of Leeds UK Examination Papers of Admission to the United States Naval Academy ... United States Naval Academy, 1899 Kinetic Theory: The Chapman-Enskog solution of the transport equation for moderately dense gases Stephen G. Brush, 1972 Making Sense of Secondary Science James Driver, 2013-01-11 What ideas do children hold about the naturl world How do these ideas affect their learning of science When children begin secondary school they already have knowledge and ideas about many aspects of the natural world from their experiences both in primary classes and outside school These ideas contribute to subsequent learning and research has shown that teaching is unlikely to be effective unless it takes learners perspectives into account Making Sense of Secondary Science Research into Children's Ideas provides a concise accessible summary of the research that has been done internationally in this area The research findings are arranged in three main sections life and living processes materials and their properties and physical processes Much of this material has hitherto been difficult to access and its publication in this convenient form will be welcomed by all science teachers both in initial training and in schools who want to deepen their understanding of how their children think

Making Sense of Secondary Science ,1994 A World on Paper Enrico Bellone,1980 This profound philosophical argument analyzes the mental processes and opinions of such physicists as Maxwell Kelvin Tait etc who between 1750 and 1900 considered the relationship between mathematics and experience causing a revolution which questioned the universal

applicability of Newtonian mechanism Homework Helpers: Earth Science Phil Medina, 2025-09-12 Homework Helpers Earth Science covers all of the topics typically included in a high school or undergraduate course including How to understand the language of rocks The events that we see in the sky and how they affect us Earthquakes and what they can tell us about the inside workings of our world How to understand the weather and what the weatherman is saying Homework Helpers Earth Science is loaded with practical examples using everyday experiences Every topic includes a number of simple tricks to make even the toughest ideas understandable and memorable Each chapter ends with practice questions and explanations of answers As a reference tool Homework Helpers Earth Science can be used as a preview of tomorrow s class or a reinforcement of today s It will leave students with a firm grasp of the material and the confidence that will inspire a deeper understanding **Examination Papers for Admission to the U.S. Naval Academy** United States Naval Academy, 1918 E-science i (science and Technology)' 2003 Ed., Kinetic Theory S. G. Brush, 2013-10-22 Kinetic Theory Volume 3 The Chapman Enskog Solution of the Transport Equation for Moderately Dense Gases describes the Chapman Enskog solution of the transport equation for moderately dense gases Topics covered range from the propagation of sound in monatomic gases to the kinetic theory of simple and composite monatomic gases and generalizations of the theory to higher densities The application of kinetic theory to the determination of intermolecular forces is also discussed This volume is divided into two sections and begins with an introduction to the work of Hilbert Chapman and Enskog that led to the formulation of the Chapman Enskog theory The Chapman Enskog results are then compared with those of earlier theories with respect to viscosity heat conduction diffusion and thermal diffusion Subsequent chapters focus on alternatives to the Chapman Enskog method and some mathematical problems foundations of the kinetic theory of gases and kinetic theory of processes in dilute gases and of heat conduction viscosity and self diffusion in compressed gases and liquids This book should be of interest to graduate students and others undertaking research in kinetic theory **Secondary Science** Catrin Green, 2016-07-21 Part of Phil Beadle's How to Teach Series So you have passion for your subject and you get to work with some of the funniest most surprising and exceptional students But teaching science isn t always a walk in the park How do you get students to think scientifically remember all of those key words and not get acid in their eyes Secondary Science is chockfull of workable ideas for the secondary science classroom Ditch the stereotypical view of a science teacher white coat slides teaching the limewater test to the same class for the fifth year in a row and discover new and creative ways to inspire the next generation to use science Areas covered include the big ideas in science scientific skills and knowledge curriculum practical work difficult topics differentiation assessment feedback and the science of memory and learning including the spacing effect and interleaving The book is packed with advice about teacher talk fun science games ideas for developing scientific literacy ideas for embedding mathematical skill in science advice for extended writing in science advice to make practical work safe meaningful and worthwhile and top tips for teaching the difficult topics that students tend to

dislike Catrin offers tips for teaching areas of the science curriculum including electricity evolution and balancing equations Suitable for all teachers including NQTs and experienced teachers who are looking for new ideas If you are looking for quick and easy ideas to make science fun and relevant while ensuring that all students are successful and confident in your lessons and not overloaded with facts then this book is for you Memorial Tributes National Academy of Engineering, 1984-02-01 Honoring the deceased members and foreign associates of the National Academy of Engineering this volume is an enduring record of the many contributions of engineering to humankind This second volume of Memorial Tributes covers the period from January 1979 to April 1984 **Professional Journal of** The Electrical Engineer ,1892 Military Review ,2008 the United States Army ,2008 Counterinsurgency Reader II., 2008 Backpacker, 2007-09 Backpacker brings the outdoors straight to the reader's doorstep inspiring and enabling them to go more places and enjoy nature more often The authority on active adventure Backpacker is the world's first GPS enabled magazine and the only magazine whose editors personally test the hiking trails camping gear and survival tips they publish Backpacker's Editors Choice Awards an industry honor recognizing design feature and product innovation has become the gold standard against which all other outdoor industry awards are measured The Electrician ,1888 **Army** ,1976

Answers Pgil Work Power And Kinetic Energy: Bestsellers in 2023 The year 2023 has witnessed a remarkable surge in literary brilliance, with numerous compelling novels captivating the hearts of readers worldwide. Lets delve into the realm of bestselling books, exploring the engaging narratives that have enthralled audiences this year. Answers Pgil Work Power And Kinetic Energy: Colleen Hoovers "It Ends with Us" This heartfelt tale of love, loss, and resilience has gripped 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. Answers Pgil Work Power And Kinetic Energy: Taylor Jenkins Reids "The Seven Husbands of Evelyn Hugo" This captivating historical fiction novel unravels the life of Evelyn Hugo, a Hollywood icon who defies expectations and societal norms to pursue her dreams. Reids absorbing storytelling and compelling characters transport readers to a bygone era, immersing them in a world of glamour, ambition, and selfdiscovery. Answers Pgil Work Power And Kinetic Energy: Delia Owens "Where the Crawdads Sing" This captivating comingof-age story follows Kya Clark, a young woman who grows up alone in the marshes of North Carolina. Owens weaves a tale of resilience, survival, and the transformative power of nature, captivating readers with its evocative prose and mesmerizing setting. These top-selling 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 compelling 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 guiet 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 exceptional and suspenseful novel that will keep you speculating until the very end. The novel is a cautionary tale about the dangers of obsession and the power of evil.

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