

REVIEW

Chapter 9

Impulse

1. A fullback of mass 120 kg traveling at 20.0 m/s collides with another player and comes to rest in 1.5 s. What was the force of the impact?

$$F = \frac{0 - 120 \text{ kg}(20.0 \text{ m/s})}{1.5 \text{ s}} = \boxed{-1600 \text{ N}}$$

Impulse $Ft = m(v_f - v_i)$

2. A golf ball of mass 0.050 kg acquires a speed of 80.0 m/s when hit with a force of $3.0 \times 10^3 \text{ N}$. How long was the club in contact with the ball?

$$t = \frac{0.050 \text{ kg}(80.0 \text{ m/s} - 0)}{3.0 \times 10^3 \text{ N}} = \boxed{0.0013 \text{ s}}$$

Impulse

3. What force, acting for $1.35 \times 10^{-3} \text{ s}$, will change the velocity of a 95-g baseball from 50.0 m/s eastward to 45.0 m/s westward?

$$F = \frac{95 \text{ g} \times \frac{1 \text{ kg}}{1,000 \text{ g}} (-45.0 \text{ m/s} - 50.0 \text{ m/s})}{1.35 \times 10^{-3} \text{ s}} = \boxed{-6700 \text{ N}}$$

(-6,685 N)

Inelastic collision

4. A 65-kg ice skater traveling at 6.0 m/s runs head-on into an 85-kg skater traveling straight forward at 4.5 m/s. At what speed and in what direction do the ice skaters travel if they move together after the collision?

$$m_1 v_1 + m_2 v_2 = (m_1 + m_2) v \quad \oplus \quad \ominus$$

$$v = \frac{65 \text{ kg}(6.0 \text{ m/s}) + 85 \text{ kg}(-4.5 \text{ m/s})}{(65 \text{ kg} + 85 \text{ kg})} = \boxed{\oplus 0.050 \text{ m/s}}$$

(in direction of 65 kg skater)

Elastic collision

5. A 4.0-kg object traveling westward at 25 m/s hits a 15-kg object at rest. The 4.0-kg object bounces eastward at 8.0 m/s. What is the speed and direction of the 15-kg object?

$$m_1 v_1 + m_2 v_2 = m_1 v_1' + m_2 v_2'$$

$$4.0 \text{ kg}(-25 \text{ m/s}) + 0 = 4.0 \text{ kg}(8.0 \text{ m/s}) + 15 \text{ kg } v$$

$$v = \frac{(-100 \text{ N}\cdot\text{s} - 32.0 \text{ N}\cdot\text{s})}{15 \text{ kg}} = \boxed{-8.8 \text{ m/s in direction of 4.0 kg object or westward}}$$

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Physics, Volume 2 David Halliday, Robert Resnick, Kenneth S. Krane, 2010-04-20 Written for the full year or three term Calculus based University Physics course for science and engineering majors the publication of the first edition of Physics in 1960 launched the modern era of Physics textbooks It was a new paradigm at the time and continues to be the dominant model for all texts Physics is the most realistic option for schools looking to teach a more demanding course The entirety of Volume 2 of the 5th edition has been edited to clarify conceptual development in light of recent findings of physics education research End of chapter problem sets are thoroughly over hauled new problems are added outdated references are deleted and new short answer conceptual questions are added **Conceptual Physical Science** Paul G. Hewitt, 1998-11

Conceptual Physical Science Third Edition takes learning physical science to a new level by combining Hewitt's leading conceptual approach and friendly writing style in a new edition that provides stronger integration of the sciences more quantitative coverage and a wealth of new media resources to help readers The dynamic new media program includes hundreds of animations and interactive tutorials developed specifically for students taking physical science courses Media references throughout the book point readers to additional online help KEY TOPICS The book's consistent high quality coverage includes five new chapters on chemistry astronomy and earth science for an even more balanced approach to physical science For college instructors students or anyone interested in physical science *U.S. Navy Diving Manual - Revision 7 Change A - Latest Version April 2018* U.S. Navy, 2020-10-12 U S Navy Diving Manual The US Navy first provided a diving manual for training and operational guidance in 1905 and the first book titled Diving Manual was published in 1916 Since then the U S Navy Diving Manual evolved over the decades to be regarded as an essential and ultimate resource for modern recreational commercial and military divers There have been several published versions each one updating the content of the previous version Revision 7 Change A is the latest version released in April 2018 and includes major updates and changes This extensive technical manual is over 1000 pages and spread over 5 Volumes with 18 Chapters This is essential reading for anyone serious about diving Contents U S Navy Diving Manual Volume 1 Diving Principles and Policy Chapter 1 History of Diving Chapter 2 Underwater Physics Chapter 3 Underwater Physiology and Diving Disorders Chapter 4 Dive Systems Chapter 5 Dive Program Administration Appendix 1A Safe Diving Distances From Transmitting Sonar Appendix 1B References Appendix 1C Telephone Numbers Appendix 1D List of Acronyms Volume 2 Air Diving Operations Chapter 6 Operational Planning and Risk Management Chapter 7 Scuba Air Diving Operations Chapter 8 Surface Supplied Air Diving Operations Chapter 9 Air Decompression Chapter 10 Nitrogen Oxygen Diving Operations Chapter 11 Ice and Cold Water Diving Operations Appendix 2A Optional Shallow Water Diving Tables Appendix 2B U S Navy Dive Computer Appendix 2C Environmental and Operational Hazards Appendix 2D Guidance for U S Navy Diving on a Dynamic Positioning Vessel Volume 3 Mixed Gas Surface Supplied Diving Operations Chapter 12 Surface Supplied Mixed Gas Diving Procedures Chapter 13

Saturation Diving Chapter 14 Breathing Gas Mixing Procedures Volume 4 Closed Circuit and Semiclosed Circuit Diving Operations Chapter 15 Electronically Controlled Closed Circuit Underwater Breathing Apparatus EC UBA Diving Chapter 16 Closed Circuit Oxygen UBA Diving Volume 5 Diving Medicine and Recompression Chamber Operations Chapter 17 Diagnosis and Treatment of Decompression Sickness and Arterial Gas Embolism Chapter 18 Recompression Chamber Operation Appendix 5A Neurological Examination Appendix 5B First Aid Appendix 5C Dangerous Marine Animals **AEC Authorizing Legislation** United States. Congress. Joint Committee on Atomic Energy,1973 **Public Access Microcomputers** Patrick R. Dewey,1984 *AEC Authorizing Legislation, FY74* United States. Congress. Joint Committee on Atomic Energy,1973 *AEC Authorizing Legislation, Fiscal Year 1974* United States. Congress. Joint Committee on Atomic Energy,1973 Instructor's Manual [to Accompany] Conceptual Physics, Eighth Ed Paul G. Hewitt,1998 Conceptual Physics Tenth Edition helps readers connect physics to their everyday experiences and the world around them with additional help on solving more mathematical problems Hewitt s text is famous for engaging readers with analogies and imagery from real world situations that build a strong conceptual understanding of physical principles ranging from classical mechanics to modern physics With this strong foundation readers are better equipped to understand the equations and formulas of physics and motivated to explore the thought provoking exercises and fun projects in each chapter Included in the package is the workbook Mechanics Properties of Matter Heat Sound Electricity and Magnetism Light Atomic and Nuclear Physics Relativity For all readers interested in conceptual physics Addison-Wesley Introduction to Physical Science Michael B. Leyden,1988 **Dyslexia in the Secondary School** Jenny Cogan,Mary Flecker,2004-01-16 This book explains why dyslexic students frequently underachieve and demonstrates that adjustments in teaching and learning methods can make all the difference provided that underlying problems are identified After reading Dyslexia in Secondary School teachers will be able to identify children with specific learning problems and know better how to help them with their school work Examples are based on the curriculum and used to show how to advise students on essay writing note taking memorising vocabulary and reading to remember Parents and specialist teachers will find that the book helps them translate educational psychologists theory into practical action The students themselves will be encouraged to look carefully at how they learn and using their strengths rather than their weaknesses try out alternative strategies This book contains diagrams mind maps and worksheets as well as many ideas for teachers Focusing as it does on the way we learn Dyslexia in Secondary School will interest all teachers and students not just those with specific learning difficulties **General Catalog** Iowa State University,1993 *Instructor* ,1969 **Title List of Documents Made Publicly Available** ,1988 Cumulated Index Medicus ,1976 **New York Magazine** ,1997-02-03 New York magazine was born in 1968 after a run as an insert of the New York Herald Tribune and quickly made a place for itself as the trusted resource for readers across the country With award winning writing and photography covering everything from politics and food to theater and fashion the magazine s consistent mission

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