

PHYS-2010 Exam 2 Review Questions

Dr. Luttermoser's Class

1. Define **work**. How is work related to energy? What are the SI, cgs, and English units for work?
 2. What is the **work-energy theorem**?
 3. What is the difference between a **conservative** and a **nonconservative** force?
 4. Define the conservation of energy.
 5. Define **power**. What are the units of power in the SI, cgs, and English systems? What is a **kilowatt-hour**? How is it related to Joules of energy?
 6. Review the summary and all of the Examples of Chapter 5 in the textbook and learn the definition of all boldface terms in this chapter.
 7. For Section VI of the notes, have a good understanding of Examples VI-1, VI-2, and VI-3. As well, make sure you understand how to do the Supplemental Homework Problem Set 2: 1 (SV=textbook:5.16) and 2 (SV:5.32).
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8. What's the difference between **momentum** and **impulse**? Express Newton's 2nd law in terms of momentum.
 9. Define the conservation of momentum. What assumption is used in order for this conservation law to be valid?
 10. What is the difference between an **inelastic**, **perfectly inelastic**, and **elastic** collision?
 11. Review the summary and all of the Examples of Chapter 6 in the textbook and learn the definition of all boldface terms in this chapter.
 12. For Section VII of the notes, have a good understanding of Examples VII-2 and VII-3. As well, make sure you understand how to do the Supplemental Homework Problem Set 2: 4 (SV:6.21).
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13. Discuss the angular analogies to linear displacement, velocity, and acceleration. What is a **radian**? What is the difference between **rotation** and **revolution**?
 14. What is meant by **centripetal** acceleration and force?
 15. Review the summary and all of the Examples of Chapter 7 in the textbook concerning angular motion and learn the definition of all boldface terms in this chapter.
 16. For Section VIII of the notes, have a good understanding of Examples VIII-1, VIII-2, and VIII-3. As well, make sure you understand how to do the Supplemental Homework Problem Set 2: 7 (SV:7.5) and 8 (SV:7.24). Finally, make sure you can handle CAPA Set 2, Problem 8.

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17. Describe Newton's law of gravity. What is G ? What is meant by an **inverse-square law**?
 18. Describe Kepler's 3 laws of planetary motion.
 19. Understand the meanings of these terms: perihelion, aphelion, eccentricity, focus, semi-major axis, semiminor axis, conic section, circular orbits, elliptical orbit, and parabolic orbit.
 20. Review the summary and all of the Examples of Chapter 7 in the textbook concerning gravity and learn the definition of all boldface terms in this chapter.
 21. For Section IX of the notes, have a good understanding of Examples IX-3 and IX-5. As well, make sure you understand how to do the Supplemental Homework Problem Set 2: 9 and 10 (SV:7.44). Finally, make sure you can handle CAPA Set 2, Problem 9.