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).
- 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.
- 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).
- 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.

- 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, semimajor 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.