

SOME HINTS AT PREPARING FOR THE HONORS PHYSICS SEMESTER 2 EXAM

Begin by preparing an excellent notesheet that you may use during the exam!
Here's how...

- A. Start with an 8.5" x 11" piece of paper.
- B. Next, write your name and period number in the upper-right corner. Please do this.
- C. Continue by taking notes on both sides in any format you desire.
- D. Finally, turn it in at the end of class on Tuesday of exam week.

Now, review by answering/studying the following:

1. Know the definition of both a vector and a scalar.
2. Know which quantities are vectors and which are scalars.
3. Know how to add vectors using either diagrams or mathematics.
4. Know the meaning of each term in $F = ma$ and how to use $F = ma$.
5. Know to find gravity on an object, the gravitational force on an object and the weight of an object.
6. Know how to solve a projectile problem, including the understanding of the "vertical" and "horizontal" problems. Don't mix up the two!
7. Know the methods for calculating the centripetal acceleration of an object.
8. Know how to use an accelerometer.
9. Know how Bob "does his thing."
10. Know how to solve for the motion of a low altitude satellite.
11. Know the difference between velocity and speed in uniform circular motion.
12. Know the forces responsible and necessary for both UCM and SHM.
13. Know which variables affect the period of both pendulum motion and general SHM.
14. Know each of Kepler's three laws of planetary motion.
15. Know Newton's law of gravity and how to use it to predict the results of changes.
16. Know the major contributors to the historic development of the solar system.
17. Know which type of problems require momentum conservation.
18. Know how to apply the law of conservation of momentum (vectors!).
19. Know the implications of perfectly elastic and perfectly inelastic collisions.
20. Know the special case of a head-on elastic collision with the target at rest.
21. Know how to determine the spring constant k .
22. Know how to calculate the three energies that constitute mechanical energy.
23. Know how to apply the law of conservation of energy (scalars!).
24. Know Coulomb's law and how to use it to predict the results of changes.
25. Know why an object becomes positively or negatively charged.
26. Know how to charge by contact or induction and the results of each.
27. Know the result of charging a solid or hollow metal object.
28. Know how to find the effects of E fields on charged particles.
29. Know how to predict if your home circuit is overloaded.
30. Know the advantages and disadvantages of series and parallel circuits at home.

31. Know how to predict the direction of the magnetic force on a moving charge.
32. Know the effects of using two coils in transforming voltage and current.
33. Know what happens to the time experienced by a fast-moving person.
34. Know what happens to the length of a fast-moving object.
35. Know what each part of $E=mc^2$ means.
36. Know the types of force particles.
37. Know the types of fundamental particles.