Physics U3 – Review Guide

This is not a comprehensive study help, it is simply a guide to show you what kind of topics to expect on the test. You will have to review the notes and the practice problems we did to be ready for the test.

Good resources for studying:

1. Homework
2. Bell Ringers
3. Class powerpoints
4. Labs (eh)

Topics to be covered:

1. Freefall
   1. Know when an object is considered to be in freefall.
   2. Freefall is a lot like the 1D kinematic motion problems we’ve already been doing, just in the vertical direction.
   3. Acceleration due to gravity in the vertical direction is always 9.8 m/s2.
   4. D=½ a t2 only works if your Vi=0
2. Vector mathematics
   1. SOH CAH TOA. Know what this means and how to use it.
   2. Pythagorean Theorem.
   3. Add two vectors going in the same direction
   4. Add two vectors going in opposite directions
   5. How to add two vectors at two different angles
3. Projectile motion
   1. Describe a particle’s motion if it is moving horizontally
   2. Describe a particle’s motion if it is moving vertically.
   3. Understand that projectiles have both vertical and horizontal components to their motion.
   4. Find the distance traveled if a projectile is launched horizontally.
   5. Find the distance traveled if a projectile is launched at an angle.
   6. Find the distance traveled if a projectile is launched at one vertical position, but ends at another.

QUICK NOTES:

* When trying to figure out projectile motion problems, you will almost always use the vertical component to find time.
* If an object in freefall STARTS and ENDS at the same position (i.e. thrown up into the air and then caught), its final velocity will equal the negative of its initial velocity.
* If an object in freefall STARTS and ENDS at the same position, its halfway point will have a vertical initial velocity of 0.
* A projectile’s vertical motion will act EXACTLY like an object in freefall.
* A projectile’s horizontal velocity will be unaffected by anything (nothing is speeding it up or slowing it down).