

## Physics Final Review Sheet:

General Instructions: The test is CLOSED NOTES  
CALCULATORS CAN NOT BE SHARED UNDER ANY CIRCUMSTANCE.

\*\*\* BRING A CALCULATOR \*\*\*

The test is 50 multiple choice answers and two open-ended questions.

Topics Covered – Kinematic Equations (be able to apply them to actual problems – they will be provided.)  
Projectile Motion (Parabolic Motion) – be able to identify projectile motion and use the Kinematic Equations to solve Projectile problems.  
Forces and Newton's Laws of Motion (Net Force is the sum of all forces acting on an object, Normal Force is the force that the ground will push back up against an object's weight, Weight is the mass of an object multiplied by 9.81 because of gravity, Tension is like Normal Force but in ropes or chains, etc that hold an object in equilibrium, Remember what Newton's 3 Laws of Motion are and what they mean)  
Waves (Light, Sound, types of waves)  
Momentum / Impulse (Remember that Momentum is conserved for all systems and that Impulse is when an applied force can be extended over a longer time – such as airbags)  
Distance and Displacement / Scalars & Vectors Remember that distance is how far TOTAL you go where displacement is the distance from where you ended up compared to where you started. Scalars have only a value. Vectors have a value and a direction.  
Motion Remember that speed = distance / time  
Scientific Method remember the steps of the scientific method  
Units of Physics (ie: second, meter, m/s, kilogram, Newton, etc)  
Work  
Energy (Potential and Kinetic / Conservation of energy) – PE is the energy due to position where KE is the energy due to motion. Total energy is conserved even though PE or KE may change.  
Key terms – vocabulary

### Major ideas to remember:

1. If you know your mass then you can multiply it by 9.81 to get your weight (your downward force exerted on you by gravity)
2. As an object falls to the ground, gravity accelerates it at a constant rate of  $9.81 \text{ m/s}^2$ . The velocity of the object will continue to increase as it falls.
3. If you push down on the ground with a certain force, the ground will push back up with the same amount of force. This is called the Normal Force.
4. The Net Force is the sum of all forces acting on an object.
5. A Force diagram shows all forces acting on an object or by the object.
6. Projectile motion is when an object travels both vertically and horizontally at the same time and under its own force. – no external forces are acting on it.
7. Vectors are added together to find the resultant vector. If vectors are perpendicular to each other, then you will need to use the Pythagorean theorem to calculate the resultant vector.

Don't forget that you can use [www.cusdphysics.wikispaces.com](http://www.cusdphysics.wikispaces.com) to help review for the final. Look in the tutorial section for online help.