**Quarter 1 Final – Study Guide**

Know the following:

Unit Conversions:

* Know how to convert between units using Dimensional Analysis.
* Be able to convert within the metric system (including square and cubed units).

Accuracy and Precision:

* Know what they are and how they apply to labs.

Vectors:

* Know how to add them up graphically (Head-to-Tail).
* Adding parallel and perpendicular vectors.
* Be able to resolve them into components.
* Be able to add vectors that are neither perpendicular nor parallel.

Kinematics:

* Know how to use the definition of velocity to solve word problems
* Know how to use the kinematics equations to solve word problems
* This includes objects moving horizontally as well as vertically

2D Motion/Projectiles:

* Know that the x and y directions are independent of each other
* Know how to solve a 2D kinematics problem
* Know how to solve a projectile problem when given an initial speed at an angle
* Know how to solve a projectile problem when given a horizontal initial speed

Newton’s Laws:

* Know what Newton’s First Law is and how Galileo reached the same conclusion
* Know what Newton’s Second Law says
* Be able to solve simple problems with Newton’s 2nd Law and kinematics