

- Significant figures, accuracy and precision; metric conversions (including density and velocity conversions)
- Velocity, speed, distance and displacement (the exact meaning of each)
- One dimensional motion with constant velocity
- Acceleration and equations of one dimensional motion
- Average velocity and average acceleration
- Free fall and other one dimensional motion problems including multistep and substitution problems
- Graphs of displacement/t, distance/time, velocity/time and acceleration/time and their relations
- Vector operations and word problems related to them (for instance you must understand the meaning of “north of east” or “east of north” etc.), resolving vectors and finding their directions
- Projectiles launched horizontally or at an angle; you must be able to resolve the velocity vector into its components and solve multistep problems. You must also know how to solve problems such as the ones given in problem workbook page 25 (that is the only formula I will give you for the test); relative velocity
- Determining net force and relating it to acceleration, mass and motion equations, as well as inclined planes (problem workbook pages 34-42)
- Newton’s first, second and third laws and their meaning and applications in various force problems
- Atwood machine, elevator and other related problems
- Coefficient of kinetic and static friction; the normal force calculations on flat and inclined surfaces and problems related to the force of friction.
- Momentum, impulse and stopping distance and their relations; conservation of momentum
- Different types of collisions; calculations involving perfectly inelastic and elastic collisions
- You must study all of the questions on the “standardized test section” at the end of chapters 1, 2, 3, 4, and 6
- You must study the test and two quizzes that you took
- You must study and know every question from the Regents practice book: we solved all of the problems for chapters 1, 2, 3, 4, and 6. Since there are no multiple choice questions on your test, similar questions will be given as “short response” problems
- You must study all the problems that were assigned from your problem workbook
- Sample questions given from other high schools