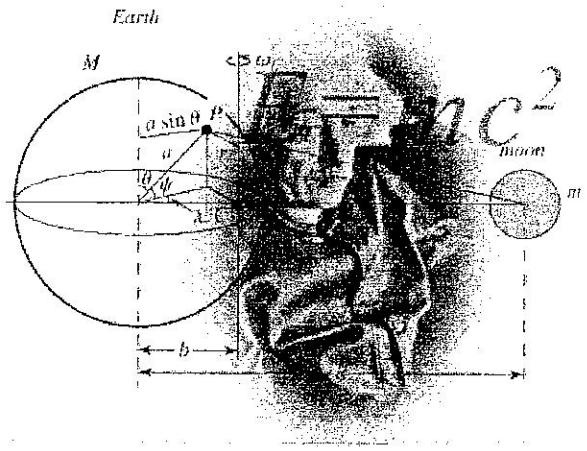
AP Physics Summer Assignment



Welcome to AP Physics 1! It is a college level physics course that is fun, interesting, and challenging on a level you've not yet experienced. This assignment will review all of the prerequisite knowledge expected of you. There are 4 parts to this assignment. It is the quantity not the difficulty of the problems that has the potential to overwhelm, so do it over an extended period of time. By taking the time to review and understand all parts of this assignment, you will help yourself acclimate to the rigor and pacing of AP Physics 1. Use the book if you need to, but really this is all stuff you already know how to do (basic math skills). It is VERY important that this assignment be completed ***individually***. It will be a total waste of your time to copy the assignment from a friend. The summer assignment will be due the first day of class. Good luck! ☺

Part 1: Scientific Notation and Dimensional Analysis

Many numbers in physics will be provided in scientific notation. You need to be able read and simplify scientific notation. **(This section is to be completed *without* calculators…all work should be done by hand.)** Get used to no calculator! All multiple choice portions of tests will be completed without a calculator.

Express the following the numbers in scientific notation. Keep the same unit as provided. ALL answers in physics need their appropriate unit to be correct.

1. 7,640,000 kg

2. 8327.2 s

3. 0.000000003 m

4. 0.0093 km/s

Often times multiple numbers in a problem contain scientific notation and will need to be reduced by hand. Before you practice this, remember the **rules for exponents** you learned in algebra:

When numbers with exponents are multiplied together, you _____ the exponents and _____ the bases.

When numbers are divided, you _____ the exponents and _____ the bases.

When an exponent is raised to another exponent, you _____ the exponents and _____ the base.

Using the three rules from above, simplify the following numbers in proper scientific notation:

5. $(3\text{x}10^{6})\cdot(2\text{x}10^{4}) =$

6. $(1.2\text{x}10^{4}) / (6\text{x}10^{-2}) =$

7. $(4\text{x}10^{8})\cdot(5\text{x}10^{-3}) =$

8. $(7\text{x}10^{3})^{2} =$

9. $(8\text{x}10^{3}) / (2\text{x}10^{5}) =$

10. $(2\text{x}10^{-3})^{3} =$