



### Homework Log instructions

As always, the best way to learn physics is to solve problems. In this way you gain the technical skills that you need. In addition, after solving many problems, you gain conceptual knowledge and can answer qualitative questions without a mathematical solution.

How should you learn to solve problems? A good method is to learn from a solution, such as the Examples in the textbook. You can follow their solution to learn (as well as my solutions in class), but in the end, you **MUST** be able to solve those problems on your own, without any hints. I recommend solving the same problem many times over, but each successive time you rely on the given solution less and less.

Therefore, a necessary (but not sufficient) condition to succeed in this class, is to be able to solve ALL of the Examples in the textbook. Again, when I say “solve,” I mean solve without any help. If you need more practice, there are hundreds of problems at the end of each chapter. I recommend solving the odd-numbered Exercises because the answers (not full solutions) are given. Start with the first odd Exercises in each section, and save the Problems until you have mastered the Exercises. The Discussion Questions are useful to think about **AFTER** you have mastered the quantitative Exercises.

### Examples

**First**, copy out the solution, with words of explanation.

**Second**, work through all the unstated algebraic steps.

**Third**, try to solve on your own, uncovering the solution only as much as needed to get you unstuck.

**Fourth**, repeat until you can do it without help.

### Exercises and Problems

Follow steps 3 and 4 from above.

### Discussion Questions

Read and think about each question. Write out a detailed solution for those questions that intrigue you.

### Bridging Problem

Each chapter has a “Bridging Problem” at the end of the Summary. It brings in tools and concepts from previous chapters so that you can blend them with those from the current chapter. These are excellent tests of your complete understanding of the physics you have learned. I highly suggest working them. However, they are not easy, so don’t expect to solve them quickly.