

Quality Solutions

For each section we discuss, you are assigned one carefully written solution (a **quality solution**) to a problem, after you have had a chance to practice similar problems at home and in class.

Some problems will require you to use *Mathematica*. These are marked with an M in the unit plan, e.g. 2.1.6M. In this case, you should submit a print-off of your computations in *Mathematica* in addition to your written solution of the problem. Some problems are designated challenge problems. These are denoted with an asterisk, e.g. 2.3.49*. Challenge problems do factor into your regular grade. (So don't skip them!)

Submission of written work:

- All written homework is due at the *beginning* of class, and late work will not be accepted.
- Write your name, your section, and the due date on the front page, label each problem, and (if you have multiple pages) write your name on each page you hand in.
- Staple (if you have multiple pages) to make a neat packet.
- Neat edges! If you write your solution on notebook paper, trim the frayed edges with scissors.
- Write neatly. If your handwriting is illegible, use a word processor.

We will be having an ongoing conversation this semester about what makes a well-written solution, but here are some basic requirements.

- Restate the question (that includes copying down any tables or graphs).
- If your solution includes a table, graph, or drawing, make sure it is clearly labeled.
- Show all your steps, and make your reasoning clear.
- For *Mathematica* exercises, include a print-off of your *Mathematica* commands.

Tip: It may be helpful for you to distinguish between the process of *solving a problem* and the process of *writing up your results*. Normally, what a person writes down during the process of solving a problem is *not* sufficiently clear or complete for another person to read and understand, unless they have already done the same problem. Imagine that you are providing a written solution to another student, who needs help understanding how to do a similar problem (and who does not happen to have a copy of the book).

Rubric for quality solutions:

- 4 points: clear, correct, and complete solution of the problem and good presentation
- 3 points: essentially correct, but some small gaps, lack of clarity, or poor presentation
- 2 points: shows partial understanding, e.g. correct start, but significant flaws or gaps
- 1 point: attempted (not just restated), but the approach was inappropriate or the reasoning faulty.
- 0 points: not attempted

The points are “messages,” not percentages! For example, getting an all 3s and 4s (with a few more 4s) would be very good, A-level work, whereas consistently scoring 2s would mean that your work does not demonstrate sufficient understanding to move on (D-level work).

Bonus Points: One bonus point will be added to quality solutions that receive a score of 1 or higher for challenge problems.