

HOW TO USE A STUDENT'S SOLUTIONS MANUAL CORRECTLY

If you have a Student's Solutions Manual, my advice is to use it SPARINGLY. **It is easy to "abuse" this manual by referring to it too frequently and too prematurely.** Students who do so generally struggle on the exams, even though they have completed all the homework. Learning mathematics requires a certain amount of "healthy frustration" and perseverance, trying different approaches (some of which may lead to a dead end) until a solution is found. This process may take time, but it is important to go through it without relying on outside help. If you depend on the solutions manual to provide this direction for you, you are not learning an essential problem solving skill, and likely will not be successful on the exams. **Understanding the solutions provided in the manual is NOT equivalent to having learned the material!**

The Solutions Manual can encourage learning and increase the likelihood of success, or it can (very subtly) stifle learning. It all depends on how you use it. By using this manual inappropriately, you can actually sabotage your own efforts to learn the material and to perform well on the exams. Here are some suggestions on how to use this manual correctly in a way that will stimulate and enhance learning.



Do not work on your homework with the Solutions Manual open at your side. Put the manual somewhere away from you, far enough that you have to get up and walk over to look at it. If it is inconvenient to use, you will use it far less often.



Always check your answers in the back of the book first. Do not use the Solutions Manual to simply check answers. If your answer is correct, then consult the Manual to compare your method with the one provided if you wish. If your answer is incorrect, try the problem again! Do not refer to the Manual yet.



Give yourself at least two separate 15 minute periods to struggle with a homework problem before seeking help from the Manual. If your first attempts at the problem are unsuccessful, move on and continue with the rest of the assignment. Give your mind a chance to work on the problem subconsciously! Later go back to the problem and try it again. You may get some fresh perspectives after working on other problems.



If you still find it necessary to consult the Manual, look up the MINIMUM amount of guidance necessary to help you move on to the next step only! Then continue to solve the problem on your own. If you need to consult the Manual more than twice on a problem, you are probably lacking a sufficient familiarization with the material. Stop and read the section or the lecture notes again before proceeding.



If you required the Solutions Manual for assistance on a problem, work the problem again a second time from beginning to end. Make sure that you can solve the problem without help. Then mark the problem and do it again the next day. Repeat this process until you are able to solve the problem two days in a row on your own.



For "routine" problems, if you have no idea what to do at all, you are not prepared to begin your homework. Study the text and lecture notes until you have enough understanding to know what the problem is asking. You **MUST** determine this yourself! Do not allow the Solutions Manual to guide you through this initial step.



On word problems or application problems, it is **EXTREMELY** important that you learn how to approach the problem and set it up by yourself! If you rely on the Manual to get you through this step, you will most likely do very poorly on the exam. The hardest aspect of solving an applied problem is usually knowing how to get started. Make sure you are able to solve each type of word problem completely unaided. If you needed the Manual to help you with a word problem, do another one of the same type right away. If necessary, find other (unassigned) problems from the text (or other texts) that are similar to practice with. If there are no other similar problems, mark the problem and do it again three or four days later. Repeat until you can solve the problem completely without assistance.

If you find yourself referring to the manual for more than 10% of your homework, or referring to it too quickly on a problem, you are probably abusing it. The Solutions Manual is not available during the exam! If you are unable to do each homework problem without help, you haven't yet learned the material and you will find the exam difficult.