MATH 465: Modern Algebra I
Fall 2025
HOW TO WRITE UP HOMEWORKS SOLUTIONS
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Learning mathematics requires you to do mathematics, which is the point of homework. The main source of feedback that you get is through your homework; it is also my main source of feedback on how you are doing.

The following are instructions and some suggestions for submitting your homework in my course.

Instructions

- Your homework should be written in standard size paper.

- In the upper right hand corner of the first page you must write your name (first and last), and the course number.

- Homework with multiple pages should be stapled on the upper left-hand corner; I will bring a stapler with me to class the days homework is due so you can staple it before turning it in, if necessary.

- Problems should be clearly labeled and numbered on the left side of the page.

- Problems should be written in the order in which they are assigned; in other words, the solution to Problem 2 should appear before the solution to Problem 3.

- Please use a single column for your solutions. Filling the page makes it difficult for me to write comments, and forces me to go searching for your solutions (which makes it harder for me to grade).

- If you use a calculator or on-line mathematics package, you must indicate you did so; write explicitly what you used and what you typed. That way, I can reproduce your actions and check your work.

- Do not use material from sections that are later in the book to solve assigned problems, even if you learned it elsewhere or if we already covered it in class.

- **JUSTIFY YOUR ANSWERS.** I **give no credit** for answers that are not justified by work leading to the solution. *Only on the rarest of occasions, with the most simple problems, will I allow a solution with no justification.*

  Rule of thumb: *If you had to stop and think about it, you need to stop and write it down.*

Suggestions

- It is good practice to first work out the solutions to a homework problem on scratch paper, and then to write up your solutions (with the correct work leading up to it) on the papers you will turn in. This will help you turn in a clean finished product which will make both grading and reviewing it easier.

- **Never replace a fraction with a decimal approximation.** In other words, you should use $\frac{1}{3}$, and not .33 (though it is okay to use 0.5 instead of $\frac{1}{2}$, since these two are *exactly equal*).

- **Avoid using decimal approximations, at least until the end of the problem.** Every time you use a decimal approximation, you introduce errors. If you do computation with an approximation, your answer is then even farther from the actual answer, and so on. In addition, often you will find that complicated expressions may cancel out and lead to nice expressions. So keep expressions like $\sqrt{2}$, $\ln(2)$, and so on, indicated throughout your work. Only at the very end of the problem might you try to replace it with a decimal approximation.

- **If you are instructed to use approximations, do not use the = sign.** The sign = means *"is exactly equal to."* If you are using an approximation, then the correct symbol to use is $\approx$, which means *"is approximately equal to."* **Conversely, if you are replacing a number with something that is exactly equal to it, then you should use = and not $\approx$.** So if you replace $\frac{1}{8}$ with 0.125, then you should use =.