

INSTRUCTIONS

Submit solutions to the required problems below (p. 2) to the **Problem Set 7** slot on D2L by 11:59 pm on Friday, March 20. No late work will be accepted, and no work will be accepted via email. Please format your solutions as follows; submissions that do not follow these guidelines will receive a score of 0.

1. Submit only a single pdf to D2L. Use a scanning app (such as CamScanner) or a pdf editor (such as `combinepdf.com`) to assemble your work.
2. Scans should be legible and clearly, consistently, and brightly lit with no shadows; photographs of work that include background material (your desk, your legs) are unacceptable.
3. Submit problems in the order that they are assigned, clearly number your problems, and distinguish between successive problems, e.g., by drawing a line across your page to indicate a break between problems or starting new problems on new pages.
4. Check that you have submitted the correct assignment to the correct D2L slot by downloading your submission and making sure that you can open the resulting pdf and that all pages open in the correct orientation (portrait, not upside-down).
5. Write in complete sentences, unless otherwise permitted. *Solutions not written in complete sentences will be scored 0, regardless of their correctness.* Examples of mathematical writing in complete sentences are found throughout the daily log and in the textbook. If you are unsure of your sentence structure, please ask in advance of submission.

Here are some tests for sufficient “detail” in your solutions.

Test for detail 1. *If you return to these solutions sometime in the future (say, while studying for an exam), you should be able to understand your former work completely with minimal effort from the future you.*

Test for detail 2. *If you show these solutions to a classmate who has paid attention in class up to the time of the assignment but not attempted the assignment, that classmate would also be able to understand your work completely with minimal effort from them.*

Test for detail 3. *If you return to your work an hour after you have written it and try to read it aloud, your narration should be complete enough, your notation clear enough, and your calculations thorough enough that you have no hesitation or confusion.*

Additional recommended problems are listed on p. 3. Solving these problems is essential for your long-term mastery of course material and may also help with short-term difficulties on the required problems.

REQUIRED PROBLEMS TO SUBMIT TO D2L

- Day 21 in the daily log: Problems 21.4, 21.6, 21.8
- Day 23 in the daily log: Problem 23.5
- Section 3.2 in the textbook: 27, 32 (here R is the R -factor in the CR -factorization of A), 41 (by “null space matrix” Strang means find a matrix whose column space equals the null space of the given matrix A , B , or C)
- Section 3.3 in the textbook: 1, 4, 6, 7, 10, 27

Problems on Quiz 6, which we will take on [Friday, March 27](#) will come directly from the problems above. Solutions to problems from Strang’s book are already available on D2L (though you should avoid consulting them until you have worked each problem thoroughly); solutions to required problems from the daily log will be available on D2L after the problem set’s due date.

Additionally, the quiz will contain questions about vocabulary from Days 1 through 26 in the daily log. Candidate vocabulary concepts are specified in the vocabulary box at the start of each day’s material. Such questions may ask for the definition of a concept, an example of a concept, or a nonexample of a concept (concepts requiring a nonexample are marked (N) in the box at the start of daily material). A guide for studying vocabulary, including details on examples and nonexamples, is available on the course website.

RECOMMENDED PROBLEMS FOR EXTRA PRACTICE

- All (!)- and (★)-problems in the daily log
- Section 3.3 in the textbook: 2, 3, 5, 8, 9, 12, 13, 20, 21, 22, 23, 24, 25, 26, 28. *All of these are hugely important problems.*