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INSTRUCTIONS

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Submit solutions to the required problems below (p. 2) to the `Problem Set` slot on D2L by 11:59 pm on Friday, . 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 lit; 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).

You should strive for (at least!) the level of detail and "polish" in my solutions to examples in the lecture notes. (The work that I present on the board in your class and that probably appears in your class notes is *not* as sufficiently detailed and polished as your assignments should be—that work should resemble more your first drafts of solutions.) Here are three 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 35 in the daily log: Problems 35.6, 35.7

- Day 38 in the daily log: Problem 38.10

- Day 40 in the daily log: Problem 40.8

- Day 41 in the daily log: Problems 41.1, 41.3, 41.11

- Section 5.3 in the textbook: 5.3.6 [Hint: *this operator T satisfies $T\mathbf{v} = B\mathbf{v}$; the goal is to find a matrix C such that the adjoint T^* satisfies $T^*\mathbf{w} = C\mathbf{w}$. So, in our notation from the daily log, we know $[T] = B$, and we want the matrix C to satisfy $[T^*] = C$. Proposition 5.14 on pp. 313–314 of the book will be helpful.*]

- Honors Contract only: read pp. 283–284 in the textbook on the QR factorization and do the following problems from Section 4.5—4.5.8 (a) and (b), 4.5.10 (a), 4.5.22

Recommended Problems for Extra Practice

- Section 5.3 in the textbook: 5.3.7, 5.3.13

- All problems in the daily log, other than those marked optional

- All "Quick Exercises" from the textbook that were suggested in the daily log