

Homework #2

CS675 Fall 2026

Due Friday Sept 25, by 5pm

General Instructions The following assignment is meant to be challenging. Feel free to discuss with fellow students, though please write up your solutions independently and acknowledge everyone you discussed the homework with on your writeup. I also expect that you will not attempt to consult outside sources, including generative AI models, for solutions to any of these homework problems — doing so would be considered cheating. Please see the course website for details on the academic integrity policy.

Several of these problems are drawn from the following texts, each of which is linked on the course website: Luenberger and Ye (4th edition), Korte and Vygen (5th edition), and Boyd and Vandenberghe. Please make sure you are using the correct edition of each of the books by using the links on the course website.

We request that you submit your homework as a pdf file, by email to the TA.

Finally, whenever a question asks you to “show” or “prove” a claim, please provide a formal mathematical proof.

Problem 1. (5 points)

B&V Exercise 2.3.

Problem 2. (5 points)

B&V Exercise 2.12.

Problem 3. (5 points)

B&V Exercise 2.26.

Problem 4. (4 points)

B&V Exercise 3.12.

Problem 5. (4 points)

B&V Exercise 3.24.

Problem 6. (4 points)

B&V Exercise 3.29.

Problem 7. (4 points)

B&V Exercise 3.30.