

Due date of this homework: August 31th, 2026 at 11:59:59.

1. All of your homework assignments should ideally be typed. So you have two options: you can use Word or make life easier and learn how to use $\text{\LaTeX}$. Please use whatever software you're comfortable with. $\text{\LaTeX}$ produces a much better-looking document and typing it in is super easy, especially when typing equations and formatting figures. Please go through this 30-minute guide:

- https://www.overleaf.com/learn/latex/Learn_LaTeX_in_30_minutes
- <https://www.overleaf.com/learn/latex/Tutorials>

For this problem, I want you to type the content of this PDF

<https://lab.prn.vanderbilt.edu/taha/wp-content/uploads/sites/154/2017/10/homework3.pdf>

Try to get it as close as possible to the PDF. Basically the deliverable of this problem is a latex source file that, once compiled, looks like the above PDF. I am attaching the homework template so you could build on it (the header basically and the format).

2. **Installing and playing with CVX:** The objective of this exercise is to get you started with CVX—the convex optimization solver on Matlab (also available on Python). Do the following:
 - Go through <http://cvxr.com/cvx/> and <http://web.cvxr.com/cvx/doc/intro.html#what-is-cvx>
 - Download and Install CVX on Matlab: <http://cvxr.com/cvx/download/>, <http://web.cvxr.com/cvx/doc/install.html>
 - Read the first four chapters pages of the CVX User's Guide: <http://web.cvxr.com/cvx/doc/CVX.pdf> (till Page 25 of the PDF, it's not much I promise).