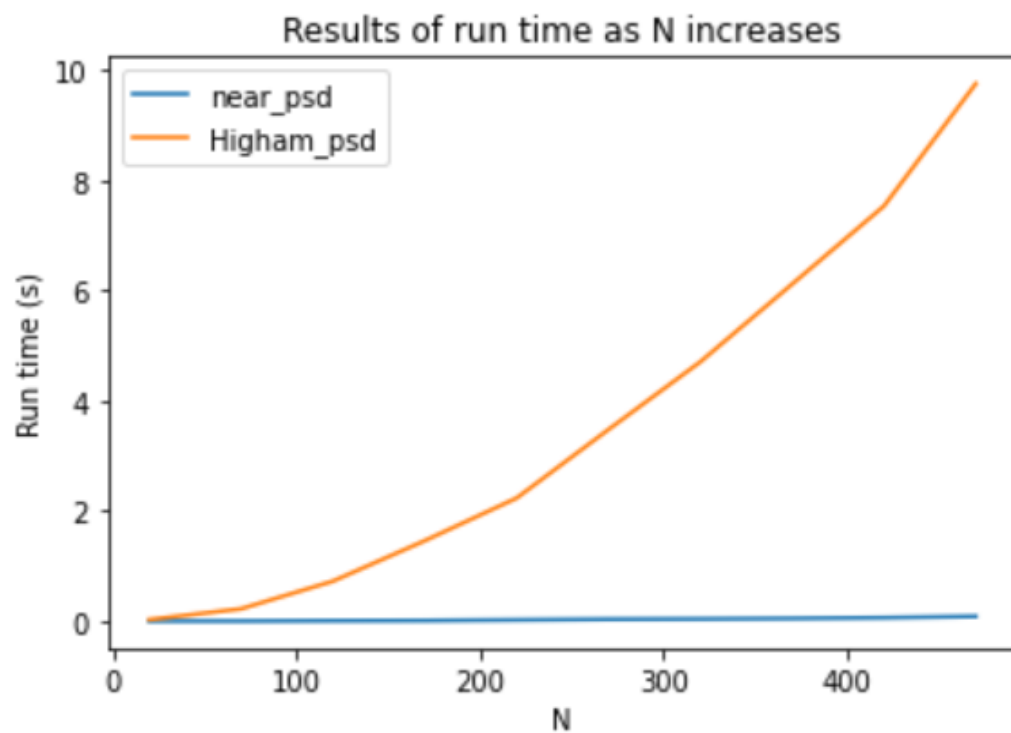
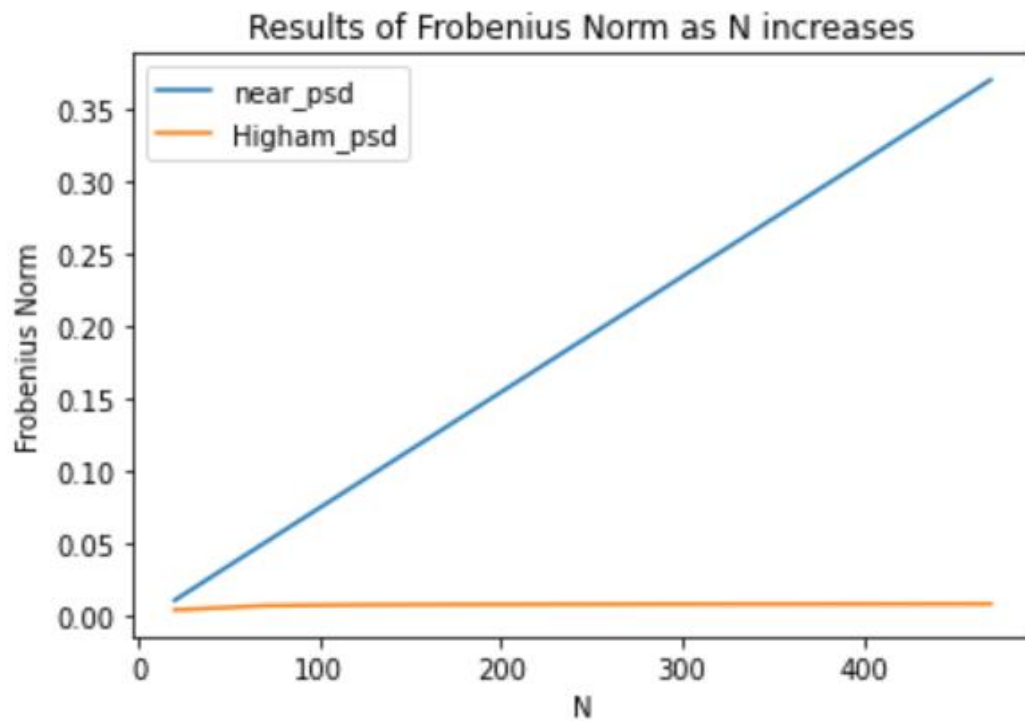


## Week 3 Project

### Problem 2

Here are the results:



As N increases, the Frobenius Norm of Higham's method stays almost the same. But the Frobenius Norm of near\_psd increases significantly. This indicates that Higham's method

generates more accurate results. As  $N$  increases, the run time of Higham's method increases significantly. But the run time of `near_psd` doesn't increase much.

So, we can conclude that the pros of Higham's method is that the implementation is more robust and it works well for large matrices. The cons of Higham's method is that it takes more time to run when working with large matrices. The pros of `near_psd` is that it works well for small matrices and the run time remains short when working with large matrices. The cons of `near_psd` is that as the matrices get larger, the error increases sharply.

I would choose to use `near_psd` when I need to make a quick correction to a small non-PSD matrix. I would choose to use `higham()` when run time is not important. I can then get a more accurate result, especially when the matrices are large.