

18.06 Problem Set 7

Due Thursday, 28 October 2010 at 4pm in the correct location for your recitation. Please note that the problems from the textbook are out of the 4th edition: make sure to check that you are doing the correct problems.

Even if it is not explicitly asked in the exercise you need to explain (write down the way you got to) all solutions.

Each Problem worth 10 points.

1. Do problem 3 from section 5.1.
2. Do problem 5 from section 5.1.
3. Do problem 28 from section 5.1.
4. Do problem 15 from section 5.2.
5. Do problem 23 from section 5.2.
6. Do problem 34 from section 5.2.
7. Do problem 16 from section 5.3.
8. Do problem 27 from section 5.3.
9. Do problem 28 from section 5.3.
10. Compute: In MATLAB or your favorite language, take your favorite three by three matrix A and replace the $(1, 1)$ element with x . Call this $A(x)$.

Have the system compute $\det(A(x))$ for a range of x 's and plot.

For $n = 100, 200, 400$ etc. try to time determinants. In timing it could be handy to average a few runs.

In MATLAB it is. $A = rand(n)$; tic, $\det(A)$; toc Guess a formula for the time for large n .