

5627: HW1

1. Define all the terms in Thm 1.2.3
2. Lower triangular solve.
 - 2.1. Define a small test problem for the lower triangular solver algorithm in 1.3.3. Work your test problem by hand.
 - 2.2. Write a function "LowerTSolve[G,b]" in your favorite software that takes a lower triangular matrix G and a vector b and returns the solution following algorithm 1.3.3. You do not need to test for division by zero or for G being lower triangular.
 - 2.3. Test your code on your small hand example. Test your code on at least 5 randomly generated examples. Show the results.
 - 2.4. Produce a log-log plot of the time for your algorithm on a range of sizes with a comparison line at the theoretical op count slope.
 - 2.5. Produce a log-log plot of the time for the built-in linear solve on a range of sizes with a comparison line at the theoretical op count slope. Comment!