MA/CSSE 473 Day 17 Announcements and Summary

Announcements:

- 1. HW7 (a smaller assignment) due today; HW8 due Monday.
- 2. In my office today: Hours 6-8, possibly first half of 10.

Main ideas from today:

- 1. What is the definition of the convex hull of a set of 2-dimensional points?
- 2. Describe the brute force Convex Hull algorithm.

3. Describe the "divide" part of the QuickHull algorithm. (Include P₁, P_n, S₁, and S₂ in your description)

4. How do we construct the upper hull from the set S_1 and points P_1 and P_n ?

- 5. How many numeric additions and multiplications are used to multiply two 2×2 matrices using the standard method?
- 6. How many numeric additions and multiplications are used to multiply two 2×2 matrices using Strassen's formulas?
- 7. Write and solve recurrence relation for straightforward divide-and conquer" matrix multiplication of two NxN matrices, where N is a power of 2.

8. Write and solve the recurrence relation for the number of multiplications in Strassen's algorithm.

9. Write the recurrence that takes additions into account, and give an asymptotic approximation to its solution.