5.5.7, 5.5.8, 5.5.9



5.5.7)

To find P\_max in the quickhull algorithm you must first have a bunch of points on your graph or chart and then divide that into two subsets of points, once divided P\_maxs the point at maximum distance from your subset line. Each subset will have its own P\_max to solve for. SO what your looking for in actuality is the farthest (x,y) from your (x,y) line. Using the equation h = (x1(y2-y3)+x2(y3-y1)+x3(y1-y2))/(sqrt((x2-x1)2+(y2-y1)2) to find the distance from your line to the point.



5.5.8)



The best case for quickhull would happen when each subset is balanced, when balanced we get T(n) = 2T(n/2) + O(n) which is equal to T(n) = O(n log(n)) during best case scenario.

5.5.9)

To make quick hull a quadratic equation you would need to make each partition unbalanced so you could have 4 inputs on the lower side but have 200 on the top side of your line causing most of the time to be spent searching points on the upper side as now there are huge amounts of data that need to be compared and calculated on to find a P\_max

