Function Convex Hull
Input: a set of points
Output: a set of lines that form the convex hull around the original points
Sort points by x values (nlogn complexity)
While n > 5: (n complexity)
  Divide set in half at the middle
For each set: (n complexity)
  Bruteforce hull(constant time since sets are small)
For each pair of sets (nlogn complexity)
  Take rightmost point of left set and leftmost point of right set and make a line
  Compare slope of line to the line made by moving one point around the circle (n time)
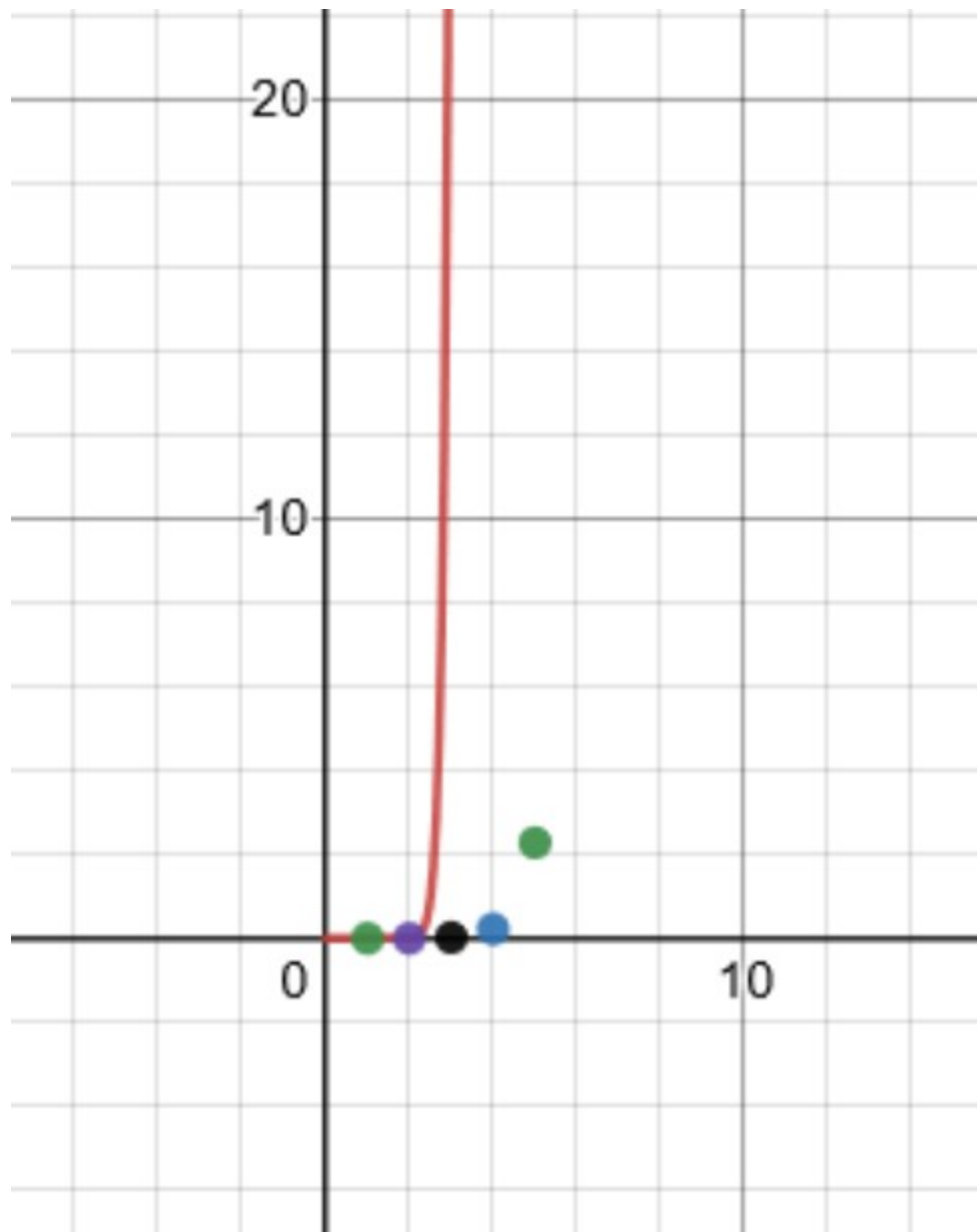 Based on the slope you can tell if the old line was not tangent
Space complexity is just n, since you split the set and combine it, but never duplicate it

Using the master theorem we get
$T(n) = 2T(n/2) + n^1$
$1 = \log_2 2$
$n\log n$

I seem to be off by a constant time factor of about 2, probably due to inefficiencies somewhere down the line