COMPUTATIONAL COMPLEXITY OF INCREMENTAL ALGORITHM

1. Sort the points: $O(n \cdot \log n)$ (n points)

   Number of operations is not more than $C \cdot n \cdot \log n$, for some constant C, and large n.

2. loop over all the points: $k = 4$ to n] $O(n)$ operations

   loop over existing hull to find start & end vertices $O(n^2)$

   ↳ involves up to k LeftOf queries

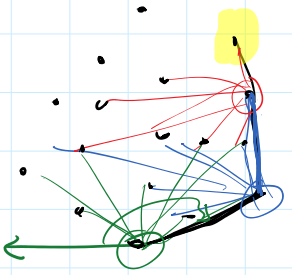
total complexity is proportional to:

$$4+5+6+7+\cdots+n = \frac{n(n+1)}{2} - 6 \text{ is } O(n^2)$$

Incremental algorithm is $O(n^2)$,
where n is the number of points.

GIFT-WRAPPING ALGORITHM

1. Find the lowest point
2. Draw lines from this point to all other points. Choose the point whose line has the largest angle with the neg. x-axis.



3. Repeat #2, working counterclockwise around the convex hull.