

Pseudo code:

### GRAHAM\_SCAN (Q)

1. Find  $p_0$  in Q with minimum y-coordinate (and minimum x-coordinate if there are ties).
2. Sorted the remaining points of Q (that is,  $Q - \{p_0\}$ ) by polar angle in counterclockwise order with respect to  $p_0$ .
3. TOP [S] = 0
4. PUSH ( $p_0$ , S)
5. PUSH ( $p_1$ , S)
6. PUSH ( $p_2$ , S)
7. For  $i = 3$  to  $n$
8. do while the angle between NEXT\_TO\_TOP[S], TOP[S], and  $p_i$  makes a right turn
9. do POP(S)
10. PUSH (S,  $p_i$ )
11. Return S