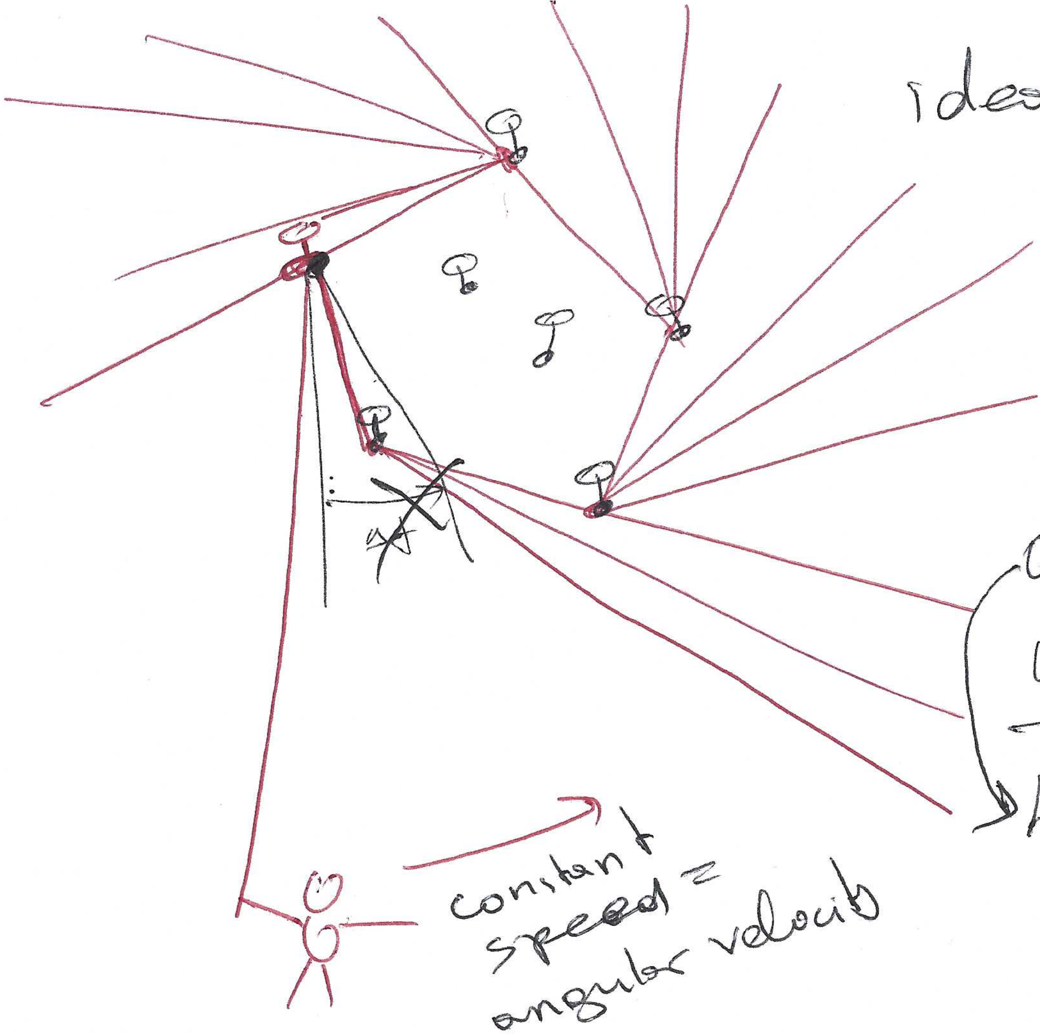
idea: <u>continuous</u> walk around point

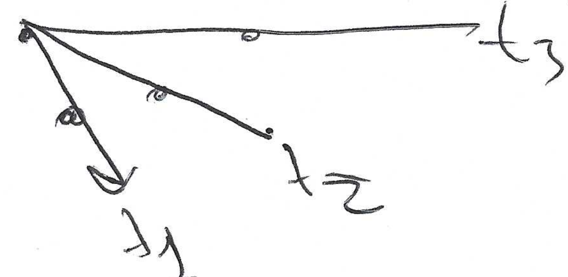


"discretize"? α

Q1) events ←

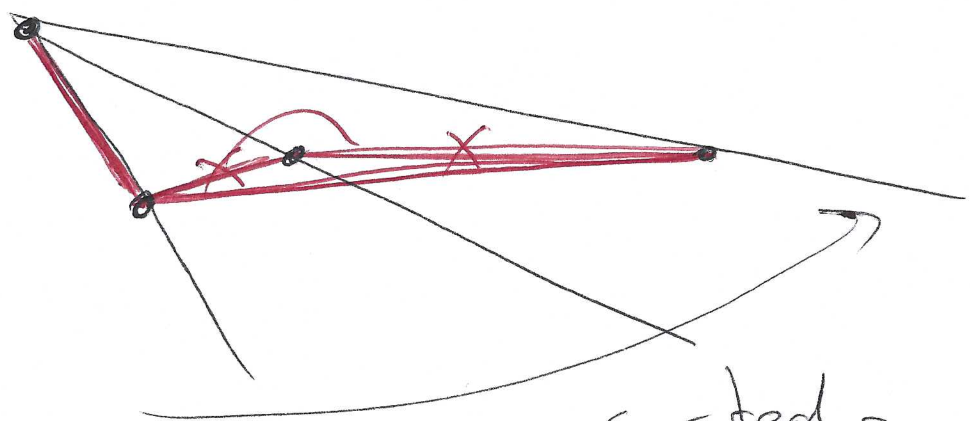
Q2) queue ordered by time

A1) "catching" nails. α
= angle time



→ queue

Q3) Processing.

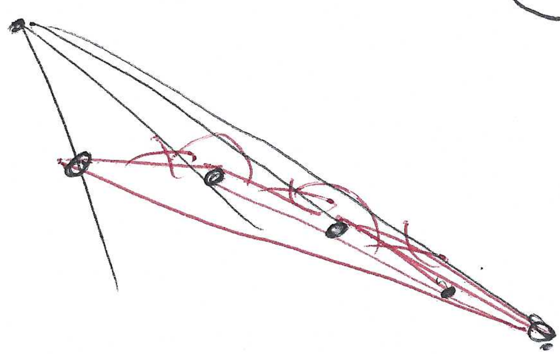


sorted angles

processing: 1) add edge

2) remove prev. edge,

add spanning edge



~~sort angles → add to~~

add angles to queue (sorted) // ~~n^2~~ insertion sort ? — ~~rep~~ present? **n log n**

while (not empty) { n-1

a = pop ;

check internal < 180°

if not go back . and span

}

?? n-3 total across all iter.

$(n-1) \cancel{\times} (n-3)$ ≠

$$O(\underbrace{n\log n}_{init} + \underbrace{n-1}_{iter} + \underbrace{n-3}_{back}) = O(n\log n)$$

create binary heap (n)

while not empty {

(n-1) log n

a = pop

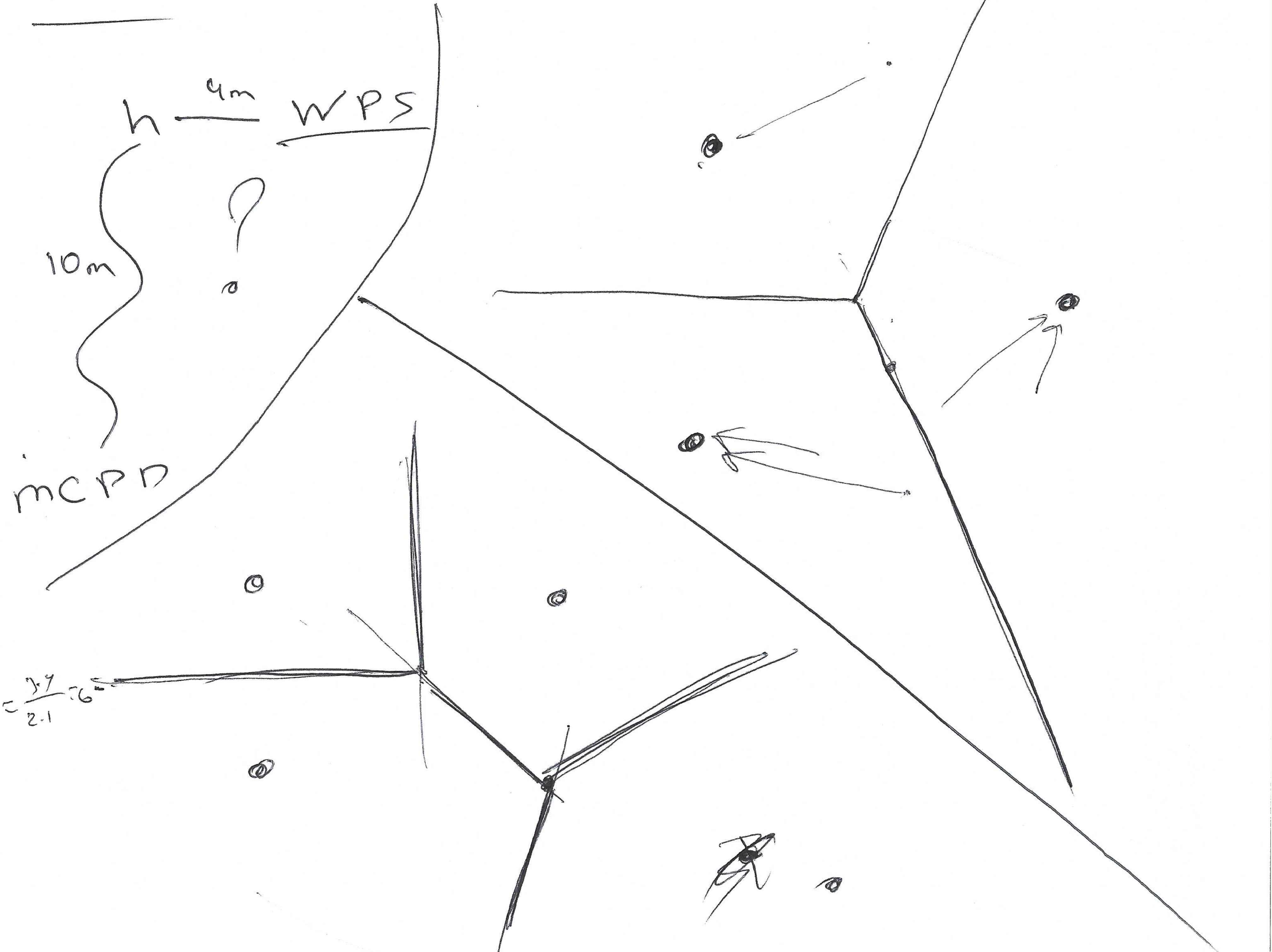
check and span

n-3

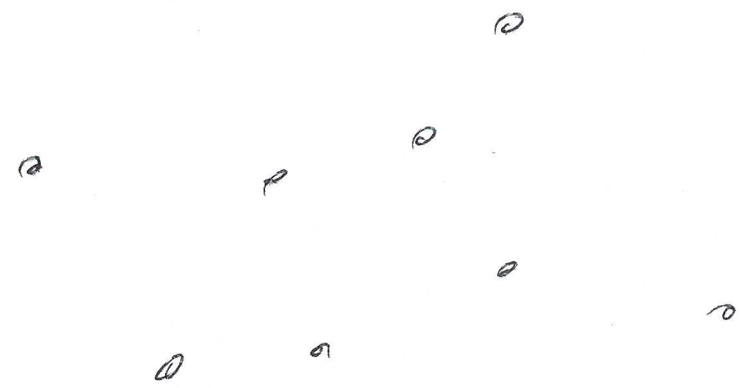
}

$O(n \log n)$

Post-office problem



$\binom{4}{2} = \frac{3 \cdot 4}{2 \cdot 1} = 6$



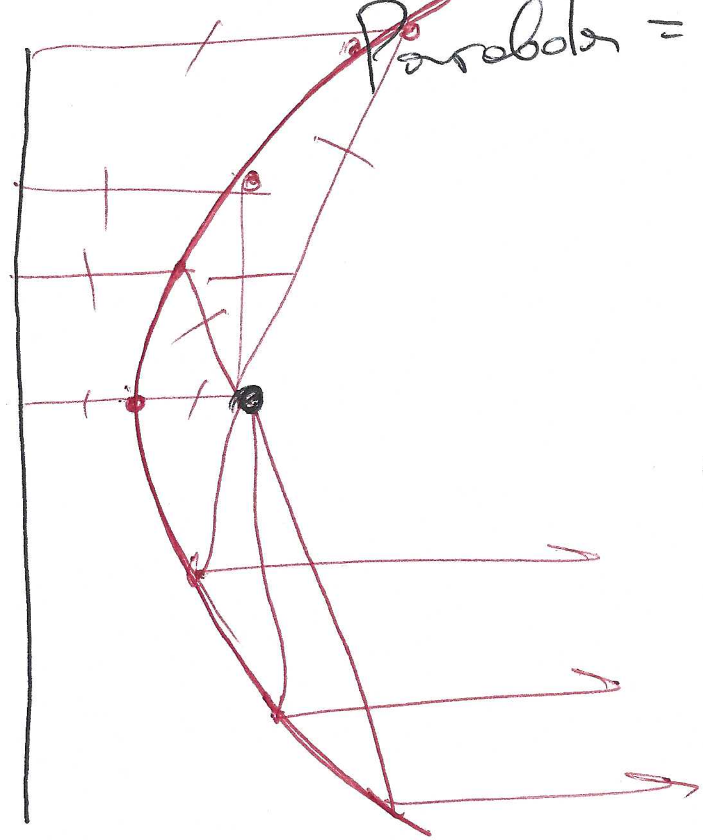
n points

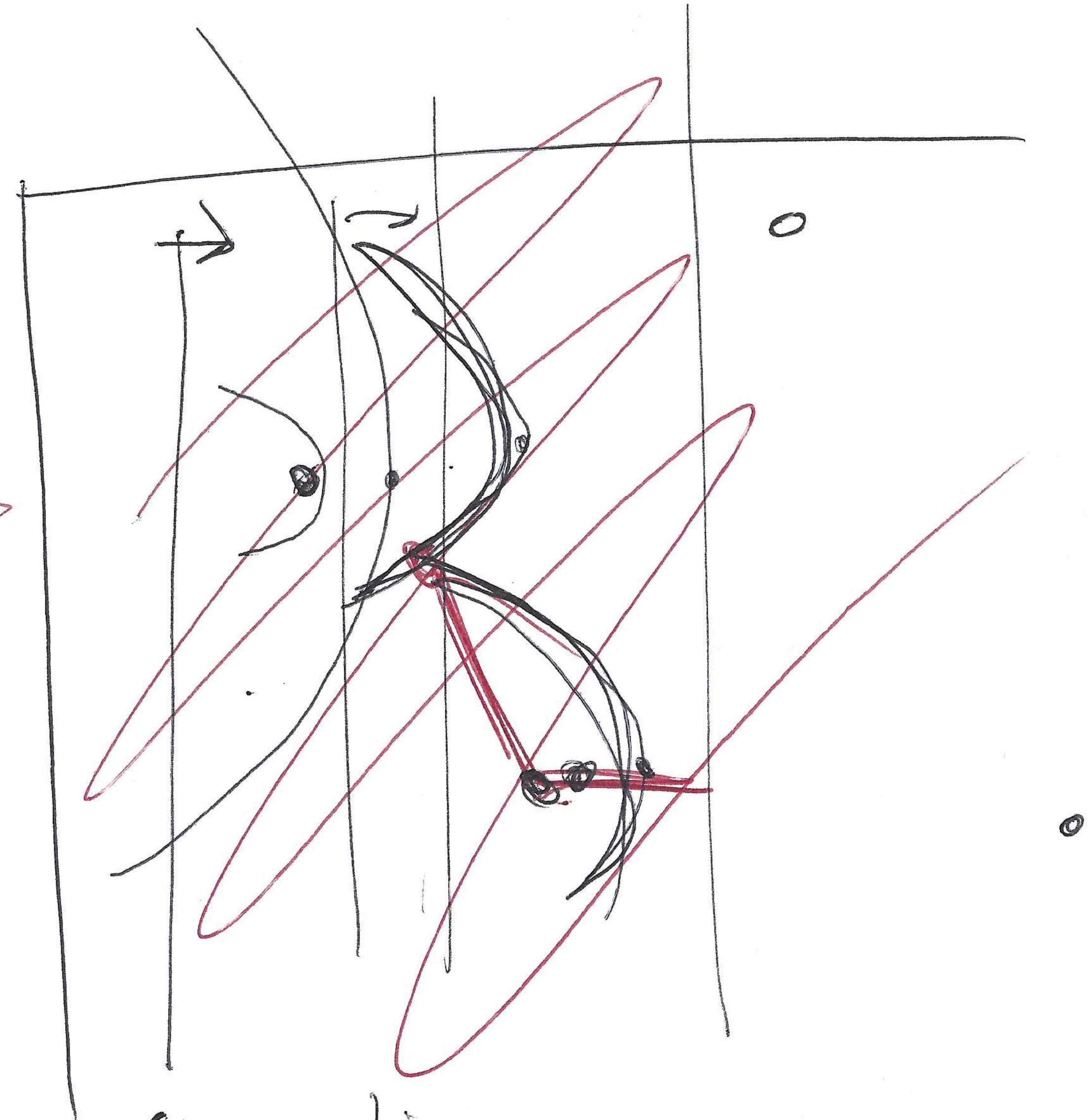
$\frac{n(n-1)}{2}$ mid. perp.

point = inters. of 2 m.p.

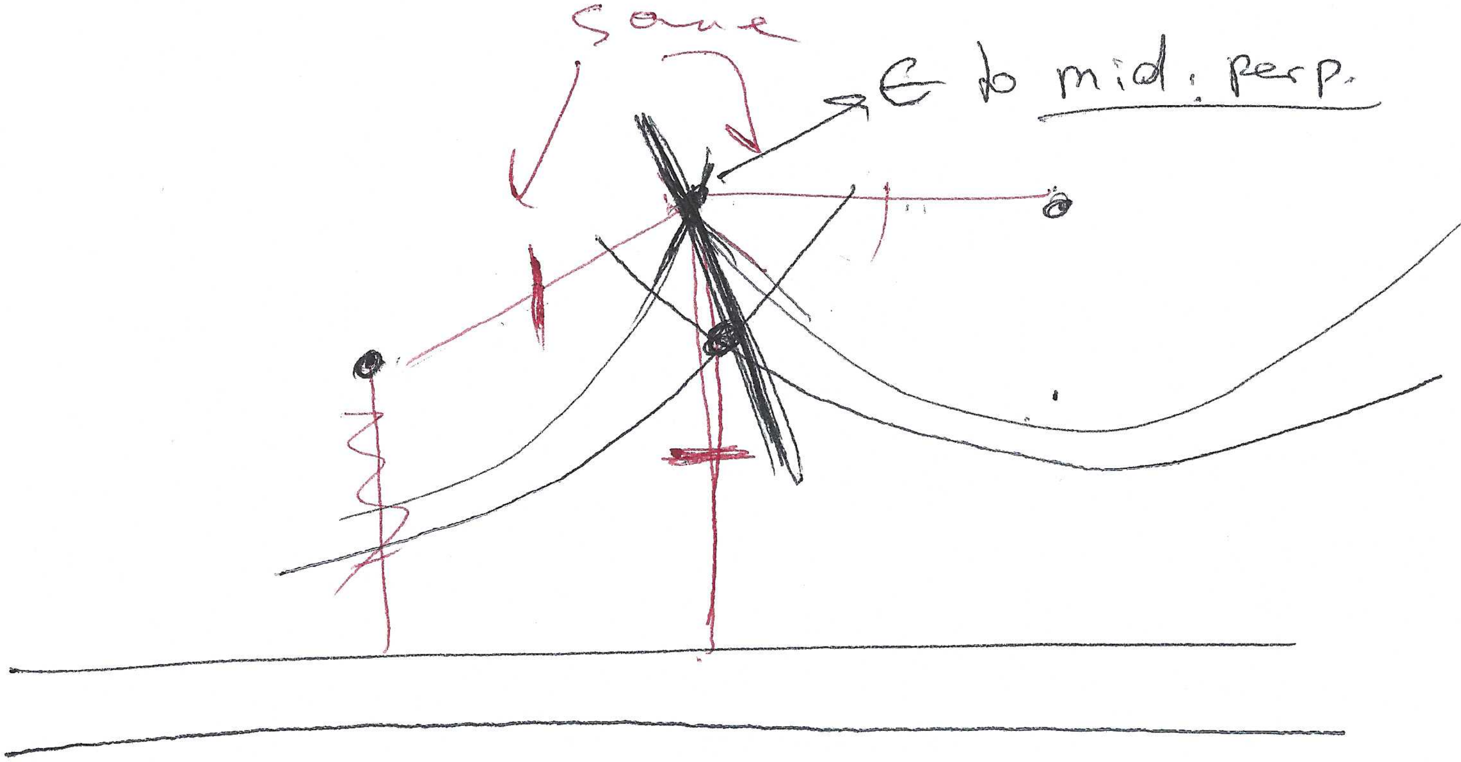
$O(n^4)$ points.

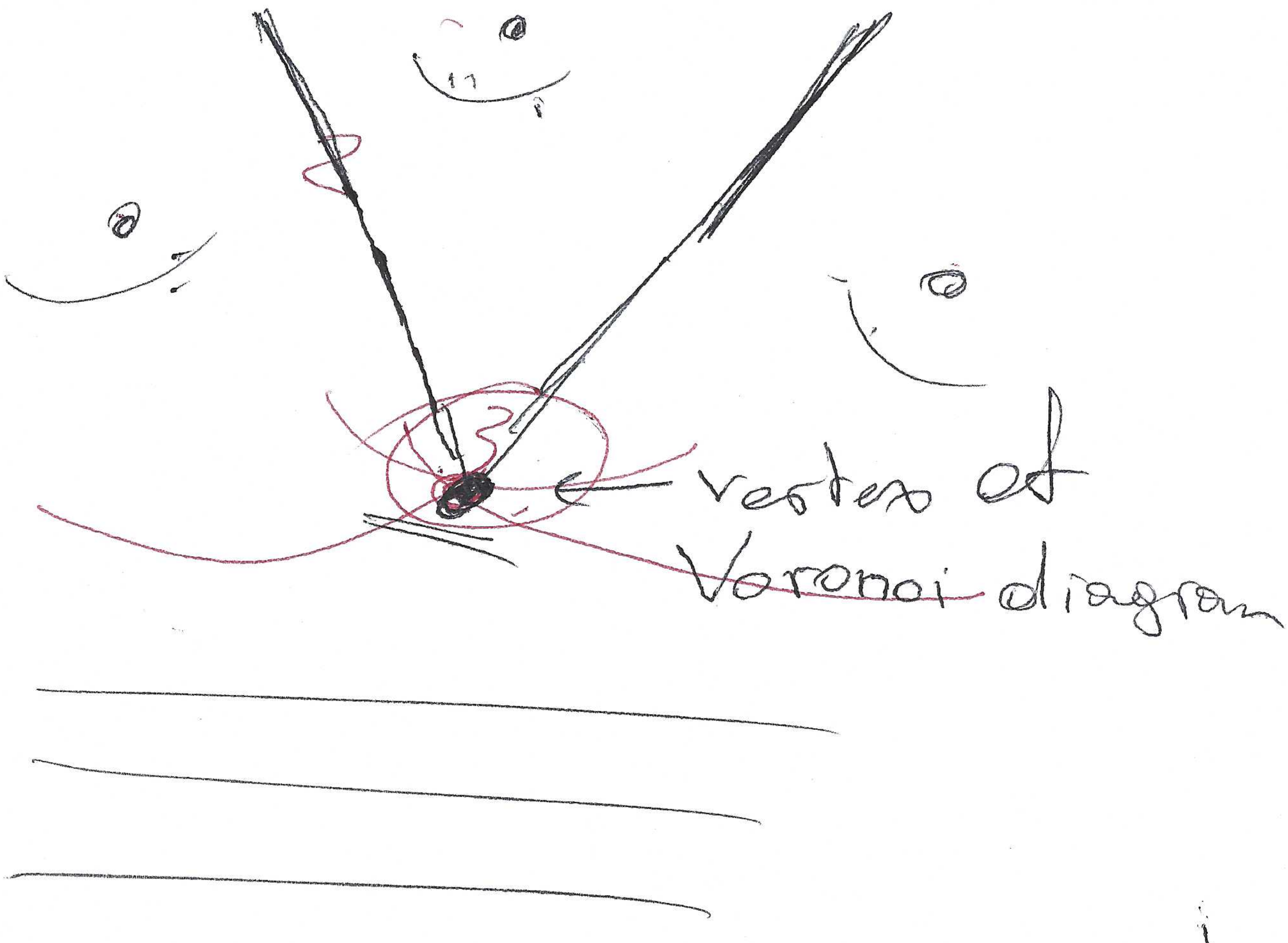
Parabola = set of points equidistant from directrix and focus



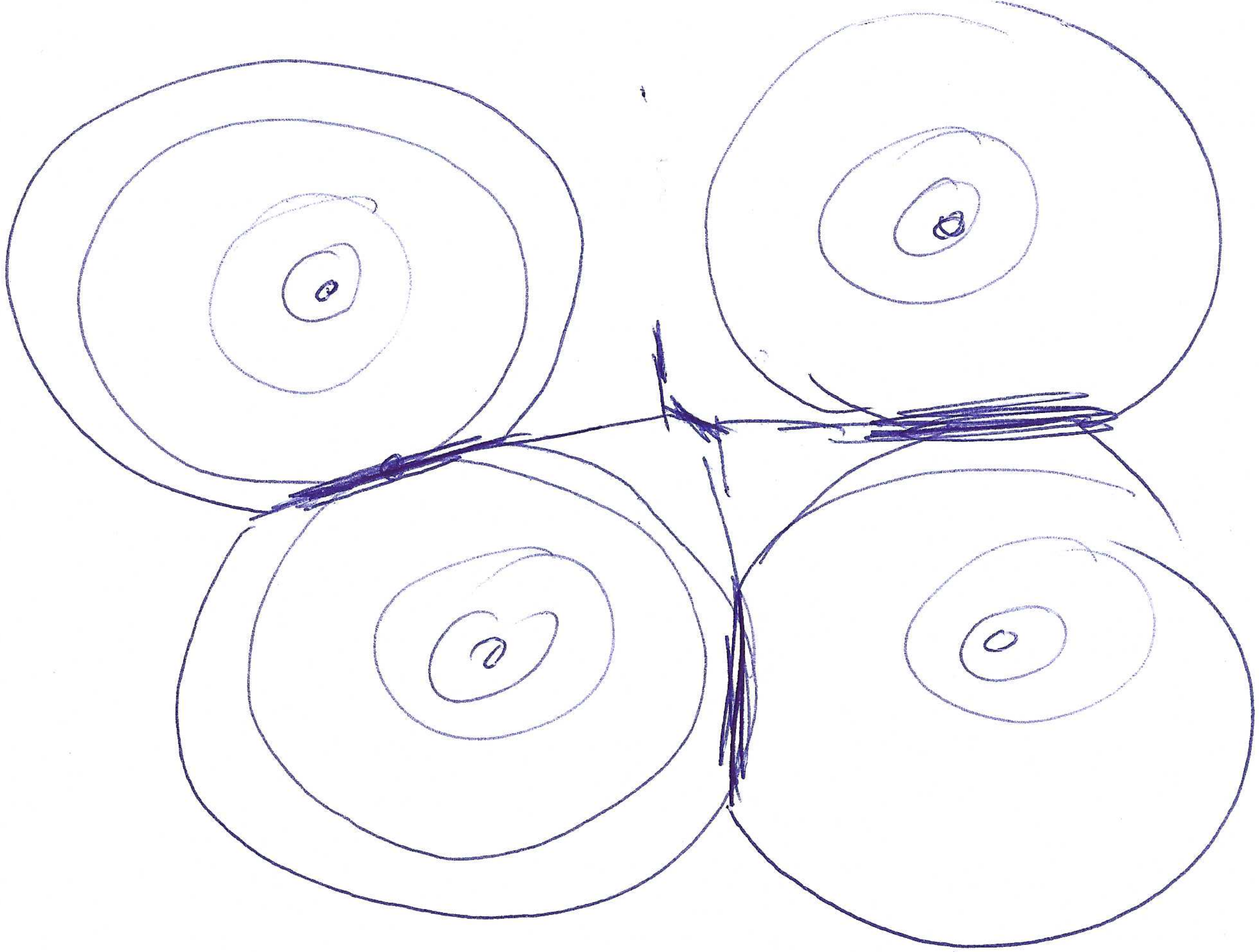


sweep line


same
∈ to mid. perp.


vertex of
Voronoi diagram

growing
circles!

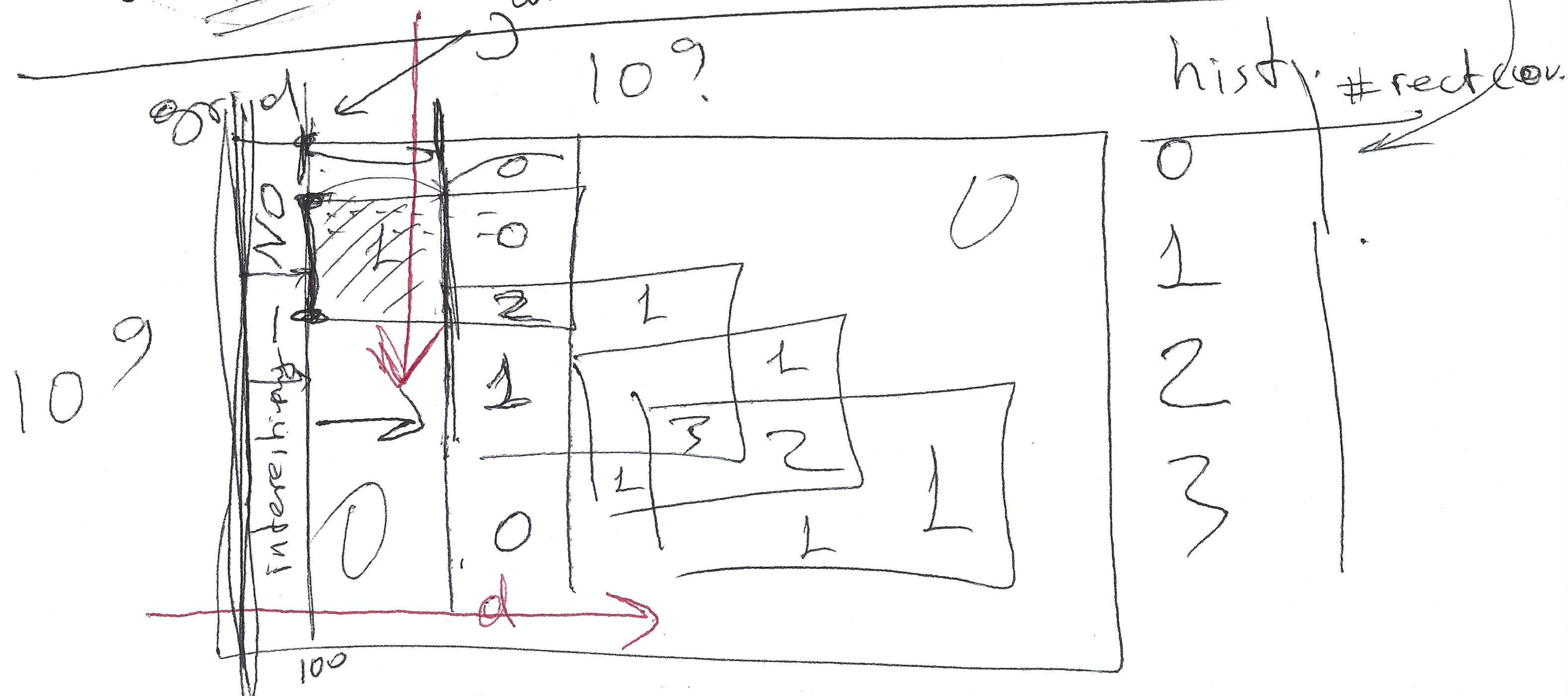


continuous solution $\xrightarrow{\text{event.dr.des}}$ disretization

even.dr.des coarse discr.

discrete solut on 10^9 points

jumb $10^9 \times 400$ of 0 overlap.



for i 0 → 10^9, for j 0 → 10^9

M W Q Sun M F
X ToC 1 1pm Exam Oral.
TM email. TM

extra
4%

~~D&C~~	Easy	Hard
D&C.	1	2
Greedy	1	~~X~~
DP.		2/0 D.P.
I+I.		
Sw. Line		

$\underbrace{}$
80%

3-4 hard ones to get to 100%

1-2 extra credit

Surprise problems.