

Discrete and Computational Geometry

Cesar Ceballos

Winter Semester 2024/2025

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Lecture (VO) :

Mondays 10:15 - 11:45
Wednesdays 8:00 - 8:45

No lecture:

Weeks Nov 4-8
Jan 20-24

Exercises (UE) :

Wednesdays 8:45 - 9:30

Grading : Final oral exam.

Language : English.

Literature :

(1) Discrete and Computational Geometry
S.L. Devadas, J. O'Rourke

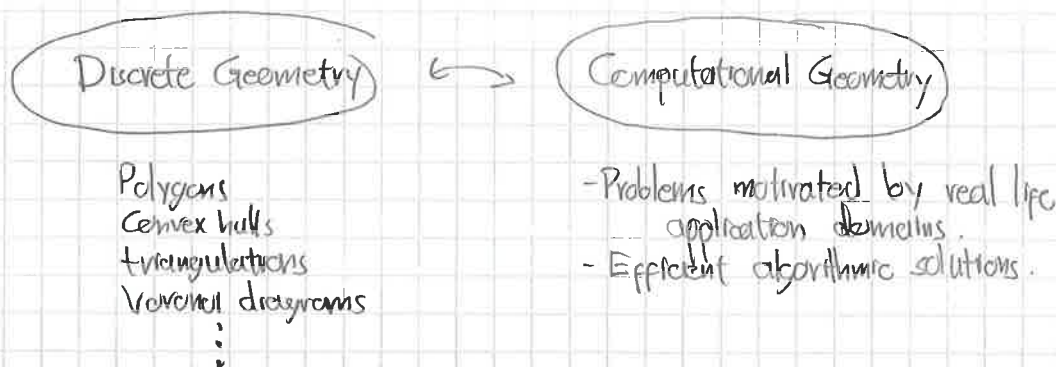
(2) Computational Geometry
M. de Berg, G. Cheong, M. van Kreveld, M. Overmars.

Course Website :

My website → teaching → Discrete and Computational Geometry.

Post : Lecture notes
Exercises

Overview of the course : Exploit powerful interplay between.



Example The Art Gallery Problem



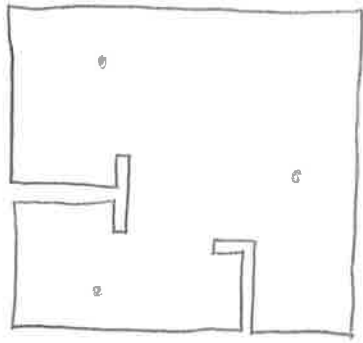
Art Gallery whose floor is modelled by a polygon.

5 or 6 guards?

Problem:

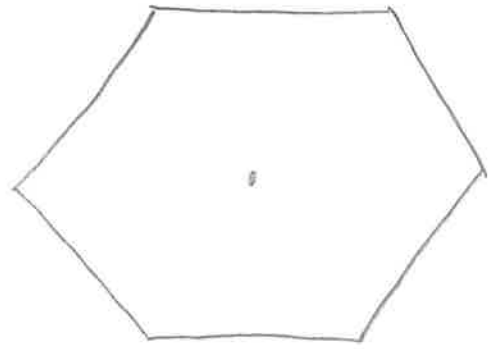
- (1) How many guards do we need to observe the entire gallery (at the same time)?
- (2) How do we decide how to place them?

(A)



3

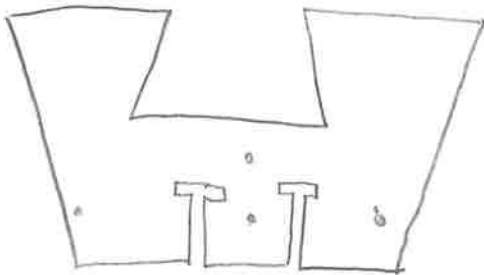
(B)



1

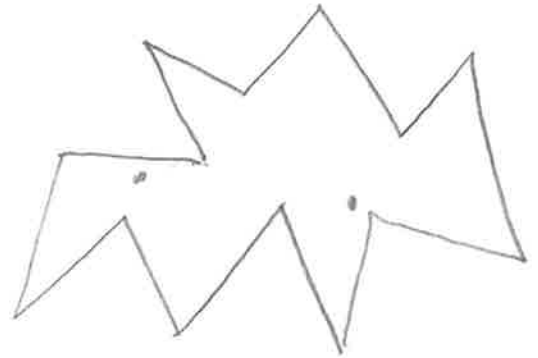
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(C)



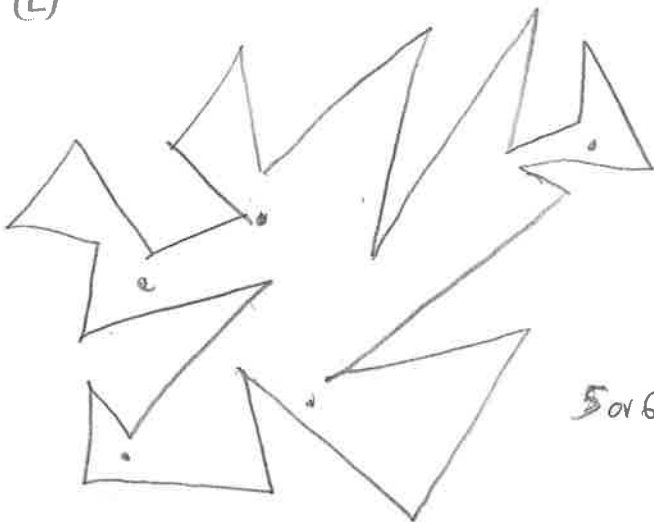
3 or 4?

(D)



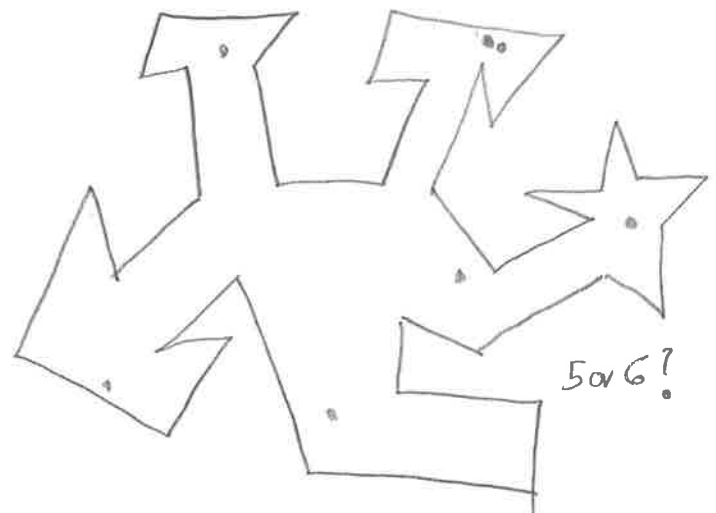
2 or 3?

(E)



5 or 6?

(F)



5 or 6?