Lecture 29

Lagrange

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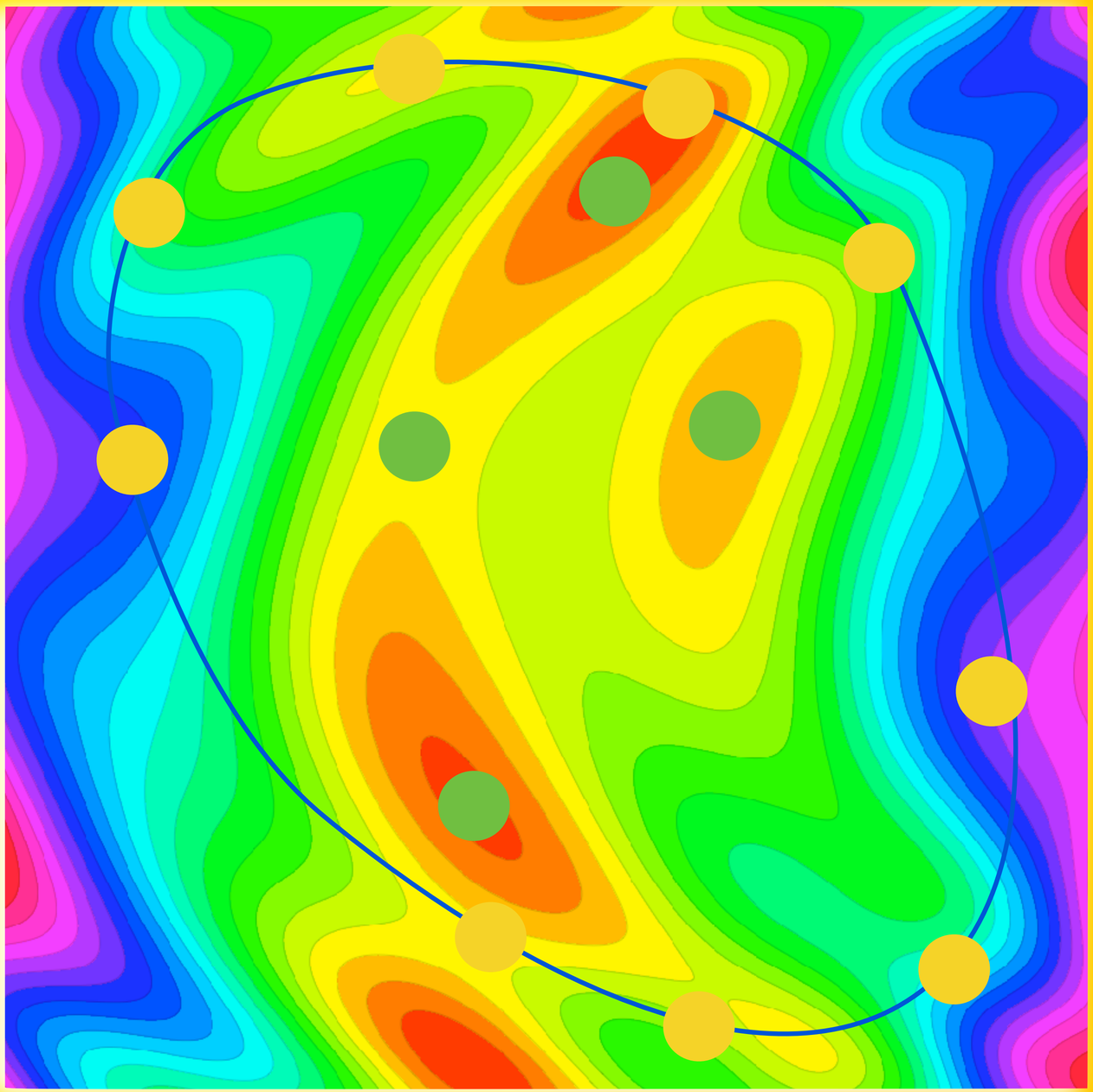
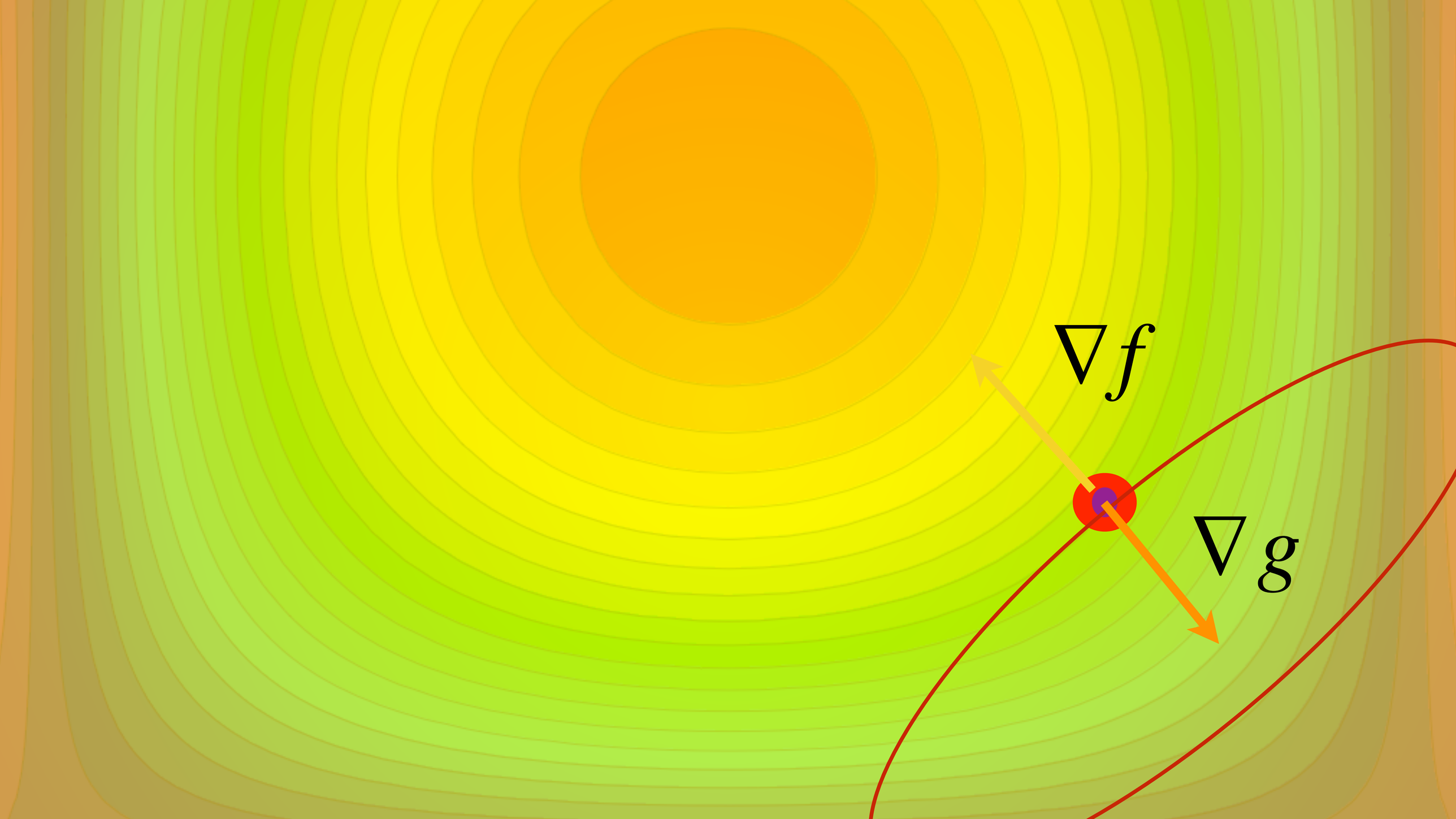
Motivation

Global maxima

When finding global maxima, we also need to look at the boundary



The equations

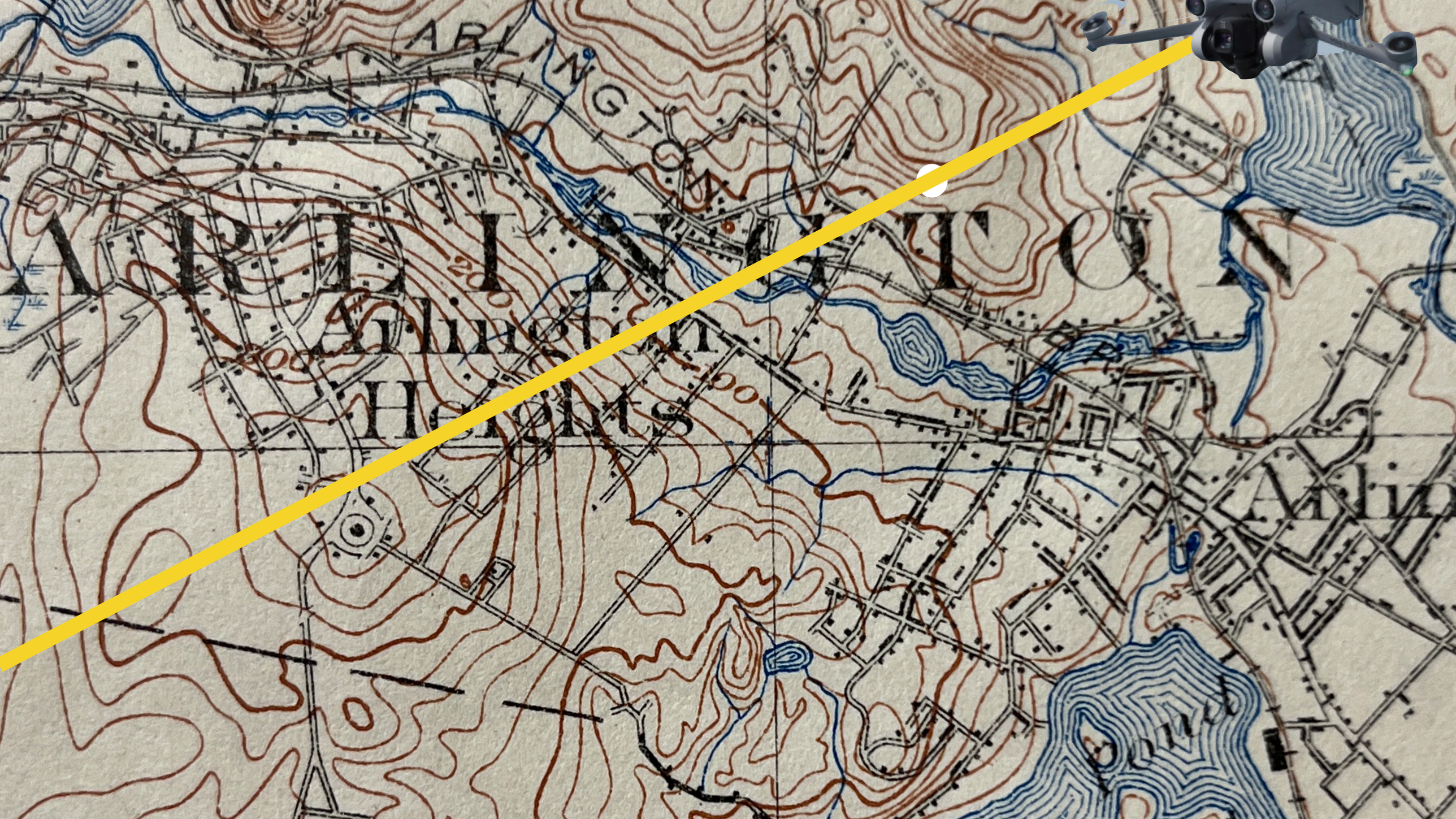

∇f
∇g

$$\nabla f = \lambda \nabla g$$

$$g = c$$

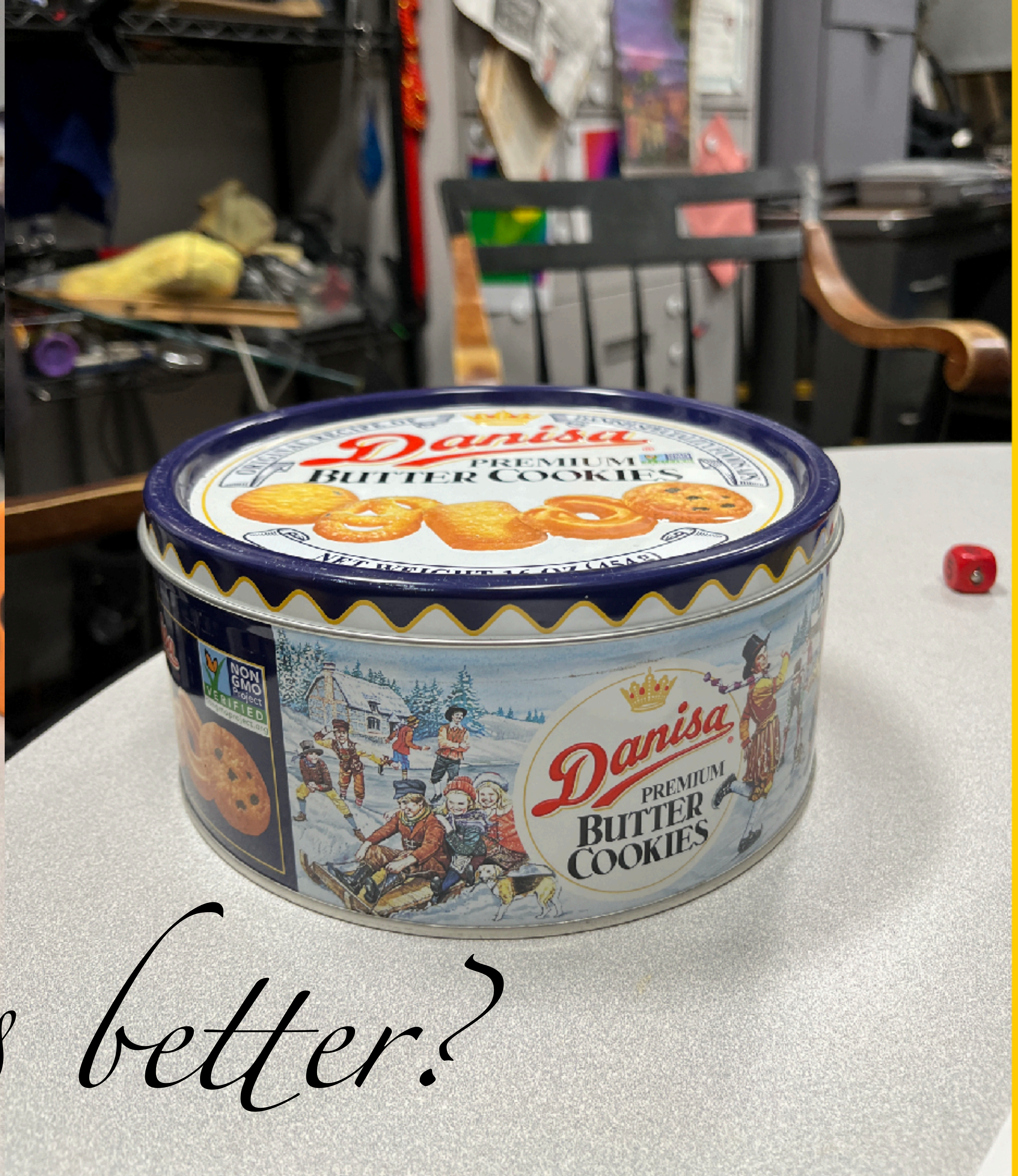
Joseph-Louis Lagrange, 1736-1817

Drone Example


ARLINGTON
ARLINGTON
Arlington
Heights
200
100

Can Example

Assume we want to minimize the surface area of a can holding a certain amount of coke. What r,h values are best?



What is better?

Entropy and Free Energy


min energy U
max entropy
S
min free energy
F=U-TS
Shannon
Helmholz

Entropy house

THE END