

# Optimization - Summary

1) Formulation of the optimization problem  
→ already in the report

New 2) Existence of the solution  
→ Direct method

3) Introduction of bivectors of  $\mathbb{R}^4$ .

4) G - Orthogonalization

5) Solution of the optimization problem  
in the simple case

New 6) Result about an optimal curve in the  
non-simple curve satisfying (EL).  
↳ simplify calculation.

New. 7) Solution of the optimization problem  
in the non-simple case.

---

6) Apply the Theorem from the book

7.1) Discuss the structure of the solution

7.2) Show that the periodicity characterizes  
the Lagrange multipliers (ellipsoids)

7.3) Show that  $\lambda_1 = 1$  and  $\lambda_2 = 2$ .