

Oral exam topics for Convex Geometry

- (1) Affine spaces, affine sets, affine combinations
- (2) Convex sets, convex combinations, convex hull
- (3) Theorems of Radon, Carathéodory and Helly, their applications
- (4) Linear functionals, Minkowski sum, separation and isolation theorems
- (5) Extremal and exposed points, theorems of Krein-Milman and Straszewicz
- (6) Indicator function, algebras of compact/closed convex sets, Euler characteristic and Euler's theorem
- (7) Convex polytopes and their minimal representations, properties of their face structures
- (8) Polarity, its properties, combinatorially equivalent and dual polytopes, volume product
- (9) Hausdorff distance and its properties