- defined convex combination, convex set, and convex hull
- proved the Caratheodory's theorem: refer to wiki
- for a set S of points in $\mathbb{R}^2$, proved the set that precisely comprises all the convex combinations of points in S is the convex hull of points in S
- defined hyperplane, closed/open half-space, closed/open half-plane in the plane, supporting line in the plane, extreme point of a set of points
- defined H-polyhedron (a.k.a., convex polyhedron), H-polytope, V-polytope (a.k.a., convex polytope)
- proved Minkowski-Weyl's theorem for $\mathbb{R}^2$: each V-polytope is an H-polytope, and each H-polytope is a V-polytope
- analyzed a naive algorithm for computing the convex hull of a set of points in the plane