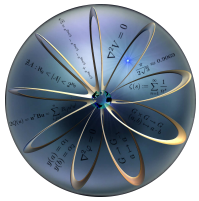

planetmath.org

Math for the people, by the people.

Carathéodory's theorem

Canonical name	CaratheodorysTheorem
Date of creation	2013-03-22 13:57:43
Last modified on	2013-03-22 13:57:43
Owner	bbukh (348)
Last modified by	bbukh (348)
Numerical id	6
Author	bbukh (348)
Entry type	Theorem
Classification	msc 52A20
Related topic	ConvexSet

Suppose a point p lies in the convex hull of a set $P \subset \mathbb{R}^d$. Then there is a subset $P' \subset P$ consisting of no more than $d+1$ points such that p lies in the convex hull of P'.

For example, if a point p is contained in a convex hull of a set $P \subset \mathbb{R}^2$, then there are three points in P that determine the triangle containing p, provided, of course, that P contains at least three points.