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Erdős, Pál
Geometrical and set-theoretical properties of subsets of Hilbert-space (In Hungarian)
Mat. Lapok 19, 255-257 (1968). [0025-519X]

The author proved in a previous paper without assuming the continuum- hypothesis that if S is a subset of an n-dimensional space then S contains a subset S_1 of power m so that all the distances between points of S_1 are distinct. $C \times t$ o-by, Kakatuani and the author showed that if P is any denumerable dense set of positive numbers then there is a set H in a Hilbert space of power $\aleph_1$ so that all the distances between points in H are in P, further there is a set H_1 of power C in Hilbert space so that all the distances between points in H_1 are the square root of a rational number. We do not know if all the distances can be rational.
Is it true that if H is a set of power m in a Hilbert space then H has a subset of power m which does not contain an equilateral triangle?

Classification:
46C05 Geometry and topology of inner product spaces