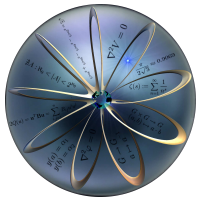

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hyperplane

Canonical name	Hyperplane
Date of creation	2013-03-22 15:15:12
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Entry type	Definition
Classification	msc 46H05
Defines	real hyperplane
Defines	complex hyperplane

Let E be a linear space over a field k. A hyperplane H in E is defined as the set of the form

$$H = \{x \in E : f(x) = a\}$$

where $a \in k$ and f is a nonzero linear functional, $f : E \to k$. If $k = \mathbb{R}$ or $\mathbb{C}$, then H is called a *real hyperplane* or *complex hyperplane* respectively.

Remark. When $k = \mathbb{C}$, the word "hyperplane" also has a more restrictive meaning: it is the zero set of a complex linear functional (by setting $a = 0$ above).