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space of functions associated to a divisor

Canonical name	SpaceOfFunctionsAssociatedToADivisor
Date of creation	2013-03-22 14:12:25
Last modified on	2013-03-22 14:12:25
Owner	mathcam (2727)
Last modified by	mathcam (2727)
Numerical id	4
Author	mathcam (2727)
Entry type	Definition
Classification	msc 14H99

Let C/K be a curve defined over the field K , and D a divisor for that curve. We define the *space of functions associated to a divisor* by

$$\mathcal{L}(D) = \{f \in \overline{K}(C)^* : \operatorname{div}(f) \geq -D\} \cup \{0\},$$

where $\overline{K}(C)^*$ denotes the dual to the function field of C .

For any D , $\mathcal{L}(D)$ is a finite-dimensional vector space over \overline{K} , the algebraic closure of K , and we denote its dimension by $\ell(D)$, a somewhat ubiquitous number that, for example, appears in the Riemann-Roch theorem for curves.