Barycentric Coordinates

1 Why

TODO

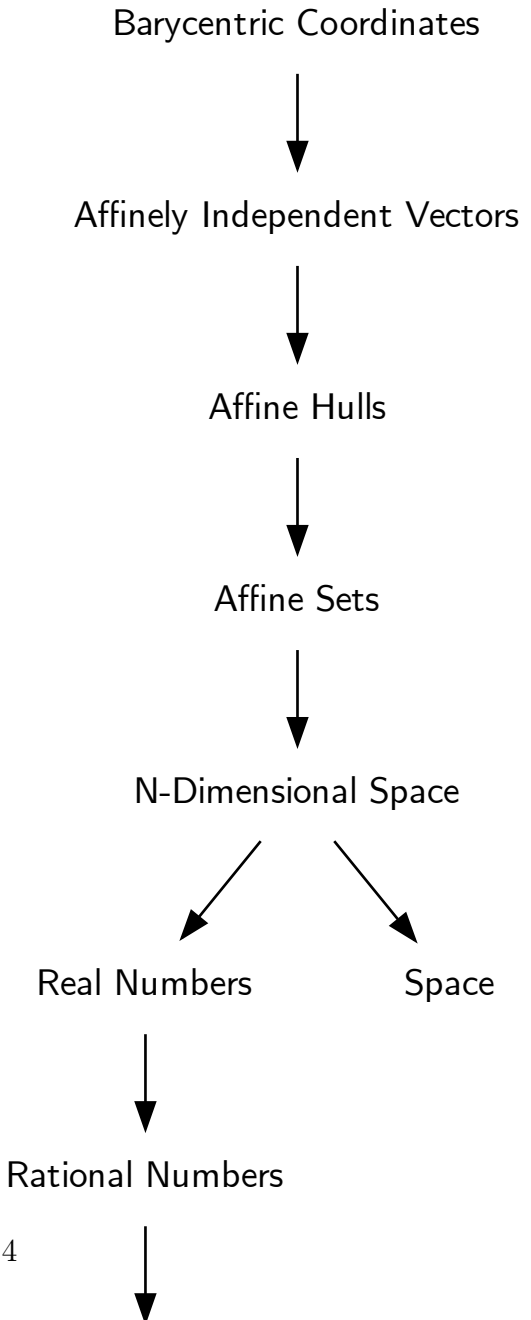
2 Defining Result

Proposition 1. *If* $M = \mathbf{aff}\{b_0, b_1, \ldots, b_m\}$ *then for each* $x \in M$ *there exists* (λ_i) *such that*

$$x = \lambda_0 b_0 + \lambda_1 b_1 + \cdots + \lambda_m b_m$$

with $\sum_i \lambda_i = 1$. *The* (λ_i) *are unique if the set of vectors is affinely independent.*

The *barycentric coordinates* for a vector x in the affine hull of a set of affinely independent vectors is the sequence of unique coefficients expressing the vector as an affine combination of the set of vectors.


Barycentric Coordinates
Affinely Independent Vectors
Affine Hulls
Affine Sets
N-Dimensional Space
Real Numbers
Space
Rational Numbers