

## 1.109: Vector module

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A *vector module* is the set of vectors spanned by a number  $n$  of basis vectors with integer coefficients. The basis vectors should be independent over the integers, which means that any linear combination

$$\sum_i m_i a_i$$

with  $m_i$  integers is equal to zero if, and only if, all coefficients  $m_i$  are zero. The term *Z-module* is sometimes used to underline the condition that the coefficients are integers. The number of basis vectors is the *rank* of the vector module.

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