

finite generation and presentation

definition

Let A be a ring and M a module over A . We say M is finitely generated if there is a presentation of the form

$$R \rightarrow A^n \rightarrow M \rightarrow 0$$

for some integer n .

definition

Let A be a ring and M a module over A . We say M is finitely presented if there is a presentation of the form

$$A^m \rightarrow A^n \rightarrow M \rightarrow 0$$

for some integers n, m .

Question

Show that \mathbb{Q}/\mathbb{Z} is not finitely generated over \mathbb{Z} .

