<hello@qingpei.me>

qingpei.me

2020 3 28

1

lrightWrite something.

normal **bold** *italic*

`monospace` `bold` `italic`

sans-serif **bold** italic

2

lright

Let A be a ring $\neq 0$. Show that $A^m \cong A^n \Rightarrow m = n$ [Let m be a maximal ideal of A and let $\phi : A^m \rightarrow A^n$ be an isomorphism. Then $1 \otimes \phi : (A/m) \otimes A^m \rightarrow (A/m) \otimes A^n$ is an isomorphism between vector spaces of dimensions $mandnoverthefieldk = A/m.Hencem = n.]$ (Cf. Chapter 3 , Exercise $15.)$ If $\phi : A^m \rightarrow A^n$ is surjective, then mn If $\phi : A^m \rightarrow A^n$ is injective, is it always the case that $mn?$