

$$\dim_{\mathbb{F}} \mathbb{F} \otimes_{\mathbb{F}} \mathbb{K} = \dim_{\mathbb{F}} \mathbb{F} \otimes_{\mathbb{F}} \mathbb{F}$$

$$\dim_{\mathbb{F}} \mathbb{F} \otimes_{\mathbb{F}} \mathbb{F} \leftarrow \dim_{\mathbb{F}} \mathbb{F} \otimes_{\mathbb{F}} \mathbb{F}$$

$$\mathbb{F} \otimes_{\mathbb{F}} \mathbb{F} = \mathbb{F} \otimes_{\mathbb{F}} \mathbb{F}$$

$$\dim_{\mathbb{F}} \mathbb{F} \otimes_{\mathbb{F}} \mathbb{K} \leftarrow \dim_{\mathbb{F}} \mathbb{F} \otimes_{\mathbb{F}} \mathbb{K} \ni \gamma$$

$$\Rightarrow \dim_{\mathbb{F}} \mathbb{F} \otimes_{\mathbb{F}} \mathbb{K} = \dim_{\mathbb{F}} \mathbb{F} \otimes_{\mathbb{F}} \mathbb{K} = \dim_{\mathbb{F}} \mathbb{F} \otimes_{\mathbb{F}} \mathbb{F}$$